

Birchwood Airport Master Plan Update

Public Review Draft

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List of Abbreviations

AAC	Aircraft Approach Category
AASP	Alaska Aviation System Plan
AC	Advisory Circular
ACAIS	Air Carrier Activity Information System
ACRP	Airport Cooperative Research Program
ACSM	Airfield Capacity Spreadsheet Model
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADG	Aircraft Design Group
ADLWD	Alaska Department of Labor and Workforce Development
ADNR	Alaska Department of Natural Resources
ADS-B	Automatic Dependent Surveillance-Broadcast
AGL	Above Ground Level
AIA	Ted Stevens Anchorage International Airport
AIP	Airport Improvement Program
ALP	Airport Layout Plan
AMP	Airport Master Plan
AMSA	Alaska Mountain Soaring Association
ARC	Airport Reference Code
APRC	Approach Reference Code
ARRC	Alaska Railroad Corporation
ASV	Annual Service Volume
AWOS	Automated Weather Observation System
BCV	FAA Airport Identifier for Birchwood Airport
BTS	Bureau of Transportation Statistics
CAP	Civil Air Patrol
CE	Categorical Exclusion
CFR	Code of Federal Regulation
CIP	Capital Improvement Plan
CMBR	Chugach Mountain Bike Riders

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
EA Environmental Assessment
EFH..... Essential Fish Habitat
FAA..... Federal Aviation Administration
FEMA Federal Emergency Management Agency
FO Fiber Optic Cable
FY Fiscal Year
G.A.R.D General Audio Recording Device
GA..... General Aviation
HDL HDL Engineering Consultants, LLC
IFR Instrument Flight Rules
JBER Joint Base Elmendorf-Richardson
LED..... Light Emitting Diode
M&O Maintenance and Operations
MIRL..... Medium-Intensity Runway Edge Lighting
MITL..... Medium-Intensity Taxiway Edge Lighting
MOA Municipality of Anchorage
MSB Matanuska-Susitna Borough
MTOW Maximum Take-off Weight
NAS..... National Airspace System
NAICS..... North American Industry Classification System
NDB Non-directional Beacon
NEPA National Environmental Policy Act
NextGen Next Generation Air Transportation System
NHPA..... National Historic Preservation Act
NRHP National Register of Historic Places
NMFS..... National Marine Fisheries Service
NOAA..... National Oceanic and Atmospheric Administration

NPIAS	National Plan of Integrated Airports System
NPS	National Park Service
OFA	Object Free Area
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
PCI	Pavement Condition Index
PIP	Public Involvement Plan
ROW	Right-of-Way
RPZ	Runway Protection Zone
RSA	Runway Safety Area
SAG	Stakeholder Advisory Group
SHPO	Alaska State Historic Preservation Office
SREB	Snow Removal and Equipment Building
STOL	Short Take-off and Landing
TAF	Terminal Area Forecast
TDG	Taxiway Design Group
TW	Taxiway
USACE	U.S. Army Corps of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VOR	Very High Frequency Omnidirectional Range

1.0 INTRODUCTION

The purpose of this Master Plan Report Update is to document the existing conditions of the Birchwood Airport, determine its current and forecasted uses, and identify areas that need to be improved to increase safety and better meet the needs of the airport operators, users, and other stakeholders.

Birchwood Airport (Federal Aviation Administration [FAA] identifier: BCV) is a general aviation (GA) airport located in southcentral Alaska, approximately 20 miles northeast of Anchorage, in the unincorporated community of Chugiak within the Municipality of Anchorage (MOA). The airport serves a regional role for the Anchorage, Eagle River, Chugiak, Palmer, and Wasilla GA communities. Commercial operations on the field include aircraft manufacturing, maintenance, fuel sales, and aircraft storage facilities. Operations mostly consist of small GA aircraft mixed with ultra-light, glider, Civil Air Patrol (CAP) search and rescue, and occasional air taxis. The existing airport layout is shown in Figure 1.

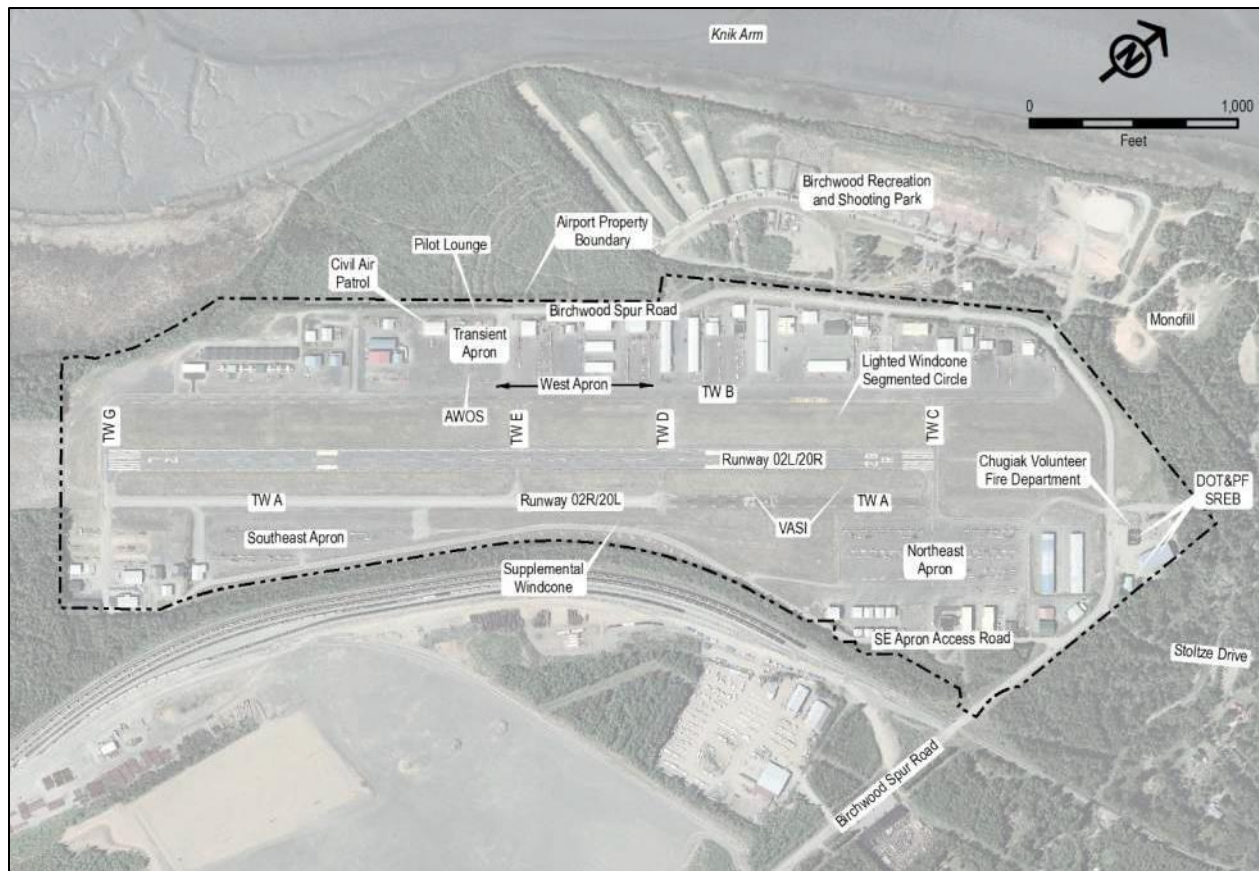


Figure 1: Existing Layout of Birchwood Airport

The airport is owned by the State of Alaska and is managed by the Department of Transportation and Public Facilities (DOT&PF). It is classified as a Non-Primary GA Airport by the FAA's National Plan of Integrated Airport Systems (NPIAS). The Alaska Aviation System Plan (AASP) identifies Birchwood Airport as a Local High Activity airport. Local Airports generally serve the GA 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 NPIAS; does not meet the definition of an International, Regional, or Community class airport; and has 20 or more based aircraft.

The most recent Airport Master Plan (AMP) for Birchwood Airport was completed in 2005 (HDR Alaska Inc., 2005). Since the completion of the AMP, private development at the airport has continued with the construction of individual and multiple-unit hangars, reducing the developable land available for lease.

The last Airport Layout Plan (ALP) update occurred in 2016. The ALP identifies the Airport Reference Code (ARC) for Birchwood Airport as B-II, which meets the requirements of aircraft with approach speeds up to 121 knots and wingspans as large as 79 feet (DOT&PF, 2012). The public-use aprons are designed for aircraft with wingspans up to 49 feet (Design Group I aircraft).

The DOT&PF currently manages and maintains the airport using maintenance personnel that perform these duties along with their other highway-related maintenance responsibilities. The airport is unmanned and currently managed by a DOT&PF Maintenance Foreman. Leasing of lease lots and tie-downs is handled by DOT&PF’s Office of Aviation Leasing. The tie-down program at Birchwood Airport is coordinated by a Statewide Aviation Airport Leasing Specialist located in DOT&PF’s Fairbanks office. The Statewide Airport Leasing Program Manager makes programmatic decisions and is located in DOT&PF’s Anchorage office.

Airport improvements at Birchwood are funded through a combination of appropriations through the State of Alaska General Fund and Airport Improvement Program (AIP) grants from the FAA. In general, the FAA provides \$150,000 in yearly AIP entitlement funding for Non-Primary GA Airports. However, the FAA also allows DOT&PF to pool the entitlement funding for all of their Non-Primary Airports and use the total amount to construct prioritized improvements across their entire Non-Primary Airport network. The FAA can provide additional support to a particular improvement by allocating “discretionary” AIP funding to the project if the AIP program funding designated by the U.S. Congress exceeds the level necessary to meet the commitments of the entitlements. Projects funded through the AIP program are subject to a 6.25% local DOT&PF match. The DOT&PF Airport Project Evaluation Board meets annually or semi-annually to evaluate Non-Primary Airport improvement projects and establish funding priorities.

2.0 INVENTORY OF EXISTING CONDITIONS

HDL Engineering Consultants, LLC (HDL) conducted an onsite inspection of Birchwood Airport on June 23, 2020 (Appendix A). The focus of the inspection was to inventory and assess the condition of existing airport facilities. As part of the inventory, interviews were conducted with DOT&PF's Maintenance and Operations (M&O), DOT&PF's Statewide Aviation Leasing office, tie-down holders, leaseholders, hangar associations, CAP, the Alaska Mountain Soaring Association (AMSA) glider club, and based and non-based commercial operators.

2.1 Airport and Regional Overview

2.1.1 Regional Setting

The Birchwood Airport is in the Chugiak-Eagle River area, which includes the communities of Eagle River, Eagle River Valley, South Fork, Chugiak, Birchwood, Peters Creek, and Eklutna. The airport resides within the boundaries of the MOA and is 20 miles north of the Anchorage Bowl. Anchorage is the urban, economic, and transportation hub of the state and includes an international airport, as well as several smaller airports that serve commercial and private users.

Special Use Airspace Restricted Area R-2203, associated with Joint Base Elmendorf-Richardson (JBER), is located to the west of Birchwood Airport.

2.1.2 Community Overview

Birchwood is a neighborhood in the Chugiak-Eagle River area, primarily serving as a bedroom community to Anchorage. Historically, the Tanaina inhabited this land, which the Eklutna Tribe now represents. Eklutna, Inc., a Native corporation organized under the Alaska Native Claims Settlement Act of 1971, is the largest private landowner in Anchorage and owns much of the land adjacent to the airport.

Like many places in Alaska, the Anchorage and Chugiak-Eagle River areas have a robust flying community. However, the Birchwood Airport provides a unique service to pilots as an airport that primarily caters to general aviation and has airspace that is not controlled by Air Traffic Control under Visual Flight Rules (VFR) flight conditions. That, coupled with the low cost for users, offers pilots a convenience not found at other airports in the region. Users report it is a popular location for new and learning pilots due to the ease of access.

2.1.3 Land Ownership and Current/Future Adjacent Land Uses

The area surrounding the Birchwood Airport includes lands owned by a combination of MOA (west), Alaska Railroad Corporation (ARRC) (southeast), and private lands (Figure 2). The largest private landowners bordering the airport include Eklutna, Inc. (northeast and southwest) and Izaak Walton League (northwest).

The Ted R. Smith Tactical Training Facility for law enforcement is located on about 34 acres of land owned by the MOA. The training facility is located south of the Birchwood Recreation and Shooting Park and between Birchwood Airport and Cook Inlet.

Alaska Railroad Corporation

The ARRC owns two parcels of land next to the airport, primarily to the east. One is an approximate 14 acre vacant parcel, and the other is a 160-acre parcel that includes the railway. In addition to rail use, ARRC stores equipment, materials, and freight on the property. ARRC representatives said they have little interaction with the Birchwood Airport and do not currently have plans for development that would impact airport users. When interviewed in 2020, an ARRC representative said that the long-term plan is to increase access to the railyard and increase storage.

Eklutna, Inc.

As of 2023, Eklutna, Inc. owns 660 acres to the south and 40 acres to the north of the airport. When interviewed for the AMP in the fall of 2020, Eklutna, Inc. representatives reported their short- and long-term land use goals are to be “good land stewards” and “provide the most benefit to their shareholders as possible.” Overall, Eklutna, Inc. representatives see the airport as a community asset and support land uses and related activities that benefit airport functions. In an August 24, 2023 letter to DOT&PF, Eklutna, Inc. clarified its position by stating that “At this time, Eklutna, Inc. has no plans to sell any of the property adjoining the Airport. Although it may have been communicated that Eklutna’s position in the past was to sell this land, we would prefer evaluating development of our adjacent parcels through efforts by our development and construction divisions. While some measure of real estate transactions may need to occur during Airport expansion, we strongly feel we should have the opportunity to develop our land rather than cede it to a public entity.”

Birchwood Inert Waste Monofill

The Birchwood Inert Waste Monofill is located northwest of the airport that is owned and operated by the Izaak Walton League, used for the disposal of construction and demolition debris. The permit is “active” but expires on February 3, 2025. Birchwood Recreation and Shooting Park representatives stated that it is no longer being filled with debris.

Birchwood Recreation and Shooting Park

Land belonging to the Izaak Walton League borders the airport to the northwest and houses the Birchwood Recreation and Shooting Park. The park sits on about 87 acres of land between the Birchwood Airport and Cook Inlet. The park has about 3,200 members with varying daily usage. Overall, there is little conflict, if any, between park and airport users. The park entrance is directly across from the airport, so there is concern that any expansion of the airport could impact the ability for park users to enter and exit the property. Park leadership plans to expand the shooting range but do not have significant plans to change land uses in or around the park boundaries. Any expansion is planned within the current footprint.



Figure 2: Land Ownership Adjacent to Birchwood Airport

2.1.4 Area Land Use Plan Goals and Zoning

Chugiak-Eagle River 2027 Long-Range Transportation Plan (2007)

The Chugach Mountain Bike Riders (CMBR), a Chugach-based non-profit, is spearheading an effort to develop the northern extension of the Coastal Trail, a 12-foot-wide multiuse soft-surface trail from Eagle River to Eklutna. The project is identified as one of 50 “Transportation Enhancement Recommendations” in the Chugiak-Eagle River 2027 Long-Range Transportation Plan (2007). The proposed trail runs from Beach Lake and continues up the coast and would span Fire Creek to Birchwood Spur via a connection along the airport. The CMBR has identified a preferred route is located along the western side of the airport with a desired 50’ trail easement to allow for trail development.

Chugiak-Eagle River Comprehensive Plan (updated 2006)

The 1993 Chugiak-Eagle River Comprehensive Plan (updated in 2006) applies to the Birchwood Airport and adjacent lands and recommends that land immediately surrounding the Birchwood Airport continue to be used as low-density residential and industrial areas or parks (Figure 3). The 2006 update similarly does not propose changes in use to the airport land or adjacent land and lists residential, industrial, and park development as priorities. The 2006 update predicts that Chugiak-Eagle River will continue to primarily have large-lot, single-family residential housing in the outlying areas, with some smaller subdivisions and multi-family housing in the central Eagle River area.

The 2006 update states that Eklutna, Inc.’s land in northern Chugiak-Eagle River includes the largest amount of suitable undeveloped land. In 2009, the Anchorage Assembly adopted a site-specific land use plan as part of the Chugiak-Eagle River Comprehensive Plan, the Chugiak-Eagle River Site Specific Land Use Plan. This site-specific plan (updated in 2018) largely focuses on the area of Carol Creek, about 12 miles southeast of the Birchwood Airport by road.

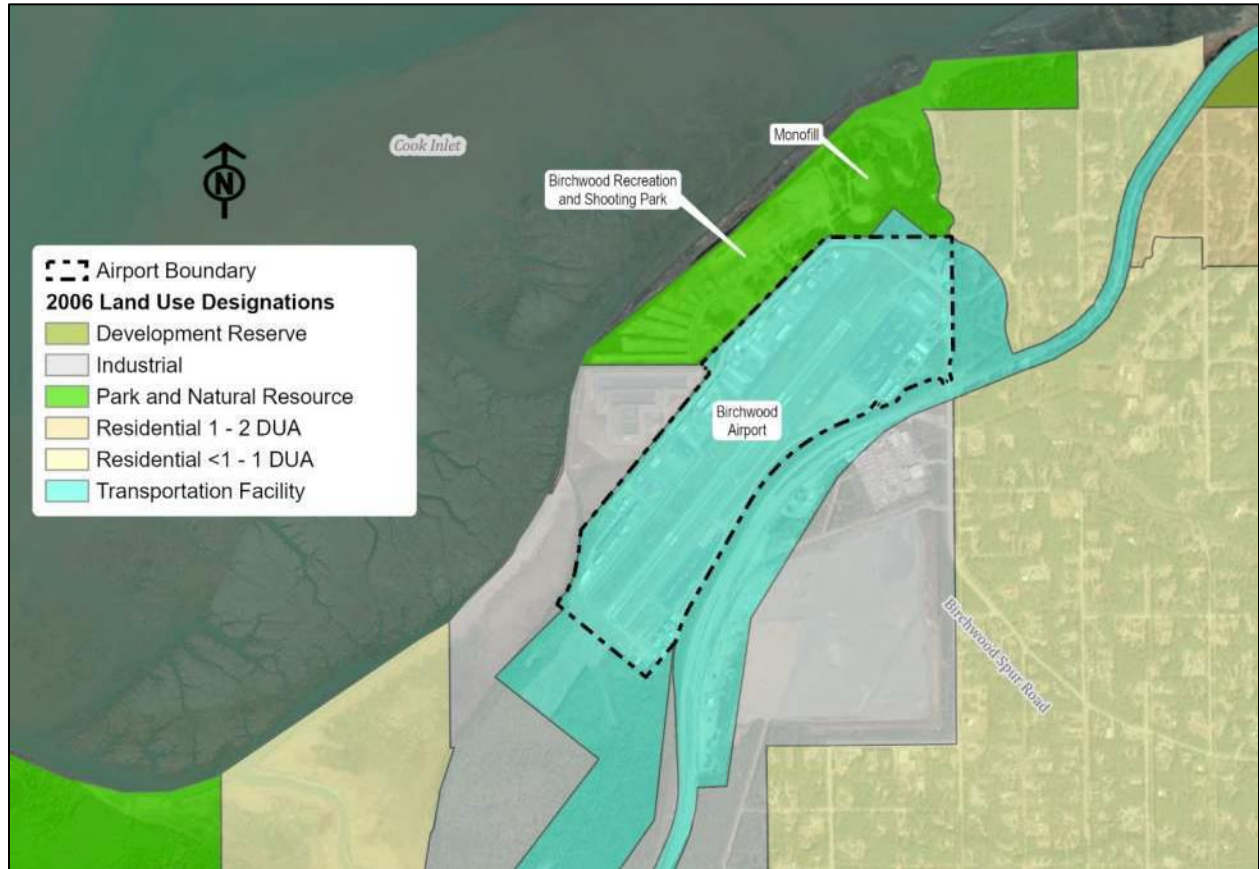


Figure 3: 2006 Chugiak Eagle River Comprehensive Plan Future Land Use

Municipality of Anchorage Title 21 Land Use Code

The MOA has an area-specific land use code in Title 21. Chapter 10 of Title 21 pertains explicitly to the Chugiak-Eagle River area (Figure 4). Below is a brief description of the relevant zoning as it pertains to the airport and potentially developable land south of the airport, owned by Eklutna, Inc., followed by broad descriptions of allowable use by zoning designation.

Through Title 21, the Birchwood Airport is zoned as “light industrial,” which allows for public and private light and general manufacturing, processing, service, storage, wholesale, and distribution operations along with other uses that support and/or are compatible with industrial uses. Title 21 Chapter 21.10 states that “all development in the airport district shall be governed by a State of Alaska master plan.”

An approximately 65-acre tract of land bordering the southern end of the airport is owned by Eklutna, Inc. and zoned as a combination of “Light Industrial” and “Rural Residential.” Tracts further south are owned by Eklutna, Inc. and zoned for “Rural Residential.” Within a 1-mile radius

of the airport, there is land zoned for “Heavy Industrial,” “Light Industrial,” “Public Lands and Institutions,” “Transition,” and “Rural Residential.”

Eklutna, Inc.’s land zoned “Light Industrial” would allow for airport expansion. The remainder of Eklutna, Inc.’s land in that area is zoned as “Rural Residential” (low-density residential) and would require rezoning before it could be developed for airport use. If Eklutna, Inc. were to consider a land transfer or if development were proposed on that land, the Eklutna Tribe would assess those lands for cultural and archaeological assets prior to any development taking place.

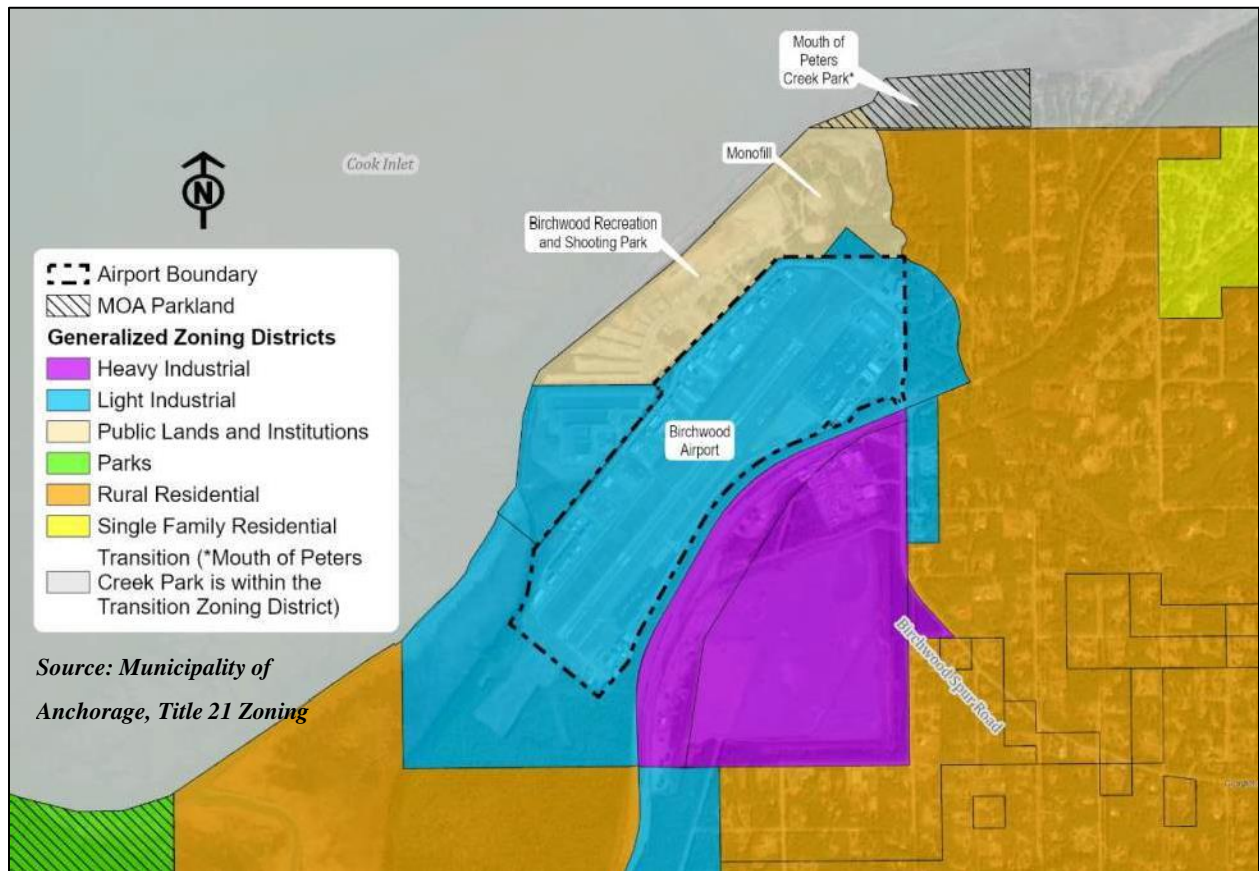


Figure 4: Municipality of Anchorage Zoning

There are three parcels of land designated as heavy industrial within a 1-mile radius of the Birchwood Airport, which are ARRC railway or are adjacent to the railway. Heavy industrial land allows for public and private heavy manufacturing, warehousing and distribution, equipment and materials storage, vehicle and equipment repair, major freight terminals, waste and salvage, resource extraction and processing, and other related uses. Some commercial uses, which support or are compatible with industrial uses, are also permitted or conditionally allowed. Non-industrial uses are more limited than in other districts to prevent land use and traffic conflicts, retain a preserve of activities that is supportive of industrial establishments, and to maintain and protect the supply of industrial lands within the municipality.

The Izaak Walton League Recreational Facility, containing the Birchwood Recreation and Shooting Park, abuts Cook Inlet and is zoned as Public Lands and Institutions. The Izaak Walton

League is a national conservation organization. Public Lands and Institutions lands are designated for “major public and quasi-public civic, administrative, and institutional uses and activities.”

The Cook Inlet shoreline northwest of the Birchwood Airport is zoned as Transition. The transition district, developed in the 1960s as the unrestricted district (U), was originally intended for areas that were not expected to be developed in the immediate future, and as development patterns occurred, were intended to be rezoned to more restrictive zoning classifications.

While low-density residential land surrounds the light and heavy industrial land around the Birchwood Airport on three sides, nearly all residential land is at least 1 mile from the airport footprint. Low-density residential is intended for those areas where natural physical features and environmental factors such as slopes, alpine and forest vegetation, soils, slope stability, and geologic hazards require unique and creative design for development.

2.1.5 Emergency Use

Chugiak and Eagle River are located on the Alaska Highway System and are accessible via the Glenn Highway. There are significant bridge crossings on the Glenn Highway over the Matanuska and Knik Rivers north of Chugiak and over Eagle River south of the City of Eagle River.

Conversations with the Airport Manager and air taxi operators in the spring of 2023, indicated that local residents and pilots considered Birchwood an emergency and/or alternative airstrip. In the case a large earthquake damages the Glenn Highway bridges, the airport can be used to provide access for emergency services to the Chugiak/Eagle River area. It is also considered an alternative airfield to Merrill Field by recreational and commercial operators, and Ted Stevens Anchorage International Airport (AIA) by some commercial operators when poor conditions at Merrill Field or AIA prohibit VFR operations.

2.1.6 Future Airport Expansion Opportunities

Opportunities to expand the airport footprint through potential land acquisitions are limited due to geographic and logistical constraints:

- Expansion to the east is highly unlikely, as it would require moving the existing railroad tracks owned and operated by ARRC. ARRC strongly opposed any expansion of airport lands in this area as it would unfavorably impact their operations.
- The land owned by the Izaak Walton Recreation League is zoned as “Public Lands and Institutions.” However, given the small size and proximity to the ocean, it is an unlikely candidate for expansion.
- Expansion to the north is challenging. Peters Creek runs just past the airport’s northern border. Further, the tract of land to the northeast is zoned as “residential.”
- The best potential area for expansion is the land south of the airport, the approximate 660 acres owned by Eklutna, Inc., which includes a single tract of nearly 65 acres. If that land was acquired, it would provide an area for hangar and lease lot development and the potential for even further expansion to the south. As noted above, Eklutna, Inc. is not in favor of selling its land but has expressed interest in developing its land to support future airport growth.

In summary, given the physical constraints and existing and intended future land use for areas adjacent to the airport, there are limited options to expand the current airport footprint. However, there are potential opportunities to support airport-related businesses and services within the existing footprint and on adjacent lands.

2.2 Description of Existing Facilities

2.2.1 History and Capital Improvements

The main runway at the Birchwood Airport was originally constructed in the 1940s as a backup airfield for the United States Army base, Fort Richardson, located approximately 12 miles southwest of the airport (Koehler, 2020). After being converted to civilian use in 1949 (FAA, 2020a), the runway was paved in 1972 and runway edge lights were installed (DOT&PF, 2020a). The following is a summary of the major development at the airport from 1977 through the present day. In some cases, these improvements were funded solely by the State of Alaska. In others, a large majority of the funding was provided through the FAA AIP, supplemented by matching funds from the State.

Year 1977: Parallel taxiways and associated connecting taxiways were constructed on the east and west sides of the runway. The Northeast and West Aprons were constructed as paved aprons, and the Southeast Apron was constructed with gravel surfacing. At the time, these aprons were identified as the West, East, and South Aprons, respectively. In addition, Birchwood Spur Road was paved to provide access to the west side of the airport (DOT&PF, 2020a).

Year 1979: The Snow Removal Equipment Building (SREB) was constructed using a grant from the State of Alaska. The grant included provisions to reserve two bays within the building for use by the Chugiak Volunteer Fire Department to store and maintain fire engines (Koehler, 2020) (DOT&PF, 2020a).

Year 1990: The Southeast Apron was paved and the Northeast Apron was expanded. Mandatory signs were added at the hold positions on all connecting taxiways. The Southeast Apron Road was paved, and a sand storage building was constructed adjacent to the SREB (DOT&PF, 2020a).

Year 2005 - 2006: A project was completed to replace the airfield lighting system. Runway edge lights and taxiway edge lights were replaced for Taxiways A, B, C, D, E, and G. Runway 01R/19L (currently Runway 023R/20L) was established on the center portion of Taxiway A, including pavement markings and threshold and runway edge markers. Edge markers were also installed on the southern portion of Taxiway A. Mandatory airfield signs were updated to include location signs. The project also included new constant current regulators and radio controls for the airfield lighting system (DOT&PF, 2020a). The DOT&PF also acquired a hydrostatic loader-mounted snow blower to perform snow removal.

Year 2013: Runway 02L/20R was resurfaced, and new runway markings were applied to the 20L threshold. The runway designations were revised from 01L/19R and 01R/19L to 02L/20R to 02R/20L (DOT&PF, 2020a).

Year 2019: Pavement was rehabilitated on the Taxiways B, C, D, E, and G and the Northeast and Southeast Aprons, and Transient Aprons. The project included the removal of pavement and base

course material and replaced it with foamed asphalt-treated base course and 2 inches of asphalt pavement. The project also included the installation of new tie-downs on the rehabilitated aprons (DOT&PF, 2018).

Table 1 includes a list of FAA AIP grants for airport improvements at the Birchwood Airport since the initiation of the AIP in 1982.

Table 1: AIP Grants Accepted for the Birchwood Airport

Federal Fiscal Year	Grant #	Description	Amount
1987	3-02-0034-001-1987	Rehabilitate Apron, Acquire Land for Development, Improve SREB, Improve Access Road, Construct Apron	\$ 986,385
2001	3-02-0034-002-2002	Conduct Master Plan Study, Phase 1	\$ 220,196
2002	3-02-0034-003-2002	Conduct Master Plan Study, Phase 2	\$ 185,718
2004	3-02-0034-004-2004	Install Runway Lighting 1L/19R	\$ 767,093
2006	3-02-0200-055-2006	Acquire Snow Removal Equipment - Hydrostatic loader-mounted snow blower	\$ 215,568
2006	3-02-0200-056-2006	Rehabilitate Runway 01L/19R (Maintenance)	\$ 6,327
2007	3-02-0000-008-2007	Conduct Environmental Study Conduct Archaeological Survey for G2G and complete EA	\$ 47,500
2008	3-02-0200-066-2008	Rehabilitate Runway 01L/19R (Maintenance)	\$ 134,700
2009	3-02-0034-005-2009	Conduct Airport Master Plan Study	\$ 151,080
2012	3-02-0034-006-2012	Rehabilitate Runway 01L/19R	\$ 1,366,134
2012	3-02-0200-084-2012	Remove Obstructions	\$ 220,196
2012	3-02-0200-087-2012	Rehabilitate Runway 01L/19R - Surface Preservation Maintenance	\$ 71,400
2018	3-02-0034-007-2018	Rehabilitate Paved Portion of 02R/20L, TWs B, C, D, E, and G, NE and SE Aprons	\$ 5,751,877
2018	3-02-0200-122-2018	Rehabilitate Runway 02R/20L- Apply Marking and Crack Seal to Runway 20L, and, incidentally, TWs and Apron	\$ 73,342
2019	3-02-0200-124-2019	Various Obstruction Removal: Brush Cutting and Tree Removal in 2L RPZ, 20R RPZ, 20R Approach Surface and from fence line.	\$ 986,385

Source: DOT&PF, 2020a

2.2.2 Pavement Condition

The DOT&PF performs a Pavement Condition Index (PCI) studies of all paved airfield surfaces every three years. The last pavement condition study for Birchwood Airport was completed in 2021. The 2021 PCI values recorded for Runway 02L/20R and the paved taxiways are discussed in their respective sections below. In general, the following ranges apply:

- PCI of less than 70 indicates a need for corrective maintenance or pavement rehabilitation, such as patching and crack sealing
- PCI of less than 60 indicates a need for rehabilitation, such as resurfacing
- PCI of less than 40 is an indicator of the need for reconstruction

Birchwood Airport is due for an updated pavement condition report in the latter part of 2024.

2.2.3 Airfield

2.2.3.1 Runways

The existing airfield configuration consists of two runways: paved Runway 02L/20R and gravel Runway 02R/20L. The existing runway, Runway Safety Area (RSA), Object Free Area (OFA), Obstacle Free Zone (OFZ) dimensions, and other related information are summarized in Table 2.

Table 2: Existing Runway Conditions

	Runway 02L	Runway 20R	Runway 02R	Runway 20L
Visibility Minimums	Visual	Visual	Visual	Visual
Type	Visual	Visual	Visual	Visual
Category	Utility ¹	Utility ¹	Utility ¹	Utility ²
Runway Design Group	B-II (utility)	B-II (utility)	A-I (utility)	A-I (utility)
Runway Length	4,012	4,012	1,802	1,802
Runway Width	100	100	50	50
Runway Shoulder Width	10	10	10	10
Runway Surface	Paved	Paved	1,200' Gravel/600' Paved ²	1,200' Gravel/600' Paved ²
Allowable Crosswind	13 kt	13 kt	10.5 kt	10.5 kt
Runway Safety Area				
- Length beyond departure end	240 ³	240 ³	240	240
- Length prior to threshold	240 ³	240 ³	240	240
- Width	150	150	120	120
Runway Object Free Area				
- Length beyond departure end	240 ³	200 ³	240	240
- Length prior to threshold	200 ³	240 ³	240	240
- Width	500	500	250	250
Runway Obstacle Free Zone				
- Length prior to threshold	200	200	200	200
- Width	250	250	120	120
Approach Runway Protection Zone				
- Length	1,000	1,000	1,000	1,000
- Inner width	250	250	250	250
- Outer width	450	450	450	450
- Area (acres)	8.035	8.035	8.035	8.035
Departure Runway Protection Zone				
- Length	1,000	1,000	1,000	1,000
- Inner width	250	250	250	250
- Outer width	450	450	450	450
- Area (acres)	8.035	8.035	8.035	8.035
Runway Separation to:				
- Hold Position	125	125	125	125
- Parallel Runway	200 ⁴	200 ⁴	200 ⁴	200 ⁴
- Parallel Taxiway	200/300 ⁵	200/300 ⁵	N/A	N/A
- Aircraft Parking	330/380 ⁶	330/380 ⁶	125	125

¹ Utility runways are intended for use by aircraft less than 12,500 pounds gross weight (14 Code of Federal Regulations [CFR] Part 77, 2010).

² The northern 600 feet of Runway 02R/20L is surfaced with asphalt pavement, while the southern 1,200 feet is surfaced with gravel.

³ The length of the RSA and OFA prior to the Runway 20R threshold is 240 feet. The length of the RSA and OFA prior to the Runway 02L threshold is 240 and 200 feet, respectively. The standard length for both the RSA and OFA prior to

the threshold of a B-II runway is 300 feet. An existing fence crosses both the RSA and the OFA 200 feet prior to the threshold. This fence is an obstruction.

⁴ The necessary separation between parallel runways during VFR conditions is 700 feet for simultaneous operations (FAA, 2014).

⁵ The separation listed refers to 200 feet from the runway centerline to Taxiway A and 300 feet to Taxiway B.

⁶ The separation listed refers to 330 feet to the Northeast and Southeast Aprons and 380 feet to parking on the west side of the runway.

Runway 02L/20R

Runway 02L/20R is a visual runway that measures 4,012 feet by 100 feet (Figures 5 and 6). The runway is classified as a utility runway and designed to accommodate Approach Category B and Design Group II aircraft. The runway surface was paved in 2013 and is in good condition. Runway pavement markings are worn (Figure 5). Results of the 2021 pavement condition study indicates that Runway 02L/20R received a PCI of 81, indicating that the runway only requires routine maintenance. The runway has non-precision pavement markings with runway threshold markings, runway designation markings, runway centerline, and runway edge markings.

The separation between paved Runway 02L/20R and gravel Runway 02R/20L is 200 feet, which does not meet FAA requirements for simultaneous operations. The required separation is 700 feet for simultaneous operations during VFR conditions (FAA, 2014).



Figure 5: Runway 20R

The runway has medium-intensity edge lights that were installed in 2005. The lights are operational and in fair condition but are near the end of their useful life.

Runway 02R/20L

Runway 02R/20L is a visual, gravel/ski utility runway designed to accommodate Approach Category A and Design Group I aircraft (Figure 6). The runway is classified as a utility runway and is frequently used by ultra-light aircraft and aircraft equipped with tundra tires in the summer and ski-equipped aircraft in the winter. The runway measures 1,802 feet by 50 feet. The southern 1,200-foot portion of the runway is surfaced with gravel and is in fair condition. The northern 600-

foot portion of the runway is paved. The pavement in this area was replaced in 2019 and is in good condition. The runway is equipped with retro-reflective edge markers in fair condition. The paved portion of the runway is marked with visual runway markings, including the threshold bar, runway designator, runway centerline, and runway edge markings. Without runway edge lights, the runway is only available during VFR conditions, which limits the operations on this runway, especially during the dark winter months.



Figure 6: Runway 20L

02L/20R Runway Safety Areas

RSAs 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. The RSA is required to be graded to minimum safe grades, be load bearing under dry conditions, and free of non-essential and non-frangible objects.

The RSA for Runway 02L/20R is 150 feet wide and starts 240 feet prior to the thresholds of Runway 02L and 20R. The standard length for both the RSA prior to the threshold of a B-II runway is 300 feet. The airport property line is located approximately 200 feet prior to the 02L threshold, and the RSA extends onto the neighboring property owned by Eklutna, Inc. (Figure 7). The Avigation and Hazard easement for the Runway Protection Zone (RPZ) permits the passage of aircraft above the property and gives the airport the right to remove all objects protruding into the airspace together with the right to prohibit future obstructions or interference in the airspace. A non-frangible 5-foot perimeter fence is installed along the property line. Both airport users and M&O have indicated that they have safety concerns with the location of the fence in the RSA (Koehler, 2020).



Figure 7: Runway 02L Runway Safety Area

02R/20L RSA

The RSA for Runway 02R/20L is 120 feet wide and extends 240 feet onto Taxiway A beyond both runway ends.

Pilots expressed concerns with the maintenance of the RSAs for both runways. The main concern is that the RSAs and other grass infield areas contain alders and other small trees that are cut using “brushing” techniques. This method leaves 2-3 inches of the stems from the small trees protruding from the ground, which have the potential to puncture the tires of aircraft that deviate from the runway. Users requested that DOT&PF remove the brush from the RSAs and infield areas, reseed the areas with grass, and regularly mow and maintain the grass to provide a smooth, level area for aircraft to access in case of emergency. Glider operators, in particular, requested that the RSAs and infield areas be cleared of all unnecessary equipment and be better maintained in case glider pilots need to unexpectedly land in the infields. 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.

Runway Protection Zones

The RPZs for Runways 02L/20R and 02R/20L are outlined in Table 2. The RPZs for both runways have an inner width of 250 feet, an outer width of 450 feet, and a length of 1,000 feet. These RPZ dimensions are suitable for runways with an Aircraft Approach Category (AAC) of A and B and a maximum take-off weight (MTOW) of less than 12,000 pounds (utility).

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. FAA prefers that airport sponsors secure that right by fee simple ownership of the land inside the RPZ. When that is not possible, an aviation easement is acceptable.

The RPZ for the approach to Runway 02L is located on property owned by Eklutna, Inc. The DOT&PF has secured an Avigation and Hazard easement from Eklutna, Inc. to perform air hazard mitigation within the RPZ. Under the terms of the easement, trees can be cleared from the RPZ to remove obstructions.

A 2.15-acre portion of the RPZ for the approach to Runway 20R is located on property owned by the Izaak Walton Recreation League. The DOT&PF has secured an Avigation and Hazard easement from this private party.

The RPZs for Runway 02R/20L fall in their entirety on airport property.

Runway Object Free Areas and Obstacle Free Zones

The OFA and OFZ for Runways 02L/20R and 02R/20L are outlined in Table 2. The OFA is an area on the ground, centered on the runway centerline. This area must remain free of all objects that are non-essential for air navigation and ground movement of aircraft. The OFZ is the volume of airspace located from the ground to 150 feet above ground level (AGL), within the dimension shown in Table 2. This area must remain free of non-essential objects, taxiing and parked aircraft, and other penetrations; except for frangible navigation aids, which have locations fixed by function.

The OFAs and OFZs for Runways 02L/20R and 02R/20L appear to be clear of non-frangible objects, with the exception of the perimeter fence south of Runway 02L/20R. The fence is non-frangible, approximately 5 feet tall and is located on the property line approximately 200 feet from the 02L threshold. Also, the presence of inline Taxiway A prior to the thresholds of Runway 02R/20L also makes it possible that taxiing aircraft could penetrate the Runway 02R/20L OFA and OFZ.

2.2.3.2 Taxiways

Taxiway A

Parallel Taxiway A is located to the north and south and directly in line with Runway 02R/20L. A 1,802-foot-long section in the middle of Taxiway A was converted to Runway 02R/20L in 2005 (Figure 8). The northern 745-foot portion of the taxiway is paved. This paved section is equipped with MITL in fair and operable condition. A 240-foot segment of the paved section constitutes the RSA for Runway 20L, which was repaved in 2019 and is in good condition. At the time of the 2021 DOT&PF pavement inspection, the remainder of Taxiway A pavement (not within the Runway 20L RSA) was assigned a PCI of 27, indicating that it needs to be replaced. However, because the taxiway is in line with Runway 02L/20R, it is not eligible for improvement using FAA funds and was not rehabilitated as part of the 2019 project.

The south 1,360 feet of Taxiway A is in line with the approach to Runway 02R. This segment of the taxiway is surfaced with gravel and is in fair condition. The gravel taxiway area is delineated with edge marker cones.

During the inspection, it was noted that pilots approaching 02R regularly landed on Taxiway A prior to the threshold. The inline gravel taxiway creates a confusing sight picture for landing aircraft where the threshold and available landing area are not sufficiently defined on approach.

As a result, aircraft landing on the taxiway presents an unsafe condition to both landing and taxiing aircraft and reduces available safety area and obstacle separation for aircraft on approach to Runway 02R.

Also, the separation between Runway 02L/20R and Taxiway A does not meet the required separation distance between the runway and parallel taxiway. The runway and taxiway are 200 feet apart and FAA requirement for separation is 240 feet (FAA, 2014).



Figure 8: Taxiway A and Runway 20L

Taxiway B

Taxiway B is a full-length parallel taxiway that was repaved in 2019. The taxiway pavement and markings are in good condition. The West and Transient Aprons abut Taxiway B for its full length. MITL is installed on the east side of Taxiway B.

Connecting Taxiways

Taxiways C, D, E, and G connect the parallel taxiways to Runway 02L/20R. The taxiway dimensions are summarized in Table 3. The section of these taxiways located within the Runway 02L/20R RSA was rehabilitated when the runway was repaved in 2013. The remainder of the taxiways were repaved during the 2019 improvements. These taxiways have MITL and hold signs installed at all hold line locations. Taxiway E connects gravel Runway 02R/20L to Runway 02L/20R and is gravel. This taxiway is equipped with retroreflective edge markers.

Airport users expressed a need for a new connecting taxiway from Taxiway B to Runway 02L/20R, approximately halfway between existing connecting Taxiways E and G. A future taxiway, Taxiway F, is shown on the 2016 Ultimate ALP in this location.

2.2.3.4 Aprons and Aircraft Parking

Birchwood Airport has three primary aprons for based aircraft: the Northeast, Southeast, and the West Aprons. A Transient Apron also provides short-term tie-downs available to transient pilots. Apron sizes and the public tie-down spaces that are available on each are summarized in Table 3.

Table 3: Public Use Aprons and Tie-Down Spaces

	Size (SF)	Total Tie-Downs Available
Transient	31,640	7
Southeast Apron	192,075	39
Northeast Apron	390,080	80
West Apron	151,248	-

The Northeast Apron measures 424 feet by 920 feet and provides eighty 25-foot by 20-foot tie-downs for lease. A second set of wing tip anchors are installed at each tie-down space to accommodate larger aircraft. Taxilane access to hangar leases is provided north and east from the apron. The apron was rehabilitated and repaved in 2019 and the pavement is in good condition.

The Southeast Apron varies in width between 150 and 233 feet over its 1,000-foot length and provides thirty-nine 25-foot by 20-foot tie-downs for lease (Figure 9). The apron is primarily used by tenants with aircraft using “tundra tires” and skis that rely on Runway 02R/20L for their operations. The apron was rehabilitated and repaved in 2019 and the pavement is in good condition. Both the Northeast and Southeast Aprons have floodlights installed on light poles along the edge of the apron to illuminate the tie-down areas.



Figure 9: Southeast Apron

The paved portion of the West Apron measures 48 feet by 3,151 feet and consists of the area between Taxiway B and lease parcels on the west side of the airport. This apron is not used for aircraft parking. The southern 1,400-foot portion of the apron is surfaced with gravel in fair condition. The paved portion of the apron was reconstructed and paved in 2019, and the pavement is in good condition. Airport users have expressed the desire to pave the gravel portion of this apron to reduce foreign object debris on the adjacent taxiways.

The Transient Apron is located mid-field on the west side of Runway 02L/20R, with direct access to the pilots’ lounge/flight planning station. A pay box for tie-down fees is located in the pilots’ lounge. The collection of fees is based on the honor system. The apron measures 140 feet by 226

feet. Seven 25-foot by 20-foot tie-downs are provided for transient pilots. The apron was rehabilitated and repaved in 2019 and the pavement is in good condition.

All aprons currently serve A-I (utility) aircraft and are not designed to B-II aircraft standards. Airport users have expressed the need for additional large aircraft parking spaces to accommodate a limited number of glider and B-II aircraft. Users also expressed the desire for airport electrical outlets (“head bolt heaters”) at GA tie-downs.

2.2.3.5 Lights, Markings, and Signage

Visual and Approach Aids

Runway 02L/20R has medium-intensity edge lights (MIRL) that are operational and in fair condition. The existing light fixtures were installed in 2005, are of incandescent bulb type, and extend 30 inches above the ground. During the inspection, DOT&PF M&O noted that the constant current regulator is overloaded and expressed their preference to switch to Light Emitting Diode (LED) style fixtures. The existing L-282 constant current regulators are single-phase. There are two regulators in use and one spare. The regulator labeled “Spare” was energized during the field investigation and the regulator labeled “Runway” was not.

The electrical equipment building is located directly north of the north end of the West Apron. The space between the building and the nearest lease lot is limited. Access to the building is often blocked by the tenant’s regular use of their lease lot.

Runway 20R is equipped with visual approach slope indicator (VASI), owned and maintained by DOT&PF. There are no approach aids on Runway 02L and some users have expressed a desire to install a new VASI or precision approach path indicator (PAPI) on that end of the runway.

There are no lighting or approach aids located on Runway 02R/20L.

Birchwood Airport’s rotating beacon is installed on a 51-foot mast that was erected in 1977 (Figure 10). The overall height of the mast and beacon is approximately 62 feet. The mast and beacon are in good operational condition, but should be maintained or replaced as needed in the future. The beacon allows pilots to identify Birchwood Airport during hours outside civil twilight by the green and white light emitting from the beacon. The beacon is located approximately 1,300 feet down Runway 20R and approximately 716 feet to the west between Birchwood Spur Road and the rifle range.



Figure 10: Rotating Beacon

A lighted wind cone with segmented circle markers is installed in the infield area between Runway 02L/20R and Taxiway B and between connecting Taxiways C and D (Figure 11). The wind cone was replaced in 2005 and is operational and in fair condition. The segmented circle markers are in good condition and were replaced during the 2013 Runway 02L/20R rehabilitation project. The segmented circle includes traffic pattern indicators directing circling traffic to the northwest of the field.



Figure 11: Segmented Circle and Lighted Wind Cone

An unlit, unofficial, supplemental wind cone is installed east of Runway 02R/20L. The wind cone is erected and maintained by local pilots and is not an official airport visual aid. The wind cone is installed on a moveable foundation and is in poor condition (Figure 12).



Figure 12: Supplemental Wind Cone

Signage

Mandatory and location signs are installed at Runway 02L/20R hold positions. The signs were installed in 2005 and are operational and in good condition.

Markings

Pavement markings on all runways, taxiways, and aprons are standard, with the exception of Runway 02L/20R, which is a visual runway but is marked as a non-precision approach runway. Runway markings on Runway 02L/20R were applied during reconstruction in 2013 and are worn and faded. Taxiway markings on the old portions of Taxiway A pavement are also worn and faded. Markings on other taxiways and aprons that were replaced after the pavement rehabilitation in 2019 and are in good condition.

2.2.4 Airspace

The airspace at Birchwood Airport is classified as Class E controlled airspace, shown in Figure 13 (FAA, 2020b), with a floor of 1,200 feet AGL and a ceiling of 18,000 feet AGL. Class G uncontrolled airspace is present below the Class E airspace from ground level to 1,200 feet. Class A controlled airspace is present above 18,000 feet. Birchwood Airport is located east of the controlled Class C and Class E Anchorage airspace and east of the Special Use Airspace Restricted Area R-2203B for Joint Base Elmendorf-Richardson (JBER) Air Force operations. To the north of Birchwood Airport is the Class E controlled airspace for the Big Lake Airport, Wasilla Municipal

Airport, and Palmer Municipal Airport. The Class E airspace at these neighboring airports has a floor of 700 feet.



Figure 13: Birchwood Airspace Sectional Chart

Pilots operating under VFR in Class E airspace do not need to communicate with air traffic control and are required to have a minimum of 3 miles of visibility and must stay at least 500 feet below, 2,000 feet laterally, or 1,000 feet above cloud formations. If weather conditions prohibit VFR operations, pilots that are instrument equipped and rated may still operate in the airspace under Instrument Flight Rules (IFR). IFR pilots must file an IFR flight plan and be in communication with Air Traffic Control.

The Special Use Airspace Restricted Area R-2203B for JBER is in close proximity to the south end of Birchwood Airport. The airspace prevents extended approaches to Runway 02L. Pilots interviewed expressed the desire to adjust the limits of the restricted area to provide more available airspace south of the airport for approaches.

2.2.4.1 Air Traffic Patterns

Air traffic at the airport is not controlled by Air Traffic Control. Instead, pilots voluntarily report their position on a common traffic advisory frequency of 123.00 megahertz (FAA, 2020a). Fixed-wing aircraft use a rectangular pattern over the Knik Arm. The regular pattern utilizes right traffic

(aircraft turns to the right) for Runways 20L and 20R; left traffic (aircraft turns to the left) for Runways 02L and 02R (Figure 14). Ultralight aircraft use a rectangular pattern that turns to the southeast (toward the mountains) from all runways (FAA, 2020a).

The normal pattern altitude for fixed-wing aircraft is 800 to 1,000 feet above the airport elevation. Helicopter traffic is less structured than fixed-wing traffic patterns and tends to fly direct to and from landing areas in this uncontrolled environment. The FAA Alaska Chart Supplement directs helicopters to avoid the GA and ultralight traffic pattern at the airport, and helicopters generally fly straight in from the east. No changes to helicopter traffic are proposed.

As shown in Figure 14, the training grounds for U.S. Joint Base Elmendorf Fort Richardson (JBER) are located south of Birchwood Airport. The airspace above the training grounds is a restricted area, R-2203B, to exclude all aircraft that are not participating in the military exercises. The restriction extends from ground level to 11,000 feet altitude mean sea level (FAA, 2020b). The restricted area is located 1.7 miles to the south of the airport, with the closest point approximately 1.5 miles measured radially from the Runway 02L threshold. The restriction is in effect between 0500 and 2400, Mondays through Fridays, and pilots can verify if the restricted area is in use by the military by contacting Anchorage Approach Control. Most pilots choose to avoid restricted airspace.

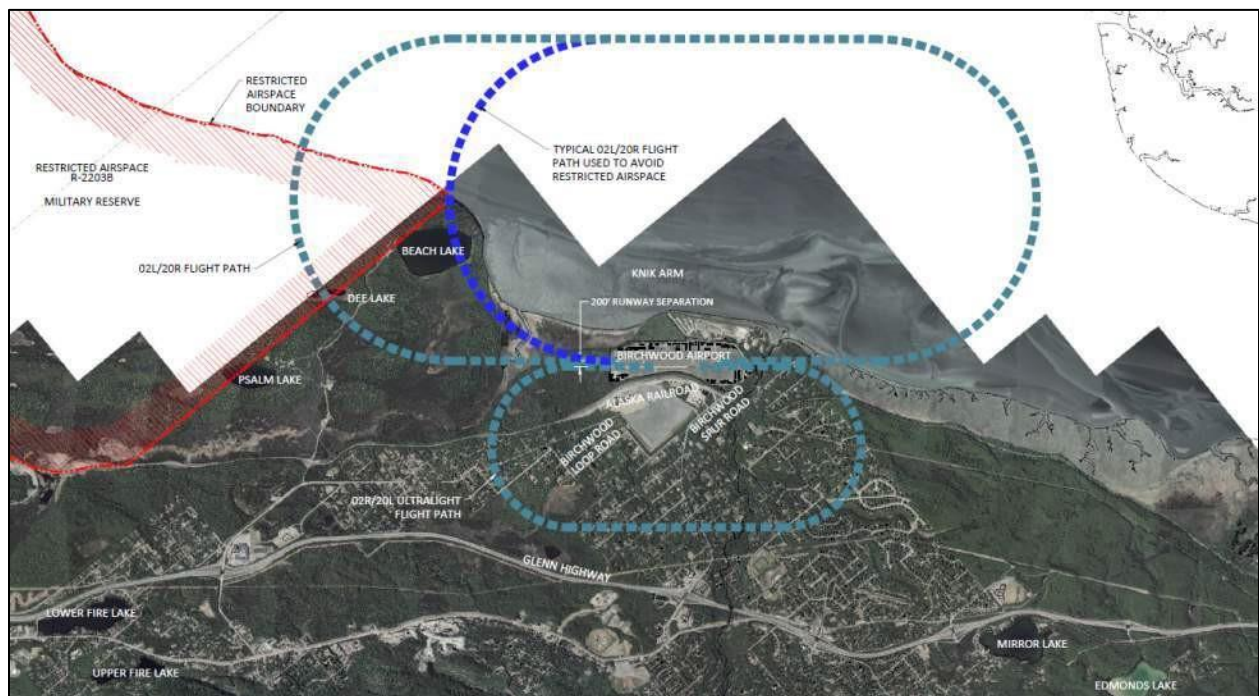


Figure 14: Traffic Patterns for Birchwood Airport

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

- Pilots occasionally operate at the airport without broadcasting their intentions on the radio.
- Simultaneous operations have been witnessed on both runways.

- The similar designation between Runway 02L/20R and 02R/20L is confusing to some pilots, leading to inaccuracies when broadcasting their intentions for take-off or landing.

2.2.4.2 Approach and Departure Procedures

Birchwood Airport has no published instrument approach procedures. However, during interviews and public comment, a small number of users expressed the desire for DOT&PF to investigate the feasibility of establishing a published instrument approach to Runway 02L/20R.

2.2.4.3 Airspace: Part 77 Surfaces and Obstructions

The airspace for an airport is regulated by the FAA with regard to airport airspace (14 Part 77, 2010), threshold siting (FAA, 2014) (FAA, 2020c), and terminal instrument procedures (FAA, 2018). 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). All runways at the Birchwood Airport are currently visual utility runways. Table 4 summarizes existing airspace surfaces for the airport.

Table 4: Existing Part 77 and Threshold Siting Surfaces

	Runway 02L (Visual, Utility ⁸)	Runway 20R (Visual, Utility ⁸)	Runway 02R (Visual, Utility ⁸)	Runway 20L (Visual, Utility ⁸)
Primary Surface	250' wide 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	250' wide centered on runway to 200' off runway end
Approach Surface	5,000' at 20:1 from Primary Surface, width: 250'-1,250'	5,000' at 20:1 from Primary Surface, width: 250'-1,250'	5,000' at 20:1 from Primary Surface, width: 250'-1,250'	5,000' at 20:1 from Primary Surface, width: 250'-1,250'
Transitional Surface	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	5,000' arc, 150' above airport elevation	5,000' arc, 150' above airport elevation	5,000' arc, 150' above airport elevation	5,000' arc, 150' above airport elevation
Conical Surface	4,000' at 20:1 outward from horizontal	4,000' at 20:1 outward from horizontal	4,000' at 20:1 outward from horizontal	4,000' at 20:1 outward from horizontal
Departure Surface	N/A ⁹	N/A ⁹	N/A ⁹	N/A ⁹

⁸ Utility runways are intended for use by aircraft less than 12,500 pounds gross weight

⁹ Runway departure threshold siting applies to runways used for instrument operations. Birchwood Airport has no published procedures.

Airspace obstructions identified during the 2020 aeronautical survey are noted below:

Runway 02L/20R

Trees penetrate the 20:1 approach surface of Runway 02L by as much as 20 feet between approximately 1,197 and 1,532 feet prior to the threshold. Similarly, trees penetrate the 7:1 transitional surface on either side of the Runway 02L approach. The most severe penetration is by 50.3 feet, which occurs 487 feet prior to the threshold and 391 feet south of the centerline.

Approximately 10 trees also penetrate the 20:1 approach surface of Runway 20R. These penetrations occur between 984 feet and 1,608 feet prior to the threshold, with airspace obstructions varying between 0.5 and 13 feet. There is one tree located 956 feet prior to the threshold and 230 north of the centerline that penetrates the transitional surface by approximately 4 feet. There are several trees located south of the 20R approach surface in this area that penetrate the transitional surface by as much as 10 feet.

Trees located in the green belt between the airport property boundary and the railroad tracks, located on ARRC property south of the airport, penetrate the Runway 02L/20R transitional surface by as much as 36 feet. There are no penetrations to the transitional surface north of the runway.

Runway 02R/20L

Similar obstructions are present in the 20:1 approach surface of gravel Runway 02R and transitional surface south of the runway, as noted above for Runway 02L. The penetrations to the approach are caused by trees and vary between 20.6 feet and 1.0 feet of obstruction height. The obstructions within the transitional surface south of the runway are caused by trees and fencing located on the airport property boundary and adjacent property. The trees in this area penetrate the transitional surface of the gravel strip by as much as 65 feet. Also, a 15-foot-tall vehicle traveling on the Southeast Apron Road penetrates the primary and transitional surfaces of Runway 02R/20L by as much as 14.4 feet.

There are no penetrations to the transitional surface north of the runway or to the Runway 20L approach surface.

2.2.4.4 Navigation Aids

There are no navigational aids located at Birchwood Airport. If required, pilots rely on vectoring from nearby navigational aids. These include the very high-frequency omnidirectional ranges (VORs) at Big Lake and AIA and the Campbell Lake Non-Directional Beacon (NDB).

The airport is equipped with a Type III-B automated weather observation system (AWOS) located on the west side of the airfield, adjacent to the transient apron (Figure 15). It provides certified weather reporting for the airport. The AWOS is owned by FAA and maintained by the National Weather Service. The AWOS is reporting data and is in good condition.

The AWOS is located in very close proximity to the Transient Apron and CAP lease lot and presents a possible obstruction to taxiing aircraft. The AWOS is also located within 500 feet of nearby hangars, which does not meet FAA siting criteria for wind sensors (FAA, 2017a). These siting criteria include restrictions on obstructions such as vegetation and buildings that should be at least 15 feet lower than the wind sensor within a 500-foot radius of the sensor.

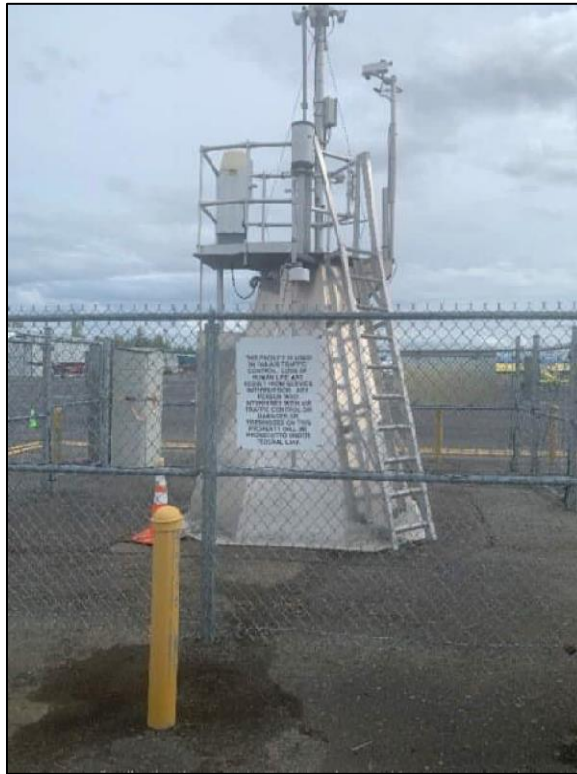


Figure 15: Automated Weather Observation System

2.2.5 Landside

2.2.5.1 Lease Lots and Buildings

The tenants at Birchwood Airport include a mixture of private airport users with individual tie-down or hangar leases; hangar associations; and aeronautical businesses such as aircraft parts and maintenance and commercial operator maintenance and storage facilities.

The Pilots Lounge is owned by DOT&PF and located on the edge of the Transient Apron. The DOT&PF does not maintain the building, and day-to-day cleaning and maintenance is performed by volunteers from the local Airport Association. The building construction was originally funded by a legislative grant in the early 1980s. The septic system recently failed and was reconstructed by DOT&PF in 2021.

The Birchwood Airport includes 67 lease lots. The FAA and DOT&PF occupy five of these lease lots for airport services. As of July 2022, all lease lots were occupied. Each lease lot has access to telephone, electric power, and natural gas.

As of July 2020, 119 tie-downs were available for use at the airport, all of which were occupied. The DOT&PF permits tie-downs but does not track subleasing of tie-downs. Currently, the tie-downs do not include electrical outlets, though pilots requested this amenity in interviews.

Vehicle parking at the airport relies on lease lots, aprons, and tie-downs due to the absence of designated public parking areas.

2.2.5.2 Terminal, Fixed Based Operations, and Fuel Facilities

Birchwood Airport has one fueling station. C2 Aviation, located on Lot 9, Block 500, provides a self-serve fueling station for 100LL. Jet fuel is not available. No inadequacies with the existing fuel service were identified during the site inspection.

2.2.5.3 Surface Access and Parking

Birchwood Airport is accessed from Birchwood Spur Road and Southeast Apron Road. Birchwood Spur Road was paved in 1977 and provides access to the west side of the airport. This road also provides access to adjacent residential areas, Birchwood Recreation and Shooting Park, an inert waste mono-fill, and the Ted R. Smith Tactical Training Facility for Law Enforcement. The road is maintained by DOT&PF highway maintenance crews. The road pavement is in poor condition and in need of resurfacing. However, due to the shared use, rehabilitation of the road is not eligible for FAA AIP grant funding.

The Southeast Apron Road was paved in 1990 and provides access to tie-downs and hangars on both the Northeast and Southeast Aprons.

Users expressed the need for a designated vehicle parking area with portable restroom facilities at the Northeast and Southeast Aprons. Because the Southeast Apron is used by ski-equipped aircraft and purposely not plowed in the winter, cars and trucks traveling or parking on the apron create ruts in tie-down areas and taxilanes. Pilots currently park their vehicles along the apron perimeter.

Internal vehicle circulation was a noted concern from airport users. Vehicles routinely travel through the CAP lease lot and Transient Apron to access aircraft, businesses, and hangars on the west side of the airport. Also, vehicles routinely travel on the taxiways and cross the runways or RSAs to travel from one side of the airport to the other. This creates a safety issue within the movement area. Users have expressed a desire to establish an access road around the south end of the airport to mitigate vehicle movement across the runways.

2.2.5.4 Utilities

Electrical service to Birchwood Airport is provided by Matanuska Electric Association, with the main feed being supplied overhead from a distribution pole east of the airport, adjacent to the ARRC right-of-way (ROW). The overhead electrical line transitions underground once it crosses ARRC ROW and reaches airport property. The primary underground line extends around the perimeter of the airport, creating a loop feed. Junction boxes are located at multiple lease lot lines, with service extended to the individual lease lots from the junction boxes.

Telecommunication service to the airport is provided by Matanuska Telephone Association. There are two main feeds that service the airport: one feed consists of copper and fiber optic cable (FO) and extends underground along Birchwood Spur Road; the second extends from north of the airport connecting at a manhole/cabinet just west of the ARRC ROW. From the manhole, FO and copper extend around the north end of the airport, with FO vaults and pedestals placed at multiple lease lot lines to provide service to the lots. The FO extends around the south end of the airport property, terminating near the southeast corner. The copper facilities extend through the lease lots along the west side before terminating and then extend from the manhole/cabinet site along the east side to the southeast end, where it terminates.

Natural Gas service is provided by the ENSTAR Natural Gas Company, with the main feed extending along Birchwood Spur Road in the form of a 4-inch diameter main. After crossing ARRC ROW, the 4-inch main transitions to a 2-inch diameter line, which loops around the airport and provides service to lease lots.

Commercial water and sewer are not available at the airport. Onsite wells and septic facilities are utilized for water and wastewater disposal and are permitted through the MOA Development Services Division.

2.2.5.5 Fencing and Security

A 7-foot perimeter fence is installed around the entire airfield. The fence is overgrown with vegetation and in need of maintenance and repair.

There are eight general-use gates (1, 2, 12, 18, 19, A, B, C) and 14 personal-use gates (3-11 and 13-17) located in the perimeter fence line. Airport access roads are equipped with access gates to separate landside transportation from the airfield. However, these gates are not currently used to restrict access to the field. Most gates are in poor condition and left in the open position. Users reported an increase in non-airport-related traffic and theft at the airport in recent years. However, airport users generally preferred that the gates remain open and are not in favor of locked gates with an access control system.

Moose and other wildlife are occasionally seen inside the airport fence. Some airport users interviewed suggested that one-way (outgoing only) moose gates be installed along the fence lines in the heavily wooded areas so that moose trapped inside the fence can find their own way out.

2.2.5.6 Solid Waste Recycling Options

Municipal solid waste collection is not available at the airport and leaseholders make their own arrangements for the collection and disposal of solid waste and hazardous materials. There are no reports of any issues with the disposal of solid waste and hazardous materials at the airport.

2.2.5.7 Maintenance

Maintenance at the Birchwood Airport is provided by the State of Alaska. During the summer, there is no dedicated airport maintenance personnel onsite. One DOT&PF employee is assigned to provide full-time airport maintenance in the winter. The DOT&PF maintenance personnel plows and maintains the paved surfaces and unpaved safety areas and performs routine maintenance on the airport property.

The DOT&PF maintenance building and SREB are located across the Birchwood Spur Road, to the north of the Northeast Apron. This facility is used to store and maintain state maintenance and snow removal equipment. The facility is shared with the Chugiak Fire Department for storage of equipment used to support airport rescue and firefighting activities. A sand storage building is located to the south of the maintenance building.

Maintenance vehicles include one front-end loader with a plow attachment, one snow blower, and one grader (Koehler, 2020). The DOT&PF intends to acquire a loader and a snow blower using AIP funding.

2.3 Environmental Resources

The following overview includes an inventory of existing environmental resources in the vicinity of the Birchwood Airport that can be used in the planning stages for airport projects. Research of existing online databases and readily available information was conducted on September 15, 2020 (unless otherwise noted) to identify environmental resource categories that are present on, or in the vicinity of the airport. Impacts to environmental resources and the environment will need to be considered when using federal funding to develop the airport. FAA Order 1050.1F outlines environmental review requirements under the FAA’s National Environmental Policy Act (NEPA) guidance.

For the purpose of this master planning effort, reference to the Birchwood Airport includes the area within the airport property boundary. Reference to “the vicinity” is defined as the area within the airport property boundary as well as the Birchwood Community Council boundary (Figure 16). A project study area will be defined to a more specific geographic location when a proposed project for NEPA analysis is defined along with proposed action items that can be evaluated for impacts on environmental, social, economic, and technical factors.

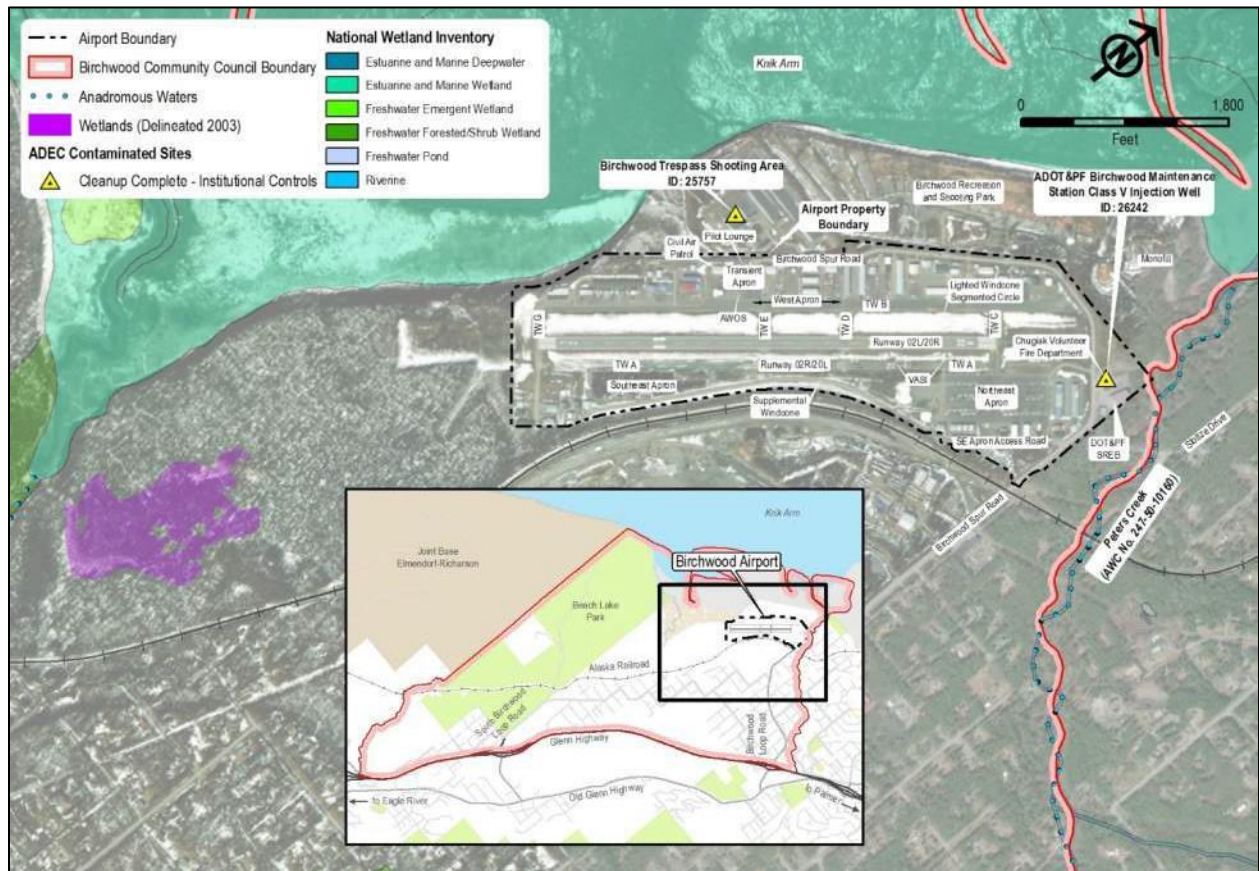


Figure 16: Environmental Resource Review Area

2.3.1 Historic Properties, Archeological, and Culture Resources

As part of the research associated with the 2017 Categorical Exclusion (CE) for the proposed Birchwood Airport Apron and Taxiway Reconstruction project, DOT&PF conducted a search of

the Alaska Heritage Resource Survey files on July 11, 2017, to identify properties of historical significance within the airport property boundary. At that time, there were no historic or cultural resources listed (or eligible for listing) on the National Register of Historic Places (NRHP) located within the airport property boundary. As part of the NEPA process future evaluation of cultural and historic resources will be required per Section 106 of the National Historic Preservation Act.

2.3.2 Department of Transportation Act Section 4(f) and 6(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 historical sites eligible for the 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.

On September 15, 2020, a review of the following resources did not identify properties protected under Section 4(f), as defined by FAA Order 1050.1F, located in the vicinity of the airport:

- U.S. Fish and Wildlife Service (USFWS) website
- U.S. National Park Service (NPS) website
- Alaska Department of Fish and Game (ADF&G) list of state game refuges, sanctuaries, critical habitat areas, and special areas
- Alaska Department of Natural Resources (ADNR) Division of Parks and Recreation website
- MOA Department of Parks and Recreation website
- U.S. Forest Service (USFS) website

2.3.3 Biological Resources

Biological resources are valued for their intrinsic, aesthetic, economic, and recreational qualities and include fish, wildlife, plants, and their respective habitats. On September 15, 2020, the resource categories in the following section were reviewed for their presence on, or within the vicinity of the airport.

2.3.3.1 Anadromous Fish Streams and Essential Fish Habitat

According to the ADF&G online Anadromous Waters Catalog, Peters Creek (AWC #247-50-10160) is an anadromous water body located in the vicinity of the Birchwood Airport. Peters Creek contains rearing Coho salmon. Pink salmon and Chinook salmon are also present. Because Peters Creek is a documented anadromous waterbody, it is also classified as Essential Fish Habitat (EFH).

Review of the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) EFH online mapper, Knik Arm is also classified as EFH for all life history stages of Chinook, Pink, Sockeye, Chum, and Coho salmon.

2.3.3.2 Migratory Birds and Eagles' Nests

The Migratory Bird Treaty Act of 1918, as amended (16 USC 703-711), as well as the Bald and Golden Eagle Protection Acts (16 USC 668-668d) and Executive Order 13186, requires all federal agencies to avoid, to the extent possible, the "take" of migratory birds and bald and golden eagle, eggs, feathers, or nests.

Review of the USFWS Information for Planning and Consultation online portal identified a diversity of migratory bird species in the vicinity of the airport that may travel through the area. Vegetation clearing associated with the project is expected to follow USFWS recommended time periods for avoiding clearing in Southcentral Alaska (May 1 – July 15), except as allowed by state, federal, and local laws. Suitable eagle nesting habitat exists in the general project vicinity.

2.3.3.3 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). The USFWS Endangered, Threatened, Proposed, Candidate, and Delisted Species in Alaska list (2013) did not identify any candidate species in the vicinity of the airport.

2.3.3.4 National Marine Sanctuaries

No national marine sanctuaries are present in the waters surrounding the State of Alaska based on a review of the NOAA National Marine Sanctuaries online database.

2.3.3.5 State Refuges, National Wildlife Refuges, Critical Habitat Areas and Sanctuaries

Review of the ADF&G online listing of state of Alaska refuges, critical habitat areas, and sanctuaries indicated none of the resources are located in the vicinity of the airport.

According to the USFWS online initial project scoping tool there are no national wildlife refuges are present within the vicinity of the airport.

2.3.3.6 Wetlands and Other Waters of the U.S.

In 2003, a wetland delineation and preliminary jurisdictional determination were completed for the Birchwood Airport Master Plan Environmental Assessment (DOT&PF Project 54741). Using aerial imagery and field observations, seasonally saturated forested and scrub/shrub emergent wetlands were identified on the southwestern edge of the airport property.

2.3.3.7 Wilderness Areas

No wilderness areas are located in the vicinity of the airport based on review of Wilderness Connect (via wilderness.net). The nearest designated wilderness area is the Kenai Wilderness Area, located approximately 40 air miles southwest of the airport. Wilderness Connect is a clearinghouse that was formed in 1996 and is provided by the federal interagency National Wilderness Steering Committee and Wilderness Policy Council. The clearinghouse compiles information from the Bureau of Land Management, USFWS, USFS, and NPS.

2.3.4 Air Quality

According to the Alaska Department of Environmental Conservation's (ADEC) Air Non-point Mobile Source website the Birchwood Airport is not in an air quality non-attainment or maintenance area for National Ambient Air Quality Standards.

2.3.5 Floodplain and Regulatory Floodway

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps #020050070D and #02000050086D indicate that FEMA-mapped floodplains are located on the fringe of airport property but are not located near current developed areas of the airport footprint.

2.3.6 Farmland

Farmlands are defined as those agricultural areas considered important and protected by federal, state, and local regulations. Important farmlands include all pasturelands, croplands, and forests considered to be prime, unique, or of statewide or local importance. Currently there are no designated prime or unique farmlands, or farmlands of statewide importance in Alaska. However, the Fairbanks Soil and Water Conservation District and the Matanuska-Susitna Borough (MSB) have adopted criteria for Farmlands of Local Importance for lands within their jurisdictional boundaries. The Birchwood Airport is located within the MOA and is therefore outside the areas that have adopted criteria for Farmlands of Local Importance.

2.3.7 State Parks, National Parks, National Forests, and Wild and Scenic Rivers

There are no national parks, monuments, preserves, national forests, or wild and scenic rivers located in the vicinity of the airport according to NPS and USFS online databases.

Review of ADNR’s Division of Parks and Outdoor Recreation website indicates that there are no state parks or recreation areas located in the vicinity of the airport.

2.3.8 Hazardous Waste

ADEC’s Contaminated Sites Mapper shows one active contaminated site in the vicinity of the airport: The Birchwood Trespass Shooting Area. An additional site, the DOT&PF Birchwood Maintenance Station Class V Injection Well, is classified as “cleanup complete: institutional controls (IC)”.

2.3.9 Navigable Waters

Navigable waters under the U.S. Army Corps of Engineers’ (USACE) jurisdiction are not located within, or in close proximity, to the airport (USACE, 2020).

2.3.10 Noise

Per the FAA Environmental Desk Reference for Airport Actions (2020), 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. Each project at the airport will be assessed to determine if a noise analysis is required.

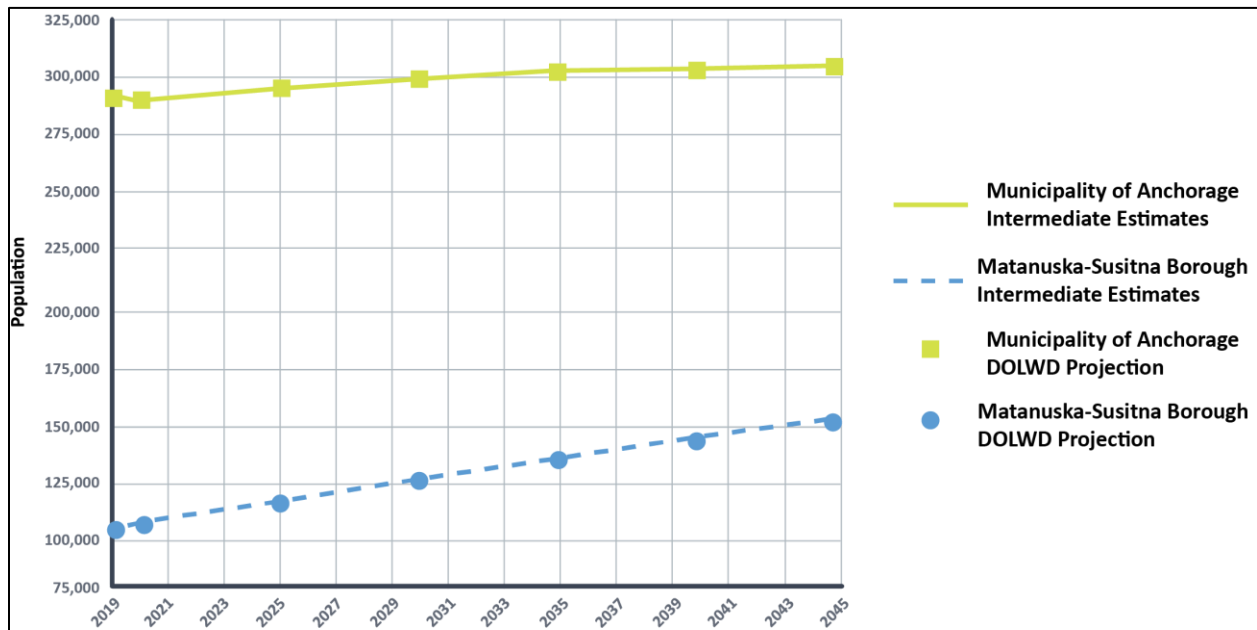
2.4 Socioeconomic Evaluation

Northern Economics completed a Socioeconomic Evaluation in November 2020 to provide a socioeconomic profile of the study area, which includes the MSB and the MOA, with emphasis on the Chugiak/Birchwood/Eagle River area, when applicable. The socioeconomic profile describes

current conditions and forecasts for the study area’s population, economy, and key industries, such as aviation, tourism, and oil and gas production.

2.4.1 Population Profile of the Birchwood Area

Users of Birchwood Airport are primarily residents of the MOA and MSB. The Alaska Department of Labor and Workforce Development (DOLWD) constructs population projections in five-year increments for each borough in the State of Alaska. The 2019 estimated population and projections for 2020–2045 are shown in Graph 1, with lines to represent linear interpolation between the projections. In total, the residents of the MOA and MSB make up 54% of the state’s population of 731,000.



Graph 1: Population Projects, 2020 - 2045

Source: DOWLD (2020a) and analysis by Northern Economics

In 2019, the MOA had 291,845 residents. That number was expected to decrease in 2020 but increase in each following year up to a high of 305,393 in 2045. This represents a growth of approximately 5% from 2019 to 2045 or an increase of 13,548 people. The rate of growth is expected to slow over time and then plateau.

The rate of growth is much higher in the MSB than in the MOA, but the MSB has fewer residents (106,438 residents in 2019). The population of the MSB is expected to grow by nearly 44% from 2019 to 2045, an increase of 46,648 residents. In fact, the MSB has the highest projected rate of growth of any borough or census area in Alaska. Much of the growth has historically been driven by migration from the MOA to the MSB. The MSB shows resiliency in employment and population with the ability to defy statewide trends; however, recent analysis shows that the MSB’s rate of population growth and the rate of migration from the MOA to the MSB are both declining (Fried and Howell, 2020).

Since 2010, the total population of the MOA has not changed much, but Birchwood is one place within the MOA where the population has grown. The population of Birchwood has increased by

about 200 residents, or at a rate of about 0.5%, since 2010 (Fried and Howell, 2020). Eagle River has historically grown faster than Anchorage, but any changes are generally driven by activity at JBER. Many residents (both civilian and active-duty service members) work on base but live off base, contributing to the demand for goods, services, and residential property in the Eagle River area. The Eagle River area also has the highest percentage of veterans in the MOA because many JBER military and air force employees choose to retire in the area (Fried and Howell, 2020).

Recently, there has been relatively little growth at JBER, so it is uncertain whether the overall growth trend will continue for the Eagle River area (Fried and Howell, 2020). Eklutna has the greatest potential for growth based on land availability and would have potential to help absorb population growth in the MOA.

2.4.2 Economic Activity

2.4.2.1 Employment

In 2019, the MOA had a labor force of 146,948, which is 50.4% of the total population. From 2010 to 2019, the unemployment rate in the MOA ranged from a maximum of 6.6% in 2010 to a low of 5.0% in 2015 (Table 5). A statewide recession has already contributed to the loss of about 6,000 jobs in the MOA since 2015, but the recent pandemic and ensuing global economic conditions have caused the loss of an additional 11,000 jobs in the MOA, for a total loss of 17,000 since 2015 (Popp, 2020). Forecasts show that the recovery will likely take more than three years to achieve pre-recession employment levels, and in 2023, the MOA will still have 4,400 fewer jobs than it did at the end of 2015.

Table 5: Study Region Labor Force and Unemployment Rate

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<u>Labor Force</u>										
MOA	157,923	159,007	158,380	158,402	158,075	156,755	155,274	153,108	149,431	146,948
MSB	42,315	43,369	43,757	43,925	44,887	46,183	47,351	48,125	47,728	46,901
<u>Unemployment Rate (%)</u>										
MOA	6.6	5.9	5.4	5.2	5.2	5.0	5.5	5.8	5.4	5.1
MSB	9.4	9.2	8.7	8.3	8.1	7.7	8.2	8.2	7.4	6.9

The labor force of the MSB was 46,901 in 2019, which is 44.1% of the total population. The unemployment rate was higher in the MSB than in the MOA every year from 2010 to 2019, with a maximum of 9.4% in 2010. The data shows a downward trend, reaching a minimum unemployment rate of 6.9% in 2019, and unemployment in the MSB appears to be converging with the rate in the MOA. The unemployment rate of the MSB will also have seasonal fluctuations related to summer tourism that are not visible in the annual data presented in Table 5 (Popp, 2020).

2.4.2.2 Occupations

The DOLWD compiles data on workers in each of Alaska’s boroughs to provide insight into the most common occupations. The top five occupations in the combined MOA/MSB area in 2016 were retail salespersons (8,326 workers), cashiers (3,519), office and administrative support workers (3,401), registered nurses (3,310), and personal care aides (3,179) (DOLWD, 2020b). Most jobs in both the MSB and the Eagle River area 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.

2.4.3 Economic Trends

Two key industries of interest for the study area are the oil and gas industry and tourism, especially fly-out fishing. Table 6 shows the average employment by place of work for the MOA and MSB for North American Industry Classification System (NAICS) sectors related to the tourism industry, and the highlighted rows show specific sectors that are closely linked economically to tourism. In the MOA, there are nearly 3,300 workers in the air transportation industry and 337 workers specifically in scenic sightseeing. In the MSB, there are 162 workers in the air transportation sector, but the number of workers in the scenic and sightseeing sector is not reported.

The Eagle River area is a residential service hub and also a commuter base, which has unique implications for the local economy. For example, because commuters are away at work, restaurants in Eagle River have historically struggled due to the lack of lunch demand, which is important for a restaurant’s overall financial performance (Popp, 2020). The Chugiak/Birchwood/Eagle River area is widely regarded as a suburb or neighborhood of the Anchorage Bowl.

Table 6: Travel and Tourism Industry Employment by Place of Work

NAICS Code	NAICS Sector	Average Employment	
		MOA	MSB
480000	Transportation and Warehousing	10,496	856
481000	Air Transportation	3,293	162
483000	Water Transportation	321	*
484000	Truck Transportation	1,331	114
485000	Transit and Ground Passenger	566	319
486000	Pipeline	*	None
487000	Scenic and Sightseeing	337	*
488000	Support Activities	1,660	109
491000	Postal Service	*	33
492000	Couriers and Messengers	2,216	45
493000	Warehousing and Storage	408	*
900000	Leisure and Hospitality	17,661	3,061
710000	Arts, Entertainment, and Recreation	2,403	420
711000	Performing Arts	383	*
712000	Museums, Zoos, Parks, etc.	233	*
713000	Amusement, Gambling, Recreation	1,787	319
720000	Accommodation and Food Services	15,528	2,641
721000	Accommodation	3,546	632
722000	Food Services and Drinking Places	11,712	2,009

Note: An “*” indicates employment data is withheld to protect the confidentiality of businesses.

Source: DOWLD, 2020c

2.4.3.1 General Aviation

General aviation drives demand for Birchwood Airport but there are also a number of industries that are important to the leaseholders and users of the airport, as well as to residents and businesses in the study region. The following sections discuss GA demand as well as those industries on which stakeholders placed importance: tourism, manufacturing, industrial land development, oil and gas, and mining.

Birchwood Airport is viewed as a positive asset and is highly valued by the community. Businesses on and near the airport support the aviation community by providing basic goods and services like airplane parts manufacturing, maintenance, repairs, and fueling. Stakeholders feel that the airport is being used for the right purpose but that there are significant opportunities for improvement in management, leasing practices, land development, and revenue generation (Eklutna, Inc., 2020 and Rogers, 2020).

2.4.3.2 Tourism

Economic activity related to tourism is reflected in the leisure and hospitality industries, especially in accommodations and food services. However, there are few of these businesses in the immediate vicinity of the airport. The overall outlook for tourism in Alaska is positive despite the dip in visitors to the state that occurred due to health mandates and travel restrictions (Fried and Howell, 2020).

An owner of an overnight lodge in Birchwood was aware of some hunting guides using Birchwood Airport as a departure point for fly-out hunting trips (Rogers, 2020). Most of the bigger operators in this industry sector operate out of Lake Hood using floatplanes, which allow clients to reach remote lodges in scenic destinations. While amphibious floatplanes could land at Birchwood Airport as well as remote lakes, it is not clear if this is ideal for hunting guides or operators. It might be possible to expand tourism at Birchwood Airport to include flightseeing and more fly-out hunting and fishing trips, but it would rely on developing niche tourism opportunities (Popp, 2020).

2.4.3.3 Manufacturing and Industrial Land Development

Spenard Builders Supply currently operates a truss and window manufacturing facility on land leased from ARRC adjacent to the airport, which utilizes the railroad connection to transport large truss structures into Anchorage and the MSB. Some developers have looked at vacant land near the airport as potential areas for expansion to support other manufacturing businesses, but none were pursued. Attracting investment dollars could help to boost the local economy, but the cost of labor in Alaska is prohibitive, and the demand for products is often outside Alaska (Popp, 2020).

Another concern when considering manufacturing industries is the cost of energy for space heating and/or electricity. Birchwood Airport has a natural gas connection, which is a strong selling point for business development because natural gas is the least expensive energy source in the area (Popp, 2020). Boutique or niche manufacturing with in-state demand, especially to support GA purposes, is already present in Birchwood and is also the most likely to succeed in the future.

2.4.3.4 Oil and Gas

Most oil industry jobs are located on Alaska’s North Slope, but the workers live in other parts of Alaska or other states. For example, the MSB has no oil and gas production, but it is the third largest supplier of oil and gas workers behind Anchorage and the Kenai Peninsula (DOLWD, 2020d). This group of North Slope-commuting workers is equivalent to 6% of the MSB residents and collectively earned more in payroll than any other industry in 2018. Table 7 shows Alaska resident oil industry workers by their place of residence for the MOA and the MSB. In 2018, there were 3,218 oil industry workers living in the MOA and 1,789 workers living in the MSB. The table also shows that wages earned by workers totaled more than \$500 million in 2018.

Table 7: Direct Alaska Resident Oil Industry Jobs by Place of Residence

Area	Resident Workers	Total Wages to Residents (\$)
MOA	3,218	508,449,652
MSB	1,789	192,747,065
All Other	2,559	260,521,101

Source: DOWLD, 2020d

Birchwood Airport currently does not serve as a transportation hub to serve oil and gas operations in the region. There are oil and gas operations that are technically accessible from Birchwood Airport; however, it seems more likely that companies would use an airport that either is closer to the job site or has better intermodal connections (such as AIA). Many oil and gas producers also transport their own workers. Hilcorp, for example, owns 15 of the 16 platforms in Cook Inlet and has its own fleet of aircraft and facilities (Moriarty, 2020). Most other North Slope producers already have travel partnerships or agreements in place, so it is unlikely that operations would shift to Birchwood. There might be some opportunity to support North Slope operations by developing industrial properties near the railroad in Birchwood as staging or manufacturing areas for equipment; however, no such projects are currently in development (Popp, 2020). This opportunity would need to be further explored to determine the true feasibility.

2.4.3.5 Mining

Alaska is becoming nationally and internationally competitive in the mining industry, with several notable projects, including Donlin Gold, the Ambler Mining District, and the Pebble Mine receiving national media attention. This industry has a positive outlook, and growth should be expected in the future; however, it is uncertain how much of this employment would come from the MOA or MSB. The MSB provides a disproportionately large number of workers for remote camp jobs in Alaska, so it is possible that these workers could contribute to remote mining projects around the state (Fried and Howell, 2020).

2.5 Airport Financial Assessment

Analyzing operating costs and their driving factors provides an initial assessment of Birchwood Airport’s financial condition. The information in this section is compiled from the DOT&PF, other component reports of this Birchwood Airport Master Plan Update, and the financial statements and published aviation forecasts of comparable airports. Information from these sources is available on an annual basis and does not include shorter periods of time, which limits analysis of maintenance costs to an annual basis.

The information about Birchwood Airport includes only a portion of the income and expense data related to rural airport operations for DOT&PF. It does not reflect federal funds received for capital or maintenance grants; federal funds received from the Air Carrier Compliance program; the state’s share of capital and maintenance project grants; managerial expenses by Commissioner, Deputy Commissioner, Statewide Aviation staff; nor administrative costs incurred by Division of Administrative Services (Budget, Finance, IT, appeals functions), Statewide Aviation Leasing, ROW, Planning, Design and Engineering Services, and Construction.

Through fiscal year (FY) 2017, it does not reflect expenses for the rural airport facilities component building costs such as repairs, electricity and heating fuel, or other utilities for buildings, but it does include M&O costs such as personnel; utilities; and fuel for equipment, runway lights, and some buildings such as heated storage. For FY 2018–2020, it does include both M&O and facility costs such as personnel; utilities; and fuel for equipment, runway lights, building repairs, electricity, and heating (DOT&PF 2021).

2.5.1 Airport Revenues and Expenditures

For the years studied, the Birchwood Airport has had an operating profit. Table 8 compares revenues and expenses associated with the airport for fiscal year (FY) 2015–2022.

Table 8: Revenues, Expenses, and Operating Profits, \$, FY 2015-2022

Fiscal Year	Revenue	Expenses	Operating Profit
2015	208,165.98	66,793.98	141,372.00
2016	201,024.25	57,423.97	143,600.28
2017	200,555.79	134,124.85	66,430.94
2018	243,716.10	99,907.24	143,808.86
2019	258,990.50	97,672.78	161,317.72
2020	273,832.14	147,209.04	126,623.10
2021	292,437.38	155,373.86	137,063.52
2022	280,021.52	145,309.75	134,711.77

Source: DOT&PF, 2023b

Birchwood Airport generates revenues from several sources. In order of greatest to least, revenues in FY 2020 came from land use (70% of total revenue), assigned aircraft tie-downs and transient parking (25%), application and process fees (3%), fuel dispensing permits (2%), and interest and late fees (<1%). Revenues have grown rapidly from FY 2017 to FY 2021, increasing 45.8% over that period. The increase has largely been driven by land use revenues. Table 9 provides total revenues for FY 2015-2016 and detailed revenues for FY 2017–2022.

Table 9: Revenue Detail, \$, FY 2015-2022

Fiscal Year	Assigned Aircraft Tie-Down/Transient Parking	Fuel Dispensing Permit	Interest/Late Fees	Application /Process Fee	Land Use	Total Revenue
2015	A detailed breakdown of revenue is not available					208,165.98
2016	A detailed breakdown of revenue is not available					201,024.25
2017	50,937.19	2,895.35	260.73	1,050.00	145,412.52	200,555.79
2018	68,718.00	4,721.14	243.28	4,225.00	165,808.68	243,716.10
2019	68,756.16	10,982.53	396.59	3,775.00	175,080.22	258,990.50
2020	68,723.00	5,137.15	212.52	8,025.00	191,734.47	273,832.14
2021	69,876.00	4,271.48	164.79	2,250.00	215,875.11	292,437.38
2022	70,912.66	5,225.40	150.16	250.00	203,483.30	280,021.52

Source: DOT&PF, 2023b

Birchwood Airport generates expenses from several sources. Historically, expenses included categories such as personal services, services, and commodities, in that order of magnitude. While personal services have been the largest category of spending at the airport, they constitute a smaller share than other airports because Birchwood Airport is unmanned. In FY 2020, the new categories of facilities and capital outlay costs accounted for 70% of expenses. Personal services (19% of the total), services (7%), and commodities (4%) costs were all lower than has been typical for the airport in recent years.

Expenses at Birchwood Airport are shown in Table 10. Facilities costs are included for FY 2018–2022, causing an increase in the baseline expenses at the airport relative to prior years. In FY 2020, additional capital outlay and facilities expenses resulted in higher total expenses for a year in which expenses would have otherwise been lower due to less spending in other categories.

Table 10: Expense Detail, \$, FY 2015-2022

Fiscal Year	Personal Services	Services	Commodities	Capital Outlay	Facilities	Total Expense
2015	24,630.88	6,289.18	35,873.92			66,793.98
2016	26,887.86	5,296.41	25,239.70			57,423.97
2017	74,387.00	51,310.18	8,427.67			134,124.85
2018	45,629.06	42,344.99	11,933.19			99,907.24
2019	42,339.96	46,883.01	8,389.81			97,672.78
2020	27,708.92	10,715.40	5,429.71	25,207.05	78,147.96	147,209.04
2021	6,105.04	29,961.91	4,941.12		114,365.79	155,373.86
2022	38,432.89	10,285.67	11,851.12		84,740.07	145,309.75

Source: DOT&PF, 2023b

Other than seasonal variations in the type and amount of operating expenses required for airport operations (e.g., heating and snow removal costs during the winter), insufficient information is available to determine daily or quarterly variations in the operating costs at the airport at this time.

3.0 CURRENT AND FORECASTED AVIATION ACTIVITY

This section documents the development of the aviation activity forecast for Birchwood Airport and describes the purpose of a forecast and the methods used to gather and analyze the data considered. The results of previous forecasts are summarized and compared to the findings of this forecast.

The purpose of an aviation activity forecast is to:

1. Establish the current operational demands of the airport.
2. Evaluate historical airport uses and trends that affect aviation activity at the airport.
3. Forecast future operational demands based on the current demand and historical trends.

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 while developing the forecast. The following terminology defines the different types of airport operations discussed in this report:

Operations: The FAA guidance regarding what constitutes an operation is defined differently in the FAA Advisory Circulars (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 (FAA, 2015).
- 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 are expressly excluded from operational counts (FAA, 2017b). 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: Most training operations, are touch-and-go operations, and not included in the operations count per AC 150/5000-17. The training operations are identified separately in the baseline forecast and are considered when evaluating airfield demand.

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, pilots with an address in the MOA or the nearby Palmer and Wasilla communities are assumed to be based at Birchwood Airport. This method generates a slightly higher proportion

of Local Operations compared to a cross-reference between operational identifiers and based aircraft registrations. Based aircraft records only include active registrations, in which airport sponsors have reported Birchwood as their home base, which would exclude some 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 (U.S. 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 through the Airport Activity Survey annually (FAA, 2021a).

3.1 Prior Forecasts

When preparing an aviation activity forecast, the FAA requires that Terminal Area Forecast (TAF), previous forecasts, and state or local aviation system plan forecasts be considered (FAA, 2015). For the Birchwood Airport, relevant data from the 2005 Draft Birchwood Airport Master (2005 Master Plan), the 2011 AASP forecast, and the FAA’s TAF forecast were considered and compared to the 2020 baseline data developed in this report. A discussion and comparison to each forecast follows:

3.1.1 2005 Draft Birchwood Airport Master Plan

The forecast covered a planning period from 2000 to 2020 and is shown in Table 11. This forecast was based on field observations collected by the FAA Air Traffic Division in 2000 and HDR in 2001.

In 2000, the FAA responded to a request for an air traffic control tower at Birchwood Airport by performing an air traffic count survey. The survey took place over 10 days, spread out between May 23 and September 1. The survey recorded 1,662 operations spread over 75 hours during the 10 days. The FAA did not differentiate between take-offs, landings, and training operations.

In 2001, HDR, Inc. performed an air traffic count survey over eight days between July 5 and September 4. This survey separated training operations from take-offs and landings. In all, 557 operations were observed over 41 hours during the course of eight days. Of the operations observed, 224 (40%) were training operations. The operations and training operations were used to develop an hourly average volume of operations and training operations. A yearly average was calculated by multiplying the hourly average by the number of annual daylight hours between civil twilight. Therefore, the 2005 Draft Master Plan included both operations and training related touch-and-go operations to develop the yearly baseline aviation activity estimate. The 2005 Draft Master Plan also assumed that one-third of the baseline traffic was local and two-thirds were itinerant. Military operations were determined based on the Airport Master Record showing “<1%” military operations.

The 2005 Draft Master Plan projected moderate growth forecast scenario that corresponded with the annual average population growth for the region of 1.2% per year in the 15 years before the 2001 base year. A summary of the 2005 Draft Master Plan is included in Table 11.

The 2005 Draft Master Plan found no air carriers were operating or anticipated to start operating at the airport and did not forecast any enplanements. Actual operation counts from the BTS were not available for Birchwood Airport, which confirmed that no reporting air carriers were providing scheduled service at the airport during that time.

The existing and ultimate critical aircraft for each runway was identified for the planning period. For Runway 02L/20R (then called 01L/29R), the current and ultimate critical aircraft was determined to be a B-II to accommodate a fleet mix of small aircraft, including Piper Navajo (B-I), Piper Aztec (B-I), and Beechcraft M18 (A-II). For Runway 02R/20L, the critical aircraft was identified as A-I based on a fleet mix of tundra tire or ski-equipped aircraft such as Piper PA-12 and Piper PA-18.

Table 11: 2005 Draft Birchwood Airport Master Plan

Aircraft Operations Forecast				
	Base Year Estimate		Projected	
	2000	2005	2010	2020
Air Carrier	0	0	0	0
Air Taxi	2,200	2,346	2,494	2,785
General Aviation	83,808	89,378	94,949	106,888
Military	100	107	113	127
Total Operations	86,108	91,831	97,554	109,000
Based Aircraft	435	491	509	560

In summary, the 2005 Draft Master Plan used data sets for observed airport activity to establish the base year level of operations. One of the data sets used (data collected in 2000) included training related touch-and-go operations, which resulted in a higher level of operations assumed in the base year. Current FAA guidance does not allow touch-and-go training operations to be used in critical aircraft determination. Therefore, the 2005 base year and forecasted operations cannot be used as an accurate comparison to the 2020 aviation counts gathered for this forecast.

3.1.2 2011 Alaska Aviation System Plan Forecast

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 includes documents on the condition of the aviation system with photos, maps, and data and is continuously updated as planning, design, and construction projects are completed.

The AASP includes a statewide aviation activity forecast published in 2011, which consists of a high-level forecast for Birchwood Airport. The AASP forecast is based on the historical FAA data for hours flown and based aircraft in Alaska compared to the rest of the United States. The AASP forecast then uses the correlation between hours flown and based aircraft to estimate operations

for Alaska as a whole. Next, specific data for Birchwood Airport is derived from the number of based aircraft at the airport, which is derived from the FAA Airport Master Record data (5010).

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 AASP forecast includes forecasts for 2008-2030 for enplanements, operations, and based aircraft. The Cessna 185 was identified 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.

Birchwood Airport lacks commercial service, so the Cessna 185 (A-I (utility)) was identified as the study period’s existing and ultimate critical aircraft. The AASP forecasted activity specific to Birchwood Airport is summarized in Table 12.

Table 12: 2011 AASP Forecast for Birchwood Airport

Aircraft Operations Forecast				
	Base Year Estimate	Projected		
	2000	2005	2010	2020
Air Carrier	0	0	0	0
Air Taxi	0	0	0	0
General Aviation	36,525	36,043	38,330	46,047
Military	0	0	0	0
Total Operations	36,525	36,043	38,330	46,047
Based Aircraft	307	316	330	367

Birchwood Airport was not one of the airports studied in detail when the AASP forecast was prepared for the State of Alaska, and no local counts were performed at Birchwood Airport for the AASP. The method used to establish base-level estimates in the AASP relied on statistical information for the State of Alaska and applied that information to Birchwood Airport based on the number of based aircraft reported in the 5010 Master Record. The information used for this forecast is based on recently observed operation levels at Birchwood Airport and provides more accurate and detailed information than what is available in the AASP.

3.1.3 2019 FAA Terminal Area Forecast

The FAA maintains TAF for non-hub airports using modeling based on the number of based aircraft present at the airport (FAA, 2019a). The TAF is the official FAA forecast of aviation activity for active U.S. airports in the NPAIS, including Birchwood Airport. The TAF is updated frequently based on historical traffic information. Birchwood Airport is a non-towered airport, so no direct traffic records are available from Air Traffic Control. With the lack of specific reported information, the TAF for Non-Primary Airports, such as Birchwood, 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 May 20, 2021, 5010 Master Record estimates 70,188 operations annually for Birchwood (FAA, 2021b).

The quality of the TAF forecast depends on the quality of the estimated aviation activity data entered into the Master Record. Without knowing the source of the operational data entered into the Master Record in 2011 and knowing that the TAF does not consider local economic trends, the TAF is not a sufficient forecasting tool for Birchwood Airport.

3.2 Air Traffic Forecast

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.

This aviation forecast will be used to 1) compare demand as it changes over time with the capacity of airport facilities and 2) identify the time or activity levels when new or expanded facilities are needed.

The baseline for the forecast was developed through the evaluation of air carrier reporting, recorded instrument flight plans, operational counts, and interviews with air carriers and airport users. The methods used for this forecast are further discussed in the forecast methodology section below.

3.2.1 Operational Traffic Counts

On July 21, 2020, DOT&PF installed an automatic air traffic counter at the combined airport maintenance building and fire station, which is located on airport property. Data was collected on the counter using a General Audio Recording Device (G.A.R.D.) – an activity counting tool produced by Invisible Intelligence, LLC. The automated counter collected and recorded radio transmissions and operations through radar surveillance based on active aircraft transponders.

The G.A.R.D. software can generate reports for hourly, monthly, and yearly airport traffic for a designated reporting period. The software cross-references transponders with the FAA’s Automatic Dependent Surveillance-Broadcast (ADS-B) registry to identify the particular make and model of the aircraft recorded. Aircraft without ADS-B transponders are assigned unique “S” codes when entering the radar surveillance area. No make or model information is available for aircraft recorded with “S” codes, and the aircraft information is represented as “unknown” on the traffic counter reports. Based on interviews with airport users, aircraft without transponders are typically small aircraft. Therefore, all “unknown” aircraft are represented as A-I (utility) aircraft for the purposes of this forecast.

The DOT&PF recorded aviation activity data on the airport for two recording periods. The first recording period lasted 27 days between July 21 and August 16, 2020. The second recording period lasted 31 days between September 2 and October 2, 2020.

The G.A.R.D. automated counting system logs triggering events. In the case of the G.A.R.D. system, radio transmission events are logged when the transmission occurs within a pre-set range from the airport. Each event is logged together with the location and ADS-B transponder code or S-Code. This method allows for the identification of aircraft make and model of all transponder-

equipped aircraft. Training operations are identified by measuring the time between operations for each distinct aircraft. When the same aircraft has multiple operations only separated by under 10 minutes, it is assumed by Invisible Intelligence, LLC that the pilot is practicing touch-and-go operations.

Roughly 80% of the recorded aviation activity was related to training related touch-and-go operations. Table 13 outlines the recorded training operations. While this information was not included in the operations count to determine the critical aircraft per AC 150/5000-17, it was considered when evaluating airfield demand.

The G.A.R.D automated counter recorded 1,330 operations over 27 days at Birchwood Airport from July 21 to August 16, 2020. The G.A.R.D recorded 618 operations during a separate reporting period spanning 31 days from September 2 to October 2. The activity count periods and results are summarized in Table 14.

Table 13: 2020 Touch-and-Go Training Activity Counts

G.A.R.D. Counts		
	<u>G.A.R.D. Count 1</u>	<u>G.A.R.D. Count 2</u>
Dates	7/21/20 - 8/16/20	9/2/20 - 10/2/20
Number of Days	27	19
Recorded Touch-and-Go Operations	5,875	2,341
Average Ops/Day	218	140

Table 14: 2020 Activity Counts

G.A.R.D. Counts		
	<u>G.A.R.D. Count 1</u>	<u>G.A.R.D. Count 2</u>
Dates	7/21/20 - 8/16/20	9/2/20 - 10/2/20
Number of Days	27	19
Recorded Operations	1,330	618
Average Ops/Day	49.5	32.5

An annual projection of yearly operations was developed by assuming that the two distinct reporting periods represent typical aviation activity levels in the summer months and winter months, respectively. Summer operations were assumed to occur during the 99 days between Memorial Day and Labor Day. Winter operations were assumed to occur during the 266 days between Labor Day and Memorial Day. Assuming 49.5 operations per day during the summer and 32.5 operations per day during the winter results in an annual average of 13,545 operations a year (Table 15).

Table 15: Estimated 2020 Operations

Summer vs Winter Activity			
	Summer Activity	Winter Activity	Yearly Activity
Assumed Duration	5/25/20 - 9/7/20	9/7/20 - 5/31/21	
Average Ops/Day	49.5	32.5	
Average Training Ops/Day	218	120	
Number of Days Assumed	99	266	
Extrapolated Subtotal Operations	4,900	8,645	
Extrapolated Subtotal Training Operations	21,582	31,920	
Estimated Annual Ops			13,545
Estimated Annual Training Ops			53,502

The G.A.R.D collected data was sorted based on the location of the owner’s residence to determine the ratio of local versus itinerant operations at Birchwood Airport. This information is reflected in Table 16.

Table 16: Operations by Aircraft Owner’s Address

G.A.R.D. Counts		
	G.A.R.D. Count 1	G.A.R.D. Count 2
Dates	7/21/20 - 8/16/20	9/2/20 - 10/2/20
Number of Operations	1,330	618
MOA and MSB Address	490	284
CAP	313	39
Other State	256	62
Unknown	271	233
Percent Local Operations	60.4%	52.3%

The amount of local and itinerant information presented above considers that the CAP uses local aircraft. These aircraft are not registered locally but are used by the local chapter and based at Birchwood Airport while on rotation to the local chapter.

Based on the information shown in Table 16, local GA operations are assumed to be between 50% and 60% of Birchwood Airport’s estimated operations.

Ski Operations

Additional G.A.R.D data was collected in March and April 2023 to estimate the number of aircraft that utilize Runway 02R/20L, which provided baseline numbers for ski operations. The G.A.R.D automated counter recorded 5,175 operations at Birchwood Airport from March 8 to April 31, 2023. The transponder data from the same time reflected that approximately 32.82% of the operations occurred on the ski runway, with the remainder taking place on the main paved runway. This operational distribution likely reflects a lower than actual utilization of the ski runway because the majority of the planes that utilize the ski runway are small, cub-style aircraft that are not typically transponder equipped. Conservatively applying the 31.82% distribution to the total operations results shows that approximately 1,035 ski operations occurred on Runway 02R/20L during the study period.

As stated above, 80% of the operations at the Birchwood Airport are training related touch-and-gos and not eligible to be counted for regular use. Therefore, only 20% of the 1,035 ski operations counted are assumed to be eligible operations. This is likely a conservative assumption considering ski-plane pilots do not tend to perform training operations on runways at the same frequency as normal summertime traffic. Ski pilots tend to be more experienced, while much of the normal summer touch-and-go traffic at Birchwood Airport is performed by student pilots and flight schools. However, conservatively applying the 20% factor to the 1,035 total ski plane operations results in 329 eligible ski operations during the reporting period—or 6.2 ski operations per day.

Assuming that local ski pilots are generally twice as likely to fly during the peak months of March and April as they are during the rest of the ski flying season of November through February, an average of 6.2 ski operations per day occurred during March and April, and an average of 3.1 ski operations occurred per day during November through February. This resulted in 329 ski operations from November through February and 391 ski operations in March and April, for a total estimate of 721 annual ski operations on Runway 02R/20L.

3.2.2 Scheduled Service/Air Taxi/Charter Traffic

Scheduled airport activity data is collected in the BTS’s “T-100 Domestic air carriers” database. All certificated air carriers that offer scheduled service are required to submit a report to BTS each month. FAA includes this information in the Air Carrier Activity Information System (ACAIS). On-demand-only operators are not required to submit monthly reports and thereby are not fully represented in the database. Birchwood Airport is not included in the “T-100 Domestic air carriers” 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 Airport Manager and airport users.

The FAA collects data for air taxi operations through the FAA “Airport Activity Survey of Air Taxi/Commercial Operators” (FAA, 2019b). This survey is completed annually voluntarily, and the results are contained in the ACAIS. Birchwood air taxi enplanements recorded in the ACAIS show that there were between 140 to 450 air taxi enplanements annually from 2003 to 2012. These enplanements were likely related to guided hunting and fishing trips operated by airport user Dennis Harm. Mr. Harm stated that he stopped flying for guide operations around 2012, and no enplanements were reported at Birchwood between 2013 and 2018. A total of six enplanements were reported in 2019, and zero enplanements were reported in 2020 (FAA, 2020d).

In 2022, there were five Part 135 operators that occupied lease lots and/or tie-downs on Birchwood Airport, including: Denali Flying Service, Nick’s Air Service, 70 Degrees North, Alaska Air Services, and Precision Plus. The team interviewed the owner of 70 Degree North, Precision Plus, and Nick’s Air Service to discuss how the Part 135 operators based at Birchwood currently use the airport. With the exception of Nick’s Air Service, it was reported that Part 135 operators generally use their hangars and tie-downs for aircraft storage and maintenance and do not operate out of Birchwood for passenger service. Nick’s Air Services operate a Piper PA-18 Super Cub and a Cessna 185 and offer sightseeing, bear viewing, and air taxi services.

Additionally, non-based operators, Lake Clark Air Services and Lake and Peninsula Airlines (Lake and Pen) were interviewed about how the Birchwood Airport is utilized by commercial operators

that are not located at the airport. Both operators are based at nearby Merrill Field Airport and operate scheduled and unscheduled flights to rural Alaska. The results of the interviews are as follows:

- Lake Clark Air stated that they fly into the Birchwood Airport between 12 and 20 times a year with their fleet (including, but not limited to Beechcraft 100 [King Air], Beechcraft-99 [Commuter], Beechcraft 36 [Bonanza], Piper PA-31 [Chieftain] and Cessna 207 [Skywagon]). This happens when ground fog at Merrill Field causes visibility to fall below minimums in the Anchorage Bowl but generally does not affect Birchwood. Lake Clark stated that this generally happens on returning flights when passengers are departing the aircraft and, therefore, does not include enplanements. Lake Clark also emphasized the need to maintain the existing runway length and width to ensure access for the larger commercial aircraft.
- Lake and Pen stated they primarily use the Birchwood Airport as an alternative when they cannot land at Merrill Field or AIA due to weather. Before upgrading their fleet (from VFR to IFR), Lake and Pen used the Birchwood Airport as an alternative airstrip with a similar frequency to Lake Clark Air. Between 2018 and 2022, with the upgrade to IFR, they estimated that they used Birchwood four to five times total, primarily with VFR Piper PA-18 Super Cubs. Lake and Pen stated that they direct any of their IFR-equipped aircraft to AIA when Merrill Field is not available due to weather.

Therefore, the six total enplanements reported on FAA “Airport Activity Survey of Air Taxi/Commercial Operators” for the baseline forecast (FAA, 2020d) is considered a low representation of recent air taxi activity. The addition of Nick’s Flying Services on the airport likely resulted in more enplanements, but the change is not significant enough to impact the master planning process.

3.2.3 Military and Other Air Traffic

Military Operations

In interviews, airport users indicated that there are currently no military operations at Birchwood Airport, which is also supported by the ownership information for the aircraft that was recorded by the G.A.R.D. There are no military operations in the recorded aviation activity data.

There were 16 operations the dataset by aircraft owned by the U.S. Department of Interior, Office of Aviation Services. Two aircraft were used in these operations, a Cub Crafters CC18-180 and a Cessna U206. FAA policy prohibits the inclusion of operations with military or federally-owned aircraft in critical aircraft determination (FAA, 2019b). These operations are considered federal/military operations in this forecast and are not included in the operational statistics under the respective category.

Helicopter Operations

Based on interviews, helicopter traffic at Birchwood Airport mainly consists of operations with helicopters based at other airports. The data from G.A.R.D. identified 18 operations during the recorded periods. The amount of helicopter operations does not rise to the level of critical aircraft.

The dataset also includes one helicopter operation with a Eurocopter AS 350 owned by the State of Alaska. As state agencies are not excluded from funding eligibility, this operation is included in the operational statistics in the forecast below.

Balloon Activity

The data from G.A.R.D. identified one operation by a balloon. Based on interviews, this operation appears to be an anomaly, and there is no balloon activity reported by airport users or DOT&PF M&O staff. Balloon operations are not included in the aviation activity forecast.

Glider Operations

Glider operators from CAP and the AMSA were interviewed during the development of this master plan. CAP operates the following three gliders based at Birchwood:

- LET L-23 Super Blaník (53-foot wingspan)
- Schweizer SGS 2-33 (51-foot wingspan)
- ASK 21(55.75-foot wingspan)

CAP stated that 2019 was a representative year for glider activity, with a total of 248 glider operations. CAP also stated that there are three additional privately owned gliders on the airfield that have occasional operations.

The AMSA is based out of the Wasilla Municipal Airport and was unable to provide records for how many glider operations they conduct each year out of Birchwood. However, AMSA stated that they would prefer to relocate their base of operations to Birchwood for two reasons:

- Proximity: Most of their members and anticipated member growth are Anchorage-based. It is a much shorter drive from Anchorage to Birchwood than to their current base in Wasilla.
- Meteorology: The proximity of the Birchwood Airport to the Chugach Mountains makes for a superior location for access to updrafts and lifts used by gliders.

To date, AMSA has been unable to locate suitable permanent or temporary tie-down space at Birchwood Airport. If tie-down space were available, the AMSA stated they would relocate their tow plane, training glider, and club single seat glider to the airport. Further, club members presently have two additional personal single seat gliders that would be also be moved and two more which are in the process of being restored for future use. Relocation of AMSR aircraft could result in as many as six additional gliders based at the Birchwood Airport in the future. Therefore, glider pilots represent a significant and unique airport user group that needs to be considered when planning future airport developments.

3.2.4 Based Aircraft and Fleet Mix

The airport Master Record shows that there are currently 308 aircraft based at the airport (FAA, 2021b). There are 119 leasable tie-downs on the GA aprons at the airport. The DOT&PF's Statewide Aviation Leasing Office records indicate that all of the existing GA tie-downs are regularly leased during the summer months. The DOT&PF Leasing also stated that there is existing demand for an additional approximately 20 additional tie-down spaces. A count of aircraft visible

in 2020 aerial photography shows 237 occupied tie-downs on the GA aprons and private lease lots. The visual count does not account for aircraft located inside hangars. A count of hangar doors on the airport buildings indicates as many as 136 hangar units. There could be as many as 373 based aircraft at Birchwood Airport, assuming one aircraft per hangar door. However, getting an accurate count would require access to all hangars and interviews with all tenants, which is beyond the scope of this study. Therefore, the current 5010 Master Record is considered to be the best source of data available for aircraft based at Birchwood Airport, and 308 based aircraft was used as the baseline for the forecast.

The aircraft fleet in this forecast was developed from the mix of aircraft reported by the G.A.R.D automated counter during the two periods of observation in the summer and fall of 2020 and confirmed with a series of interviews with airport users, tenants, and business owners. Training operations have not been included in the fleet mix data. The G.A.R.D fleet mix data is shown in Table 17 below.

Table 17: Aircraft Mix at Birchwood Airport 2020

G.A.R.D. Counts		
	G.A.R.D. Count 1	G.A.R.D. Count 2
Dates	7/21/20 - 8/16/20	9/2/20 - 10/2/20
Number of Operations	1,330	618
A-I	1,309	603
A-II	0	6
B-I	3	4
C-I	1	0
C-II	4	0
Helicopter	13	5
Military/Federal (A-I)	14	2

3.2.5 Forecast Methodology

There are several methodologies and techniques for forecasting aviation activity at an airport. These methodologies are described in an FAA document titled Forecasting Aviation Activity by Airport (FAA, 2001). The chosen methodology for this forecast is trend analysis and extrapolation.

The forecast methodology approved by the DOT&PF and the FAA in November 2020 consisted of comparing actual operation counts collected by the DOT&PF with the forecasted aviation activity reported in the 2005 Draft Airport Master Plan and the 2011 AASP to see if a correlation or regression analysis could be established. However, after comparing the 2005 Draft Master Plan, the 2011 AASP Forecast for Birchwood, and the aviation activity recorded by the DOT&PF in 2020, it was determined that there is no direct correlation between the two previous forecasts and the currently recorded data.

The lack of correlation between the data from the previous forecasts and the 2020 data is likely due to the varying methodologies used to establish the baseline forecasts. There is no clear correlation between the data points, and therefore, a regression analysis is unlikely to produce reliable data that can be used to forecast aviation activity at Birchwood Airport for the study period. This conclusion matches the conclusions from the 2005 Draft Master Plan and the 2011 AASP

forecasts, which also found that there is not a sufficient amount of historical aviation operation data available at Birchwood Airport to generate a regression analysis for a reliable forecast.

Likewise, using trends with based aircraft to establish a regression analysis at Birchwood Airport will also not produce an accurate trend line for future forecasting. The airport has been reported at maximum capacity for tie-down lease space since the conclusion of the 2005 Draft Master Plan, and the number of based aircraft has been limited by the tie-down and lease space available.

Therefore, the forecasting methodology based on historical population trends used in both the 2005 Draft Master Plan and the AASP remains the best indicator for future aircraft activity at Birchwood Airport at this time.

The majority of airport users at Birchwood Airport reside in the MOA or the MSB, as determined by a review of airport leases and G.A.R.D. recorded activity data. Therefore, Alaska Department of Labor and Workforce Development (ADLWD) records of historical population and forecasted population, economic, and local aviation trends for the MOA and the MSB were used to project the 2020 baseline operations at Birchwood Airport.

3.2.6 Area Population and Economic Trends

A socioeconomic profile, prepared by Northern Economics in November 2020, relates GA and commercial aviation activity to the economic and demographic trends in the study area. According to the ADLWD, the population in the MOA – which includes Chugiak – and the population in the MSB are expected to continue increasing over the next decade as the number of births and in-migration exceeds the number of deaths and out-migration. The population and economic trends in the study area are discussed in Section 6.0.

Local economic conditions for the 20-year planning horizon are forecasted to remain much as they are today. According to airport users, the fleet serving the airport is unlikely to change. The ADLWD population forecast predicts population in the region will continue to increase at a rate of 0.6% between 2019 and 2045. Table 18 provides the ADLWD population forecasts for MOA and MSB (Northern Economics, 2021).

Table 18: ADLWD Population Forecast for MOA and MSB

	Population Forecasts					
	2020 - 2025	2025 – 2030	2030 - 2035	2035 - 2040	2040 - 2045	2020 - 2045
MOA	0.5%	0.3%	0.2%	0.1%	0.1%	0.2%
MSB	1.9%	1.6%	1.5%	1.3%	1.1%	1.5%
Study Area	0.9%	0.7%	0.6%	0.5%	0.4%	0.6%

3.2.6.1 Population

The rate of population growth in the MOA and MSB is anticipated to have a direct relationship with the level of aviation activity at the airport. Historical and forecasted population trends for the MOA and MSB are discussed in Section 2.4.

3.2.6.2 Economic Activity

The local Chugiak economy is tied closely to the economic conditions and opportunities within the MOA and MSB, especially the communities of Anchorage, Palmer, and Wasilla. The Chugiak

area is a residential area with little commercial or industrial activity. The economic trends in and around the vicinity are discussed in Section 2.4.

No new economic drivers have been identified for the Chugiak area, and the economic growth is anticipated to align with population growth for the study period.

3.2.7 Based Aircraft

The forecast for based aircraft assumes that the unmet need for tie-downs and lease lots will be satisfied over the next 10 years. This forecast considers an overall trend for based aircraft that matches the population trends shown for the 20-year planning horizon in Table 18. However, assuming additional apron areas are developed in the near term to satisfy the unmet demand, an additional 20 aircraft are added to the year five based aircraft forecast, above the overall growth trend projected. Also, assuming additional lease space will be available in approximately 10 years and that the majority of lease lots will be developed for single hangar use, an additional 25 aircraft are added to the year 10 based aircraft forecast, above the growth projected, to satisfy unmet lease lot demand.

3.2.8 Trend Line Development

Low, moderate, and high growth rates for air traffic at Birchwood Airport follow the trend lines developed by Northern Economics (Northern Economics, 2021). The low rate represents 32.4% of the baseline projection. The baseline projection aligns with the average combined growth rate for both the MOA and MSB. The high growth rate is scaled to 133.5% of the baseline projection.

There are no air carriers currently offering scheduled passenger operations from Birchwood Airport. Interviews conducted with airport tenants indicated only occasional air taxi operations occur. Since the variations are irregular from year to year, no change from the baseline enplanements is forecasted.

Table 19 presents the low, moderate, and high growth rates developed for Birchwood Airport air traffic forecasts for the study period (Northern Economics, 2021).

Table 19: Annual Growth Rates for Birchwood Airport 2020 - 2045

Years	Annual Growth Rate (Percent)		
	Low	Base	High
2020 - 2025	0.28%	0.86%	1.14%
2025 - 2030	0.22%	0.67%	0.89%
2030 - 2035	0.18%	0.57%	0.76%
2035 - 2040	0.16%	0.48%	0.64%
2040 - 2045	0.13%	0.39%	0.53%

Table 20 provides a forecast for Birchwood Airport. Note that the counts presented in the table do not include training operations.

Table 20: Air Traffic Forecast Birchwood Airport 2020 - 2040

	Air Traffic by Type				
	2020	2025	2030	2035	2040
Enplanements					
Low Forecast	6	6	6	6	6
Moderate Forecast	6	6	6	6	6
High Forecast	6	6	6	6	6
Based Aircraft					
Low Forecast	308	332	361	364	367
Moderate Forecast	308	341	378	389	398
High Forecast	308	346	387	402	415
Local GA Operations					
Low Forecast	8,056	8,165	8,249	8,323	8,386
Moderate Forecast	8,056	8,408	8,693	8,944	9,161
High Forecast	8,056	8,526	8,912	9,256	9,556
Itinerant GA Operations					
Low Forecast	5,489	5,563	5,621	5,670	5,713
Moderate Forecast	5,489	5,728	5,925	6,088	6,230
High Forecast	5,489	5,806	6,067	6,300	6,507
Helicopter Operations					
Low Forecast	118	120	121	122	123
Moderate Forecast	118	123	127	131	134
High Forecast	118	125	131	136	140
Operations - Total					
Low Forecast	13,545	13,728	13,870	13,993	14,099
Moderate Forecast	13,545	14,136	14,618	15,032	15,391
High Forecast	13,545	14,332	14,979	15,556	16,063

Note: Italicized text is used to indicate forecasted aviation activity.

Based on projections from a base forecast scenario, operations will reach 15,391 operations annually by 2040. Enplanements are not anticipated to change at Birchwood Airport.

3.2.9 Critical Aircraft

Aircraft with a MTOW of less than 12,500 pounds, an AAC of A, and an Aircraft Design Group (ADG) of I – that is A-I (utility) – make up 97-98% of operations at Birchwood Airport and are the only classification of aircraft with more than 500 operations annually. The A-I critical aircraft is the same for Runway 02L/20R and Runway 02R/20L. However, 2023 G.A.R.D counts estimated there are more than 500 annual ski operations on Runway 02R/20L, and the critical aircraft for that runway should be considered to be ski-equipped. Three aircraft models –Cessna 172, Cessna 180, and Cessna 182 – were projected to have more than 500 annual operations each based on 2020 interpolated recorded aviation data. These aircraft are A-I aircraft with MTOW of less than 12,500 pounds (utility). Therefore, based on the recorded operations and forecasted activity, A-I (utility) aircraft constitute both the existing and ultimate critical aircraft at Birchwood Airport.

Existing Critical Aircraft: A-I (utility)

Ultimate Critical Aircraft: A-I (utility)

The Approach and Departure Reference Codes (APRC/DPRC) for a runway are a measure of the largest aircraft that can operate on the runway while maintaining safety for aircraft simultaneously taxing on a parallel taxiway (FAA, 2014). Based on visibility minima and separation between the runway centerline and the parallel taxiways, the existing APRC is B/I(S)/4,000, and the ultimate ARC is B/II/4000. The existing DPRC is B/I, and the ultimate DPRC is B/II.

4.0 AIRPORT FACILITY REQUIREMENTS AND STANDARDS

The facility standards review takes into consideration the requirements of the airside facilities, visual and navigation 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 B.

4.1 Airfield

Birchwood Airport is classified as a non-primary GA airport by the FAA NPIAS and as a Local High Activity Airport in the DOT&PF AASP. The NPIAS categorizes GA airports by their function and contribution to their communities and the national airspace system. Local airports are defined as airports that supplement communities by providing access to primarily intrastate and some interstate markets. These classifications will not change based on the forecasted demand and critical aircraft.

4.1.1 Airport Reference Code and Critical Aircraft

The ARC is a system used by the FAA to relate airport design criteria to the operational requirements of the critical aircraft. The ARC is comprised of two components: a letter and a Roman numeral. The first component is the AAC, which is grouped based on the aircraft approach speed, as shown in Table 21 below.

Table 21: Aircraft Approach Categories

AAC	Approach Speed (Knots)
A	<91
B	91 - 121
C	121 - 141
D	141 -166
E	>166

The second component, the ADG, is based on the wingspan of the aircraft, as shown in Table 22 below.

Table 22: Aircraft Design Groups

ADG	Wingspan (Feet)
I	<49
II	49 - 79
III	79 - 118
IV	118 - 171
V	>171

The ARC is also appointed with the “(utility)” designation if the critical aircraft has a MTOW of less than 12,500 pounds.

The critical aircraft for an airport is the most demanding aircraft regularly using the airport. Regular use is defined as having at least 500 annual operations at the airport (FAA, 2017b). The

FAA-approved Aviation Activity Forecast determined that the critical aircraft Runway 02L/20R is an A-I, such as the Cessna 182. The forecast also found that Runway 02R/20L had more than 500 annual ski operations and determined that critical aircraft for that runway should be a ski-equipped Cessna 180. Both the Cessna 180 and 182 have an ARC of A-I (utility) and Taxiway Design Group (TDG) of 1A. In the forecast base year 2020, the airport received an estimated 13,545 operations. Most operations were comprised of small GA aircraft. By 2040, annual operations are expected to grow to 15,391. However, the critical aircraft and majority GA aircraft use is not anticipated to change.

The Cessna 180 and 182 critical aircraft have approach speeds of less than 90 knots, wingspans of less than 49 feet, and a MTOW of less than 12,500 pounds. Therefore, Birchwood Airport has an ARC of A-I (utility).

4.1.2 Runway Alignment

Ten years of hourly wind speed and direction observations (collected in the years 2013 through 2022) were obtained through the FAA Airport Data and Information website (FAA, 2021c). A wind rose was developed using the FAA wind rose tool on the same website (Figure 17). The results indicate Runway 02L/20R provides greater than 99% crosswind coverage for aircraft with a crosswind capability of 10.5 knots. With a crosswind coverage of over 99% for small aircraft, no further analysis is needed for larger aircraft. The gravel runway has the same alignment as Runway 02L/20R, so it was not analyzed separately for crosswind coverage. 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 23 and Table 24.

Table 23: FAA Design Standards

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 C-III, D-I through D-III	16

Table 24: Crosswind Coverage at Birchwood Airport 2011-2020

Wind Speed	All Weather	VFR	IFR
10.5	99.90%	99.89%	99.96%

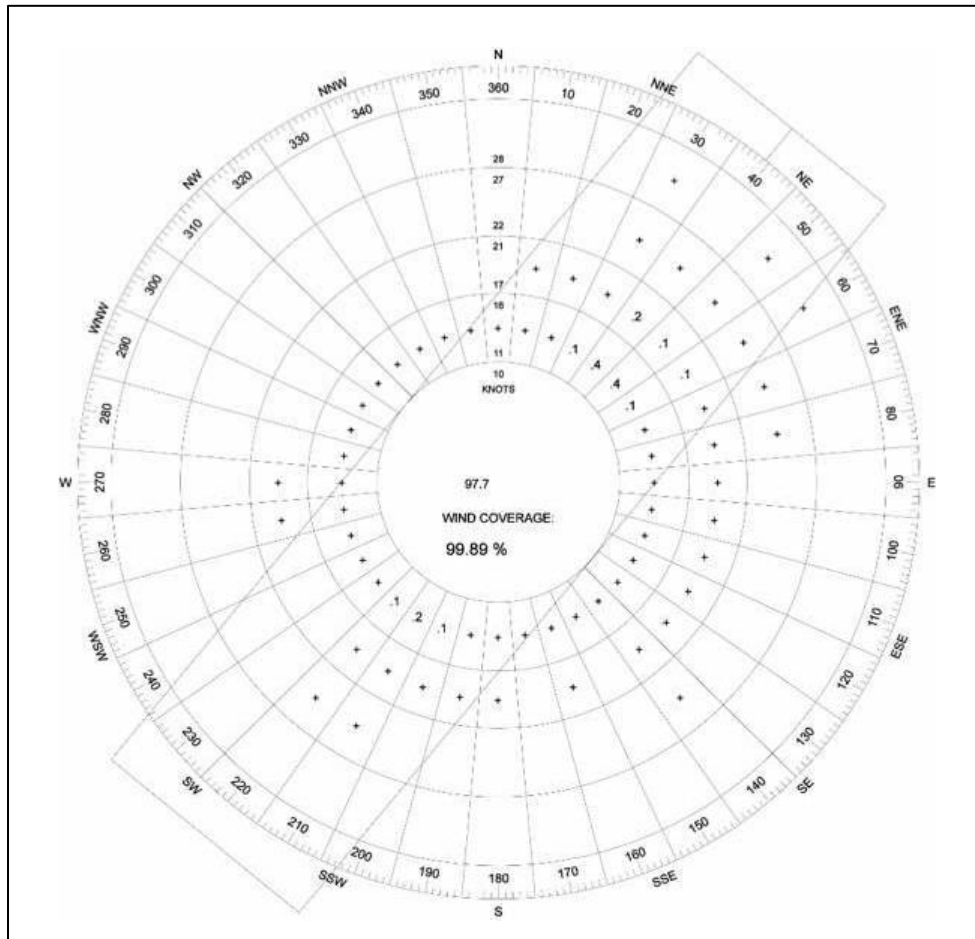


Figure 17: All Weather Wind Rose for Birchwood Airport 2013 - 2022

Both Runways 02L/20R and 02R/20L have a magnetic azimuth of 23.55 degrees. The “Runway 02/20” designation is currently compliant with the standard “plus or minus five degrees” rule for runway designations. However, if the magnetic declination continues to shift at its current rate, both runways will need to be re-designated as “Runway 03/21” in approximately the year 2027 due to magnetic drift.

Pilots interviewed expressed that the similar naming convention of the current runway designations (02L/20R and 02R/20L) cause confusion in the traffic pattern and present the possibility that pilot will use the wrong runway designation when transmitting their intentions on the radio. Also, the current runway naming convention matches the convention that parallel runways are named at other larger airports, which promotes confusion about whether simultaneous operations are permitted. Users recommended that the main runway be designated as Runway 03/21, and the gravel runway be designated as Runway 03G/21G in the ultimate configuration. The “G” included in the designation indicates the “gravel” landing surface.

4.1.3 Runway Design

Length

FAA AC 150/5325-4B Runway Length Requirements for Airport Design provides guidance for determining runway length requirements for various categories of aircraft (FAA, 2005). For Birchwood Airport, the largest aircraft that meets the regular use definition for the airport is the Cessna 182, with a MTOW of 3,100 pounds. Figure 2.1 of the FAA AC 150/5325-4B was referenced to determine runway length requirements for aircraft up to 12,500 pounds gross weight with less than 10 passenger seats. Per the AC, the minimum runway length required for take-off for the group of aircraft is 3,350 feet. Runways 02L and 20R provide 4,012 feet of take-off runway available, which is sufficient for the critical aircraft and occasional use by other aircraft such as the Cessna 208 Caravan. Glider pilots also expressed the need to maintain the existing runway length and stated that reducing runway length would present safety concerns for the glider pilots and CAP glider trainees that routinely use the runway.

FAA AIP grant funding is justified and approved based on the needs of the critical aircraft. The existing dimensions of Runway 02L/20R 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 the reconstruction of the full length is determined to be non-AIP eligible, other funding sources will need to be utilized to reconstruct the 662 feet of existing runway length that exceed the 3,350-foot length required by the critical aircraft.

Runway 02R/20L is primarily used by small GA tundra tire and ski-equipped Short Take-off and Landing (STOL) aircraft and is 1,802 feet long. The northern 600 feet of the runway is paved. The remainder of the runway is surfaced with gravel. This length does not meet the required runway length of 3,350 feet for A-1 (utility) aircraft discussed above. However, the runway is used predominantly by aircraft with short-field capability and users stated that a length of 1,802 for this runway is adequate for its current use. For comparison, the gravel STOL runways at the nearby Palmer and Wasilla Municipal Airports are 1,560 feet long and 1,690 feet long, respectively.

Width

FAA AC 150/5300-13A Airport Design requires that runways intended for A-I (utility) aircraft have a minimum width of 60 feet, with 10-foot shoulders. Runway design requirements are detailed in Table 25. Runway 02L/20R is currently 100 feet wide with 10-foot-wide unpaved shoulders and exceeds standard requirements. Users expressed the desire to maintain the current width to provide additional safety, especially considering the high number of training operations that occur at the Birchwood Airport. Glider operators stated that a reduction in runway width would potentially make the airport unusable for their current glider activities.

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 and glider activity 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 40 feet of existing runway width that exceed the 60-foot width required by the critical aircraft.

Runway 02R/20L is 50 feet wide with 10-foot-wide unpaved shoulders. The runway was constructed in the middle section of parallel Taxiway A and does not meet A-I (utility) width requirements. The runway is in-line with Taxiway A and does not meet parallel runway separation requirements. Future alternatives to improve 02R/20L should increase the runway width to meet A-I (utility) standards.

Non-Standard Runway Conditions

Runway 02R/20L was originally constructed as a parallel taxiway in 1977. In 2005, a portion of the taxiway was converted to use as a runway, with the installation of runway and threshold markers. The runway width is 50 feet, which does not meet the recommended 60-foot width for A-I (utility) aircraft. Taxiway A is aligned with Runway 02R/20L both to the north and to the south, which is prohibited by the FAA as it has been identified as a cause of runway incursions. Runway 02R/20L should be widened to 60 feet, and the aligned taxiways should be removed as soon as practicable.

The Runway Object Free Area

The OFA for Runway 02L/20R should be 250 feet wide and extend 240 feet beyond the runway ends to serve A-I (utility) aircraft. The existing OFA is 250 feet wide and extends 200 feet beyond the threshold of Runway 02L and 240 feet beyond the threshold of Runway 20R. There is an existing 5-foot-high fence located on the property line approximately 200 feet prior to the Runway 02L threshold. This fence is an obstruction inside the OFA that needs to be removed in order to establish the minimum OFA length required.

The OFA for Runway 02R/20L is 250 feet wide and extends 240 feet beyond each threshold. This OFA extends onto parallel Taxiway A, which is in line with the runway. The inline sections of Taxiway A need to be removed to improve safety.

The Runway Safety Area

The Runway 02L/20R RSA is currently 120 feet wide and extends 240 feet prior to the threshold of each threshold. The existing dimensions of the RSA meet the requirements for A-I (utility) aircraft. The perimeter fence, located 200 feet prior to the Runway 02L threshold, is an obstruction, is located within the RSA, and needs to be removed. The section of the RSA that extends beyond the fence is not located on airport property. The DOT&PF has secured an aviation easement to clear obstructions from the RSA in this area; however, fee simple acquisition of the land within the RSA is recommended.

The RSA currently extends 240 feet beyond both ends of Runway 02R/20L and is 120 feet wide, which meets A-I (utility) standards.

Runway Obstacle Free Zone

The Runway OFZ for A-I (utility) aircraft runways should be 250 feet wide and extend 200 feet beyond both ends of the runway. Both Runways 02L/20R and 02R/20L have OFZs that meet these dimensions and are free of obstructions.

Existing Runway Protection Zone

RPZ for runways serving A-I (utility) aircraft should be 1,000 feet long with an inner width of 250 feet and an outer width of 450 feet. The existing RPZs for both runways meet the minimum dimensions for A-I (utility) standards.

Table 25: Runway Design Requirements

Highlight = Non-Standard	Existing		Existing		Standard
	Runway 02L	Runway 20R	Runway 02R	Runway 20L	A-I (utility)
	(Visual)	(Visual)	(Visual)	(Visual)	(Visual)
Orientation					
Runway Length	4,012	4,012	1,802	1,802	
Runway Width	100	100	50	50	60
Runway Shoulder Width	10	10	10	10	10
Runway Design Group	A-I-VIS	A-I-VIS	A-I-VIS	A-I-VIS	
Runway Surface	Paved	Paved	Gravel (North 600' Paved)	Gravel (North 600' Paved)	
Allowable Crosswind	10.5 Knots	10.5 Knots	10.5 Knots	10.5 Knots	10.5 Knots
Runway Safety Area					
Length Beyond Departure End	240	240	240	240	240
Length Prior to Threshold	240	240	240	240	240
Width	120	120	120	120	120
Object Free Area					
Length Beyond Departure End	240	200	240	240	240
Length Prior to Threshold	200	240	240	240	240
Width	250	250	250	250	250
Obstacle Free Zone					
Length Prior to Threshold	200	200	200	200	200
Width	250	250	250	250	250
Approach Runway Protection Zone					
Length	1,000	1,000	1,000	1,000	1,000
Inner Width	250	250	250	250	250
Outer Width	450	450	450	450	450
Acres	8.03	8.03	8.03	8.03	8.03
Departure Obstruction Free Zone					
Length	1,000	1,000	1,000	1,000	1,000
Inner Width	250	250	250	250	250
Outer Width	450	450	450	450	450

Highlight = Non-Standard	Existing		Existing		Standard
	Runway 02L	Runway 20R	Runway 02R	Runway 20L	A-I (utility)
Acres	8.03	8.03	8.03	8.03	8.03
Runway Separation to:					
Hold Position	125	125	125	125	125
Parallel Taxiway	200	200	200	200	N/A ¹⁰
Parallel Taxiway (A/B)	200/300	200/300	540	540	125
Aircraft Parking	330	330	125	125	125
Helicopter Touchdown Pad	N/A	N/A	N/A	N/A	500

¹⁰ 700-foot separation is required for simultaneous operations. Simultaneous operations are prohibited at Birchwood and this separation requirement is not applicable.

4.1.4 Heliport

Helicopter traffic at Birchwood Airport generally consists of student-pilots practicing approach, departures, and hovering maneuvers. In interviews, a few airport users indicated a desire for dedicated helicopter landing facilities to separate the fixed wing from the rotary wing operations. The aviation activity data collected shows seven helicopter operations during the recording period. When projected to an annual baseline, the recorded number of operations equals 90 helicopter operations per year.

This level of activity and the expressed demand from users does not justify separate heliport facilities at the airport. With the limited space currently available at Birchwood Airport, there is not sufficient room on airport property to construct a dedicated heliport without sacrificing a large amount of existing or future space used by GA apron users. Also, Table 5-1 of FAA AC 150/5390-2C Heliport Design recommends a minimum of a 500-foot separation between the centerline of a runway accommodating small aircraft weighing 12,500 pounds or less and the center of a heliport accommodating medium helicopters between 7,001 pounds and 12,500 pounds. This separation criterion makes the construction of a heliport on the existing airport property impractical.

4.1.5 Taxiways

FAA AC 150/5300-13B Airport Design provides the standards for taxiway geometrics and design. The design aircraft for taxiways serving both Runway 02L/20R and Runway 02R/20L is TDG 1A. Existing taxiway dimensions and FAA dimensional requirements for TDG 1A taxiways are summarized in Table 26.

Table 26: Taxiway Design Requirements

Taxiway Data								
	Taxiway Width		Shoulder		Taxiway Safety Area		Taxiway Object Free Area	
	Existing	TDG A1 Standard	Existing	TDG A1 Standard	Existing	TDG A1 Standard	Existing	TDG A1 Standard
A	50'	25'	10'	10'	79'	49'	131'	89'
B	50'	25'	10'	10'	79'	49'	131'	89'
C	50'	25'	10'	10'	79'	49'	131'	89'
D	50'	25'	10'	10'	79'	49'	131'	89'
E	50'	25'	10'	10'	79'	49'	131'	89'
G	50'	25'	10'	10'	79'	49'	131'	89'

TDG 1A requires taxiways to be a minimum of 25 feet wide with 10-foot shoulders. Parallel Taxiway B and connecting Taxiways C, D, E, and G have a paved width of 50 feet and 10-foot shoulders. Parallel Taxiway A is also 50 feet wide with 10-foot shoulders. Taxiway A is located in line with Runway 02R/20L. The 745-foot-long section of the taxiway north of the runway is paved, while the 1,360-foot-long section of the taxiway south of the runway is surfaced with gravel. The centerlines of Taxiway A and Taxiway B are 200 feet and 300 feet from the centerlines of Runway 02L/20R, respectively, which meets the minimum separation distance of 125 feet for A-I (utility) runways. There is an additional 50-foot apron buffer zone between the western edge of Taxiway B and the eastern edge of the Transient Apron and West Apron lease lots.

Runway 02L/20R has four right-angle exit taxiways that connect the runway to both parallel taxiways on the east and the west. Taxiway C is located at the 20R threshold; Taxiway G is located at the 02L threshold; Taxiway E is located at the midpoint of the runway, and Taxiway D is located 2,685 feet north of the threshold for Runway 02L.

The placement of exit taxiways are arranged to reduce the time that aircraft need to remain on the runway after a landing. The placement of Taxiway D at midfield and Taxiway E at 2,685 feet from the Runway 02L threshold support the exit of 99% of small aircraft from Runway 02L in dry conditions and 84% in wet conditions (FAA, 2014). New Taxiway F needs to be constructed north of the Runway 02L threshold, as indicated on the latest ALP, to provide the same level of exit options for aircraft landing on Runway 20R.

4.1.6 Aprons and Aircraft Parking

Public-use aprons are designed to meet the design criteria of A-I (utility) aircraft. There are 119 GA tie-down spaces currently located on the Northeast and Southeast Aprons, and the current GA apron space available for based aircraft totals 81,489 square yards. During the summers, all of the existing tie-downs are occupied by pilots with tie-down permits. The DOT&PF’s Statewide Aviation Leasing office stated that there is existing demand for approximately 20 additional tie-down spaces on the aprons, resulting in the current total demand for 139 tie-downs. Using the base growth rates used in the Aviation Activity Forecast for the 20-year planning horizon, 157 GA tie-down spaces will be needed at the airport by 2040.

FAA’s apron space planning guide recommends 755 square yards of apron space for A-I aircraft, including space for taxilanes and buffers around parked aircraft. The current apron layout provides approximately 685 square yards of available apron space per tie-down space. When allotting 755

square yards for each of the 139 based tie-down spaces needed, there currently is demand for 104,945 square yards of GA apron space at Birchwood Airport, or 23,456 square yards more than is currently available.

Using the forecasted projected growth, there is an estimated need for 118,535 square yards of apron space in 2040, which would require the development of 37,046 square yards of a new apron area. New aprons should continue to be laid out to accommodate use by A-I (utility) GA aircraft to meet the current and forecasted demand. Users requested that the majority of the new tie-downs be installed facing the mountains to reduce the potential for damage from the strong winds out of the south.

The Alaska Air Carriers Association provided public comment stating that parking for some larger aircraft is needed on the existing aprons. Also, glider operators expressed the need for larger glider parking spots. To address this need, a limited number of large aircraft parking spaces (7 to 10) is recommended for any new alternatives considered to extend the Northeast Apron.

In interviews, several airport tenants expressed a need for power supply by the tie-downs for the connection of head bolt heaters. Some tie-downs at nearby municipal GA airports (Merrill Field and Wasilla Municipal Airport) have access to dedicated power outlets, and these tie-downs are very popular, especially among pilots that fly year-round.

The Transient Apron is located midfield on the west side of Runway 02L/20R and contains seven 25-foot by 20-foot tie-downs for transient pilots. The apron currently consists of 31,640 square feet (3,515 square yards) of parking spaces and taxilanes. Guidance from FAA AC 150/5300-13B and the Airport Cooperative Research Program (ACRP) “Guidebook on General Aviation Facility Planning” identifies two methods to determine the need for transient apron space: (1) by number of based aircraft or (2) by number of annual operations. With the annual operations being based on relatively short windows of recorded data, the based aircraft method was used to calculate the need for transient aircraft parking. The guidance considers the size of the airport (small/medium GA airport or reliever/busy reliever airport) and assumes that a medium GA airport would have an estimated 350 operations per based aircraft. The guidance also recommends 755 square yards of apron space for each tie-down, including space for taxilanes.

Considering the current 308 based aircraft, there is a current need for 15 tie-downs dedicated to transient pilots. Using the recommended 755 square yards of apron space for each A-I aircraft tie-down, there is a current need for 11,325 square yards of transient apron area, or 7,810 square yards more than is currently available. There is a forecasted need for 17 tie-downs dedicated to transient pilots in 2040. This would require 12,752 square yards of available apron area and would require an apron expansion of approximately 9,237 square yards.

4.1.7 Lighting, Markings, and Signage

Pavement markings on all runways, taxiways, and aprons are standard, with the exception of Runway 02L/20R, which is a visual runway but is marked for a non-precision approach. A runway marked with non-precision approach markings includes touchdown zone and aiming point markings that are not included in visual runways. Marking Runway 02L/20R with non-precision exceeds the requirements of FAA AC 150/5340-1L Standards for Airport Markings used for visual

runways and enhances the sight picture for pilots. The markings should be refreshed, but no changes to the runway markings are recommended.

The northern 600 feet of Runway 02L/20R is paved and contains visual runway markings. These markings include a threshold bar, runway designator, runway centerline, and runway edge markings. These markings are appropriate for the visual runway, and no changes to the pavement markings are recommended. The Runway 02R/20L threshold markers and edge markers, as well as the edge markers on the gravel portion of Taxiway A, are old and faded. Brush and vegetation need to be cleared away from the markings, and the markers should be replaced.

The Runway 02/20 designation markings should also be replaced with Runway 03/21 designation markings around 2027 if the magnetic drift continues at its current rate. Also, Runway 20L designation on the paved portion of the gravel runway should be replaced with 21G.

In the ultimate configuration, removal of the paved portion of Runway 03G/21G is recommended to provide the full length available for gravel and ski operations.

All Runway 02L/20R taxiway intersections are properly marked with lighted intersection signs at the hold. Future improvements to Runway 02R/20L should include sign upgrades to clearly designate Taxiway A and distinguish the taxiway from the runway.

The existing medium-intensity edge lights are appropriate for operations on Runway 02L/20R. Edge lighting is white, signifying a visual approach runway. The lighting at Birchwood Airport is nearing the end of its useful life, and the constant current regulators are reportedly undersized for the existing electrical load.

Runway 20R is equipped with VASI, owned and maintained by DOT&PF. Some users expressed a desire to install a VASI or PAPI on Runway 02L. A visual aid would improve the safety of pilots arriving on this short approach, as the restricted airspace south of the airport limits the distance available to pilots to line up for landing. The airfield lighting upgrade project should include the construction of PAPIs for Runway 02L and replacing the Runway 20R VASIs with PAPIs.

The existing primary wind cone and rotating beacon are properly located and appropriate for the current service conditions at the airport.

4.1.8 Other Airside Facilities

4.1.8.1 Floatplane Facilities

Although a desire for floatplane facilities was mentioned in the previous Airport Master Plan, the need was not identified during this Master Plan Update. The demand for floatplane facilities in the Anchorage area was evaluated in the Anchorage Area General Aviation System Plan (Aries Consultants Ltd., 2004). The report identified a possible future need for a new float plane facility in the Anchorage Bowl. Multiple sites, including Birchwood Airport, were evaluated in the study.

The report noted that instrument procedures for approach from the south were unlikely due to close proximity to the U.S. Army Fort Richardson restricted area R-2203B and terrain to the south and southeast of the airport. The report identified two preferred locations north of Birchwood Airport: the Eklutna gravel pit and Eklutna flats. These two sites were further evaluated in an Economic Feasibility Study (Northern Economics Inc., 2008), which identified a high level of interest but

found that the development of a new floatplane facility was not economically feasible at the time. Therefore, it is recommended that the airport defer any further planning for a floatplane facility until a clear purpose and need can be demonstrated.

4.1.8.2 Ski-Plane Facilities

There are several small aircraft at Birchwood Airport that convert to ski operations during the winter. Currently, these aircraft are based out of the Southeast Apron and operate on Runway 02R/20L. Both the Southeast Apron and Runway 02R/20L are kept covered in snow during the winter. Future Runway 02R/20L improvements should continue to accommodate ski-equipped aircraft.

The airside demand capacity analysis shows that a parallel runway is not justified based on demand, and Runway 02L/20R has sufficient capacity to meet the current and forecasted demand for the airport. However, Runway 02L/20R is paved, the snow is cleared regularly, and it cannot accommodate ski-equipped aircraft.

In March and April 2023, additional G.A.R.D aircraft counts were conducted to estimate the level of activity on gravel/ski Runway 02R/20L while the runway was snow-covered. Extrapolating the trends from the G.A.R.D. data resulted in a total estimate of 723 operations by ski-equipped aircraft annually. If this level of use by ski-equipped aircraft on Runway 02L/20R meets the AC 150/5000-17 definition of regular use, the ski-equipped A-I (utility) aircraft (such as Cessna 180) is considered the critical aircraft for this runway.

4.1.9 Airfield Land Use

FAA grant assurances require that airport sponsors secure land ownership rights to the airport and ownership or avigation easement rights to control the airspace over the RPZs to ensure safe operations during landings and take-offs. The existing airport property is owned by the State of Alaska and bounded by land owned by ARRC, Eklutna, Inc., and private lands. An avigation easement has been secured from Eklutna, Inc. for the portion of the RPZ prior to the landing threshold for Runway 02L that falls outside the airport boundary. A 40-foot section of the RSA prior to the threshold of Runway 02L also lies outside of airport property, within the existing avigation easement. An avigation easement was also acquired from the Izaak Walton League for the portion of the RPZ prior to the landing threshold for Runway 20R that falls outside airport property.

Future land acquisition within the RPZs and south of the current airport boundary is highly recommended to provide areas for tie-down apron and lease lot expansion. Currently, the public tie-down areas and lease lots are occupied, and there is no room on airport property to accommodate the demand for aircraft parking and lease space. Suggested airport expansion areas are shown in the Alternatives section. At a minimum, the 40-foot section of the Runway 02L/20R RSA that falls outside of airport property needs to be acquired, and the existing perimeter fence needs to be removed from the RSA and OFA.

Eklutna, Inc. owns a total of 660 acres south of the airport that is best suited to accommodate airport expansion. That land is divided into many different parcels. A tract of nearly 65 acres, owned by Eklutna, Inc., is directly south of the airport boundary and is, therefore, the most feasible

opportunity for expansion. Approximately 36 acres of this tract is zoned as Light Industrial, which matches the current zoning of the airport property. The remainder of Eklutna, Inc.'s land to the south is zoned as Rural Residential. Airport expansion into these lands would require review and action by the MOA Zoning and Platting Board, and possibly the MOA Zoning Board of Examiners and Appeals, to change the zoning to Light Industrial for the proposed development. Eklutna, Inc. does not desire to sell their property but has expressed interest in developing their lands to support airport growth.

Additional, aviation easements are also recommended beyond the limits of the Runway 03R/21L RPZ to allow for removal of trees in those areas that penetrate the approach surfaces.

4.2 Airspace

4.2.1 Air Traffic Patterns

Parallel runways 02L/20R and 02R/20L are separated by 200 feet. Per FAA AC 150/5300-13A Paragraph 316a, simultaneous operations are prohibited on visual, parallel runways that are spaced less than 700 feet apart (FAA, 2014). FAA performed an airspace analysis of this condition at Birchwood Airport in 1998 and verified that simultaneous operations on the two runways cannot be performed safely and are not permitted (Zettler, 2021). The FAA's Alaska Chart Supplement includes published language that expressly prohibits simultaneous operations and a remark that "no parallel ops are allowed" (FAA, 2020b). Therefore, both runways are operated as a single runway and use the same traffic pattern. However, the non-standard 200-foot runway separation, as well as the 02L/20R and 02R/20L runway designations, creates the potential to confuse pilots that are not familiar with the airport, and occasional simultaneous operations have been reported that present serious safety risks.

Public comments generally expressed a desire to maintain the current traffic patterns at the airport, and no changes to the existing patterns are recommended.

As shown in Figure 14, the training grounds for U.S. Army Fort Richardson are located south of Birchwood Airport. The airspace above the training grounds is a restricted area, R-2203B, to exclude all aircraft that are not participating in the military exercises. The R-2203B airspace restriction is not anticipated to change within the planning horizon. The small aircraft that regularly use the Birchwood Airport can operate within the existing traffic pattern that avoids the restricted airspace and no changes are recommended.

4.2.2 Approach and Departure Procedures

Aircraft arriving and departing Birchwood Airport generally follow the same routes, as noted below.

- From Anchorage: Cruise at 1,500 to 2,000 feet between the Glenn Highway and the Chugach Mountains to Fire Lake and to Chugiak High School, then head directly to the airfield to cross the runway, midfield, at 1,000 feet and enter either pattern depending on the wind.
- From Wasilla: Fly across Knik Arm from the west and make a standard 45-degree entry into the downwind leg of either pattern.

- From Palmer: Fly along the south shore of Knik Arm and make a standard 45-degree entry into the downwind leg of either pattern.

Currently, there are no instrument approaches or departures published for Birchwood Airport, and all operations are conducted under the FAA's VFR. Minor interest in establishing instrument approaches to Runway 02L/20R was expressed during the public comment period. However, overwhelming public feedback gathered expressed a desire to maintain the airport's primary objective to serve the GA community and to avoid making changes that encourage the use of larger aircraft for commercial activities. The 5-mile final leg of approach from the south is not possible due to the restricted airspace used by the U.S. Army Fort Richardson. Likewise, the presence of the restricted airspace makes a missed approach procedure from the north problematic.

Therefore, the implementation of straight-in instrument approaches with vertical guidance will be challenging at the Birchwood Airport. However, implementing a non-precision instrument approach with a 1-mile visibility minimum from north will increase safety for the GA community with minimal impacts to the airport environment. The DOT&PF should enter discussions with the FAA about the development of this approach and implement the approach in the ultimate layout if the FAA determines it to be feasible.

4.2.3 Navigation Aids

The weather station is located within 500 feet of nearby hangars, which does not meet FAA siting criteria for wind sensors (FAA, 2017a). However, the weather station is located in one of the most unobstructed locations on the existing airport property, and discrepancies between reported and observed wind directions or speeds have not been identified. Relocation of the weather station is not recommended until additional airport property is acquired to meet the siting criteria required. If additional airport property is acquired, the weather station should be relocated to meet the FAA-recommended siting criteria.

4.3 Landside

4.3.1 Lease Lots and Buildings

There are 67 lease lots at Birchwood Airport (DOT&PF, 2020b), and five of these lots are occupied by FAA or DOT&PF for airport services. As of July 2020, all lease lots are occupied. There is no land available on the airport property to meet the projected need for lease lot development. Therefore, the acquisition of additional airport property is necessary to accommodate the existing and forecasted demand.

The DOT&PF Aviation Leasing Office indicated that they receive approximately 24 inquiries each year for lease space at Birchwood Airport that they have to deny due to a lack of available space. Conservatively assuming that only 20% of these inquiries would actually result in a new lease if space was currently available, there is estimated to be a current demand for approximately five additional lease lots each year.

The demand for additional lease lots would likely reduce over time as new lots were developed after the pent-up demand was met. Using a linear declining projection over 10 years, a need for 25 additional lease lots is projected for the next 10-year period, after which growth will follow the

growth trends of the approved forecast. As the number of based GA aircraft forecasted on the airport increases, additional GA lease lot development will be required. If the ratio of based aircraft to occupied lease lots remains steady in the future and based aircraft increases as projected from 308 to 340, then approximately 10 additional lease lots will be required to accommodate the growth. Based on these considerations, an additional 35 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 Birchwood Airport, with the smallest lots measuring about 4,000 square feet and the largest lots being close to two acres. The preferred lease lot size provides a 50-foot building set back from the taxi lane or apron with 100 feet by 150 feet buildable space. Assuming that new lease lots would range between a half-acre to three-quarters of an acre in size, between 18 to 26 acres of new lease lot space needs to be provided to meet the forecasted demand.

4.3.2 Terminal, Fixed Based Operations, and Fuel Facilities

Birchwood Airport Association maintains a small flight planning facility (pilot briefing shelter) along the west edge of the Transient Apron. The facility was constructed with a state legislative grant and is marked with an identification tag that reads “State of Alaska Sub-Location 4047.” The facility is owned by DOT&PF but is currently maintained by volunteers who clean and restock the building and perform general upkeep.

There is a phone in the building and a public restroom available to the aviation community. The septic system was reportedly reconstructed by DOT&PF in 2021. The flight planning facility is popular among users and provides a valuable asset to transient pilots and pilots based at the airfield. Birchwood Airport does not have any other terminal facilities available, and the development of an additional DOT&PF-owned and maintained terminal facility is not warranted for the current or forecasted use. However, users strongly expressed a desire for public restrooms at the GA aprons. Portable restroom facilities should be installed and maintained at new vehicle parking areas to meet this need.

The single aircraft fueling station at the airport is privately owned and operated. The need for additional fueling stations or fuel storage has not been identified.

4.3.3 Surface Access and Parking

Access to the west side of the airport from Birchwood Spur Road is adequate via existing roads. However, Birchwood Spur Road also provides access to Birchwood Recreational Shooting Park and the Ted R. Smith Tactical Training Facility for Law Enforcement. Because of the shared use, Birchwood Spur Road is not eligible to receive FAA AIP grant funding for airport access road improvements (FAA, 2019b). Maintenance and improvements to this road have to be funded by the State of Alaska or by the use of other grant funding sources.

There is no direct access around the south end of the airport between the Southeast Apron and the West Apron. Users expressed a desire to establish an access road on the south end of the airport to alleviate pedestrian and vehicle incursions across the active runways. The existing property constraints on the south end of the airport do not provide sufficient room for the construction of a new access road outside the RSA and below the approach to Runway 02L/20R. Alternatives that

consider expanding the airport property to the east should also consider the continuation of the Southeast Apron Road around the south end of the runways, connecting to the terminus of Birchwood Spur Road. The road extension would need to be located outside of the Runway 02L/20R RSA and constructed at a height such that a 15-foot object would not present an obstruction to the approach.

Parking is adequate on existing lease lots for lease lot businesses and activities. There are currently three public parking spaces available next to the flight planning facility west of the Transient Apron. Parking in this area is reportedly sufficient to meet the current demand for the Transient Apron. Without a terminal building, there is no need for terminal area parking facilities.

Tie-down holders currently park their vehicles in their tie-down spaces or along the perimeter of the Northeast and Southeast Aprons. Southeast Apron tie-down holders have expressed concern that vehicular traffic on the apron causes rutting during winter conditions. Users have expressed a desire to establish designated public vehicle parking areas at each apron.

ACRP recommends that one parking space be provided for every other tie-down space (ACRP, 2012). Future apron improvements should include the construction of approximately 40 short-term vehicle parking spots adjacent to the Northeast Apron and 20 short-term vehicle parking spots adjacent to the Southeast Apron to accommodate existing tie-down holder vehicle parking needs. Per MOA regulation 21.45.080 Off Street Parking, at least one parking space near each apron should be handicap van accessible. An additional parking spot near the Northeast Apron should be available for handicapped car parking. Development and expansion of vehicle parking areas should be included in alternatives for new apron construction.

4.3.4 Utilities

The existing utility services include electrical power, natural gas, and telephone services. No municipal water or collection of wastewater is available. Onsite wells and septic facilities are utilized for water and wastewater disposal and are permitted through the MOA Development Services Division. Utilities are sufficient to meet the current demand at the airport.

If electrical outlets are installed at tie-downs, and as the airport expands into new property or adds buildings on existing airport property, utilities will need to be extended. Particularly, additional utility extensions may be needed along the south side of the airport as new property is acquired and new aprons and lease lots are developed. The additional electrical demand will need to be coordinated with Matanuska Electric Association for new underground services. Copper and FO telecommunication service extensions will need to be coordinated with Matanuska Telephone Association to connect to one of the two existing feeders. Extension of Enstar's existing 2-inch natural gas main is anticipated to be required to meet the demand of any new facilities. Onsite wells and septic facilities will continue to be necessary to service new construction.

Municipal solid waste collection is not available at the airport, and leaseholders make their own arrangements for the collection and disposal of solid waste and hazardous materials. There are no reports of any issues with the disposal of solid waste and hazardous materials at the airport.

4.3.5 Fencing and Security

The airport has approximately 12,500 feet of perimeter chain link fence and eight vehicle gates. The 5-foot perimeter fence located 200 feet south of the Runway 02L/20R threshold needs to be removed and relocated outside the OFA and below the approach surface. Airport users noted that there have been some reported cases of fuel theft and vandalism on the airfield. Occasionally, moose also enter the airport area through the open gates. In some areas, trees are growing through the fabric due to the gates being left open.

There are mixed feelings among users about installing motorized gates and access control devices at the access points, with the majority of public comment in support of leaving the gates uncontrolled. For this reason, installation of new electric vehicle gates with access control is not recommended, and repair of existing manually operated gates, repair of existing fence, and removal of brush and vegetation from the existing fence lines is preferred. Vegetation growth along fence lines should be removed annually.

4.3.6 Maintenance

Airport Maintenance is based out of the DOT&PF maintenance building and SREB located across the road and to the north of the Northeast Apron. This four-bay facility is shared with the Chugiak Fire Department. The facility was constructed with a State of Alaska grant that required that the Fire Department be provided two parking bays in perpetuity. The facility is adequate to house all of the airport maintenance equipment. The facility is not staffed full-time, year-round, and some users expressed a desire to have a full-time onsite DOT&PF representative available throughout the year.

Buildings for sand storage are located on the same site, adjacent to the maintenance building, and provide sufficient storage capacity for the airport's needs.

4.3.7 Snow Removal

Airport snow removal is performed by DOT&PF M&O staff that clear Runway 02L/20R, taxiways, and public areas on aprons. Lease tenants are required to perform their own snow removal and to store snow at their lease lot. A snow removal plan is posted by DOT&PF in the flight planning facility. Airport users requested that better snow removal practices be implemented to improve hangar access, especially in icy conditions.

The DOT&PF stores much of the cleared snow in the infield between the runway and taxiways. Two other snow storage sites are located on the airport. One site is located at the south of the end of Birchwood Spur Road, behind leased hangar areas; the other site is located on the east side of the airport between the Southeast and Northeast Aprons. The snow storage sites are located on airport property and pose no known environmental impacts to adjacent property owners. The DOT&PF M&O staff indicated that these sites store a sufficient volume of snow, but they are inconveniently located.

4.4 Facility Requirements Summary

The most common requests received during the planning process were to maintain the primary purpose of the airport to meet the needs of the GA community. The public comments received

strongly urged the airport to continue to operate at its existing capacity. Changes to the runway configurations, access, and availability – especially related to gravel Runway 02R/20L – were strongly discouraged. However, safety risks associated with the existing facilities need to be mitigated in order to protect users and maintain eligibility for improvements through the FAA’s AIP. See Appendix B, facility standards table, for a summary of current conditions, applicable facility standards, and deficiencies noted.

4.5 Demand-Capacity Analysis

Airfield capacity was estimated using the Airfield Capacity Spreadsheet Model (ACSM) developed with the ACRP report #79 (ACRP, 2012).

The ACSM computes airfield capacity in terms of both hourly airfield capacities and Annual Service Volume (ASV). These calculations are compared with hourly and annual demand to evaluate the need for airport development and improvement projects to meet existing and future airport activity levels. The capacity analysis was prepared using a single runway configuration, as the two runways at Birchwood Airport do not meet the 700-foot separation requirements for concurrent operations during VFR conditions (FAA, 2014).

4.5.1 Hourly Airfield Capacity

Hourly airfield capacity is an estimate of the number of operations an airport can accommodate during a given hour of the day. Hourly airfield capacity determines if an airport can accommodate the projected peak hour operations.

The hourly airfield capacity was calculated using an assumed approach speed of 62 knots for the aircraft fleet, a 1.9-nautical mile approach/approach separation, and a 1-nm arrival/departure separation. Based on recorded aircraft activity at the airport, the calculation also considers that 80% of all operations are training related touch-and-go operations. Based on these inputs, the airport is estimated to have a peak hourly airfield capacity of 100 operations and touch-and-go operations per hour during VFR conditions and zero operations during IFR conditions.

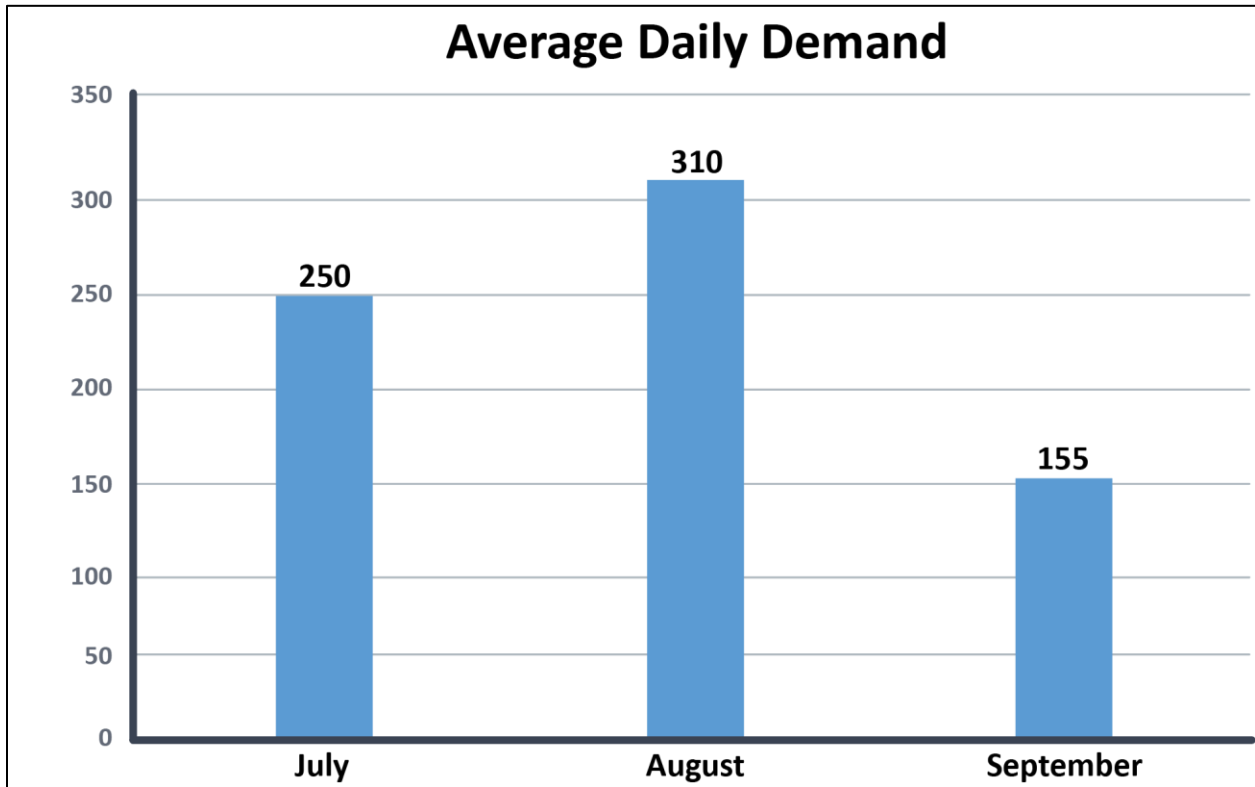
4.5.2 Annual Service Volume

The ASV is an estimate of how many aircraft operations an airport can accommodate in a single year. To calculate the ASV, the ACSM combines the hourly airfield capacity with factors of the annual demand, average peak month daily demand, and average peak hour demand.

The input values for this ASV calculation are based on recorded operations. The annual demand, average peak month daily demand, and average peak hour demand are all discussed below. The airport is estimated to have an ASV of 149,100 combined landing, take-off, and touch-and-go operations.

4.5.3 Annual Demand

The Aviation Activity Forecast used operations data to estimate average daily operations and training related touch-and-go operations for the summer and winter months (HDL, 2021). The average daily demand during the recording period is shown in Graph 2.



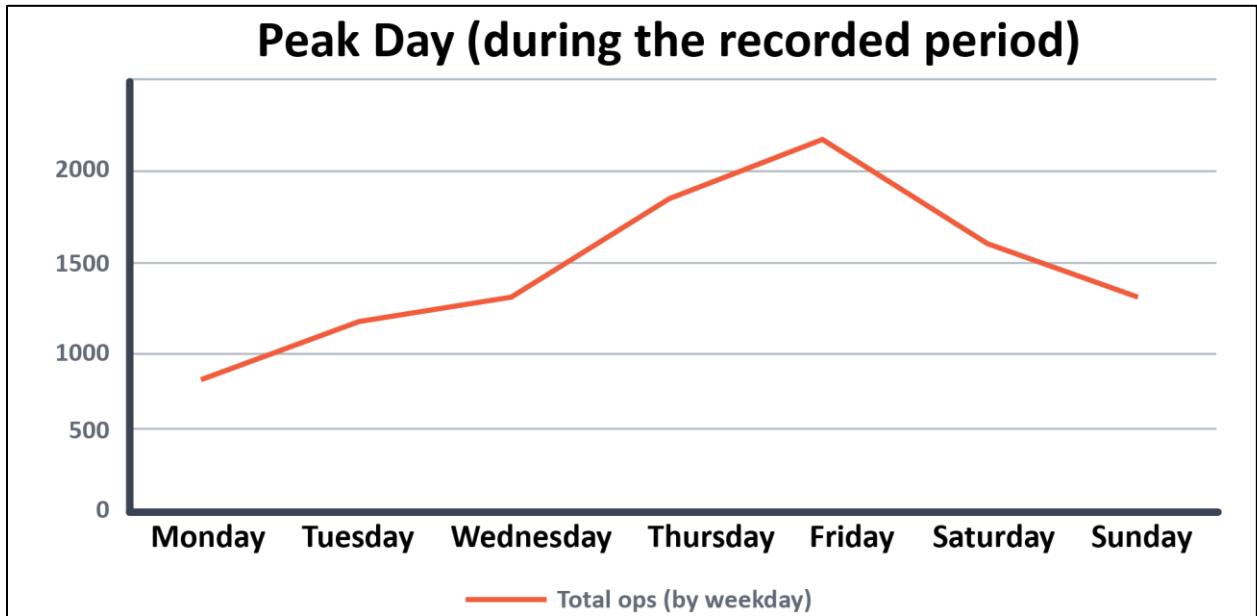
Graph 2: Average Daily Demand (Total Operations Per Day)

Using this information, the base year annual demand was estimated at 67,047 operations and training related touch-and-go operations in base year 2020. The forecasted annual demand for the year 2040 is 76,232 operations per year, including touch and goes.

4.5.4 Average Peak Month Daily Demand

As shown in Graph 2, August was the busiest month observed over the course of the recording period, with an average daily demand of 310 operations per day, including touch and goes.

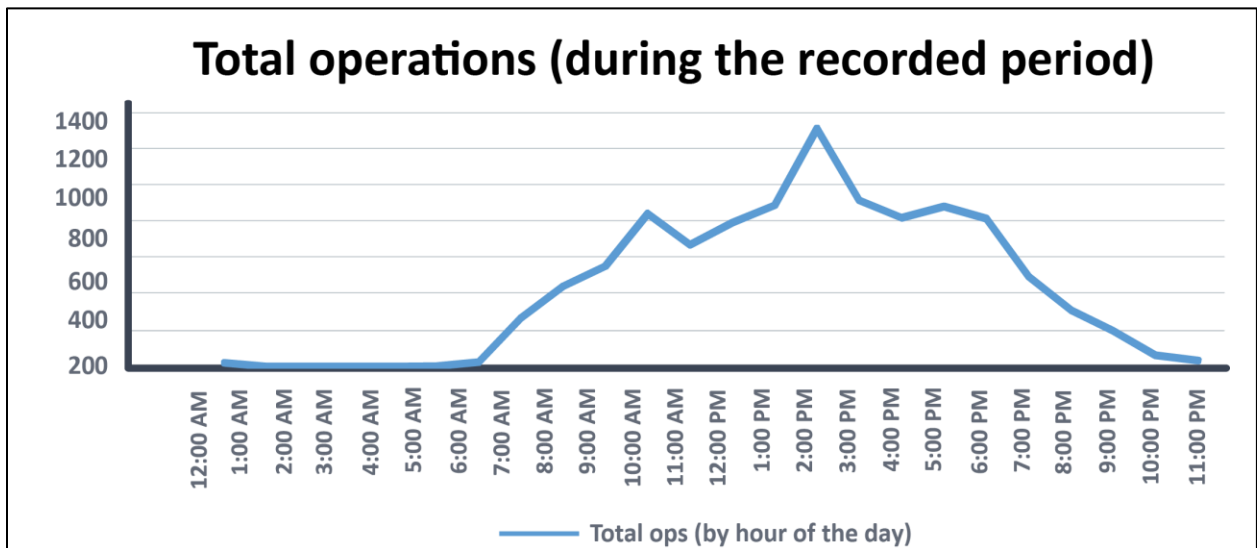
Recorded aircraft activity also fluctuated from day to day and from hour to hour. The distribution of recorded operations during the recording period is shown in Graph 4 and concludes that aviation activity at Birchwood Airport is heaviest on Fridays.



Graph 3: Peak Day of the Week

4.5.5 Average Peak Hour Demand

Peak hour aviation activity was determined by evaluating the time of day that each operation or training related touch-and-go operation was recorded during the study period. Graph 4 shows the distribution of all operations and touch-and-go operations by the hour of the day that the operation was recorded. Note that an operation occurring at 1:58 p.m. (as an example) will be recorded in the 1:00 p.m. hour.

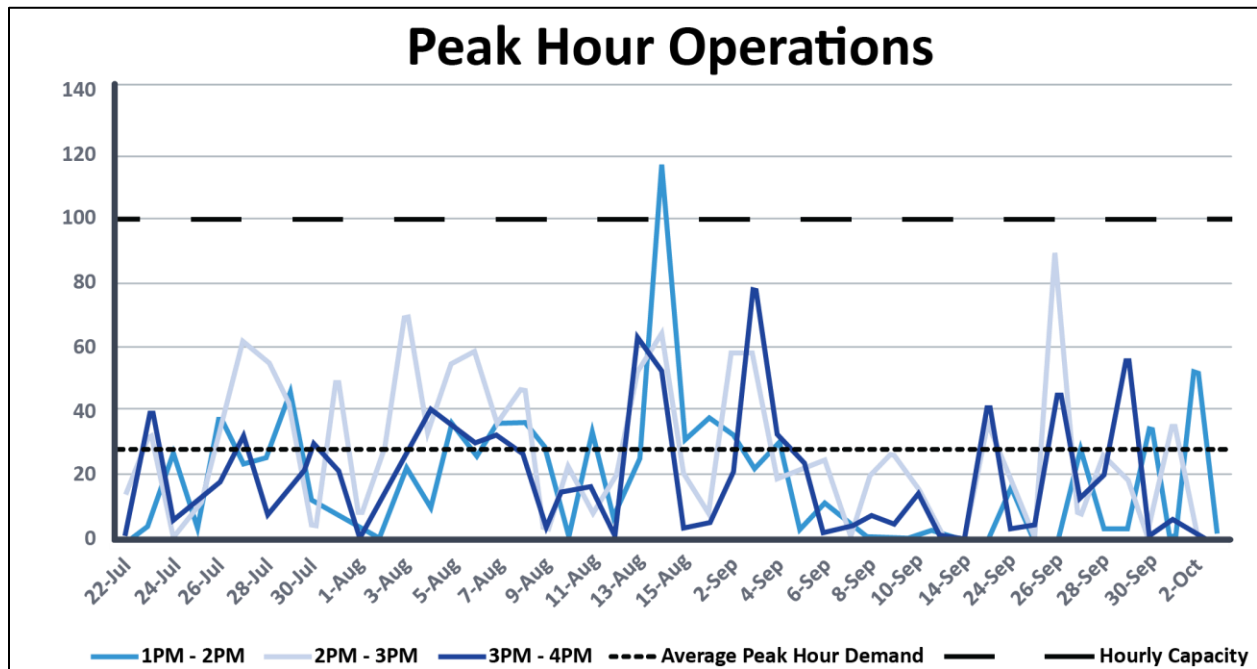


Graph 4: Peak Hours of the Day

As shown in Graph 4, the hours between 1 p.m. and 4 p.m. are the busiest during the recorded period, with the peak hour occurring between 1 p.m. and 2 p.m.

All recorded operations and training related touch-and-go operations for the hours between 1 p.m. and 4 p.m. each day are shown in Graph 5. There were multiple days when peak hour activity ranged between 40 to 60 operations and touch-and-go operations per hour.

On August 13, 2020, between 1 p.m. and 2 p.m., aircraft activity exceeded the 100 VFR operations and training operations per hour airfield capacity of the airport. However, for the days studied, this was the only occurrence when demand exceeded capacity. The average peak hour demand during the recording period was 27.4 operations per hour.



Graph 5: Peak Hour Operations and Training Related Touch-and-Go Operations

Based on an annual demand of 67,047 total operations (including touch-and-gos), an average peak month daily demand of 310 total operations (including touch-and-gos), and an average peak hour demand of 27.4 operations (including touch-and-gos), Birchwood Airport is estimated to have an ASV of approximately 149,100 combined operations and training related touch-and-go operations per year.

The airfield’s ASV exceeds the forecasted demand of 67,047 operations and touch-and-go operations per year. Also, the hourly VFR capacity of 100 operations and touch-and-go operations per hour exceeds the average daily peak hour demand of 27.4 VFR operations and tough-and-go operations per hour. Therefore, the runways at Birchwood Airport have sufficient capacity to meet the forecasted demand for the 20-year planning horizon.

5.0 ALTERNATIVES

5.1 Preliminary Alternatives

Alternatives were developed to address safety, standards, and the needs of the airport for the 20-year planning horizon. The primary needs identified at the Birchwood Airport that are represented in the alternatives outlined below include:

- Bring the airport facilities up to DOT&PF and FAA design standards
- Increase apron space to accommodate additional tie-down spaces
- Acquire property to accommodate the addition of lease areas
- Provide a safe operating environment

Based on discussions with airport users, the public, DOT&PF officials, and DOT&PF staff, four alternatives were considered to address these needs: one no build alternative and three action alternatives. Each action alternative was developed to bring the airport into compliance with FAA standards and increase safety by improving the operative environment. Each alternative presented aims to address the facility requirements and support the current and anticipated fleet mix and critical aircraft identified in the Aviation Activity Forecast for Birchwood Airport.

The alternatives are as follow:

- Alternative 1 – No Build
- Alternative 2 – Maintain Existing Gravel Runway
- Alternative 3 – Relocate Gravel Runway to Shoulder of Main Runway
- Alternative 4 – Construct New Gravel Runway

Each of the alternatives is described in detail below.

5.1.1 Alternative 1 – No Build

Alternative 1 is the ‘no build’ option. This alternative will include no changes to the current layout of the airport (Figure 18). The no build option would not mitigate any compliance issues with the FAA standards or meet the conditions and needs of the airport. Non-compliance with FAA standards adversely impacts AIP funding eligibility for future projects at the airport. Although DOT&PF can apply for modifications to standards, FAA approval may not be granted.

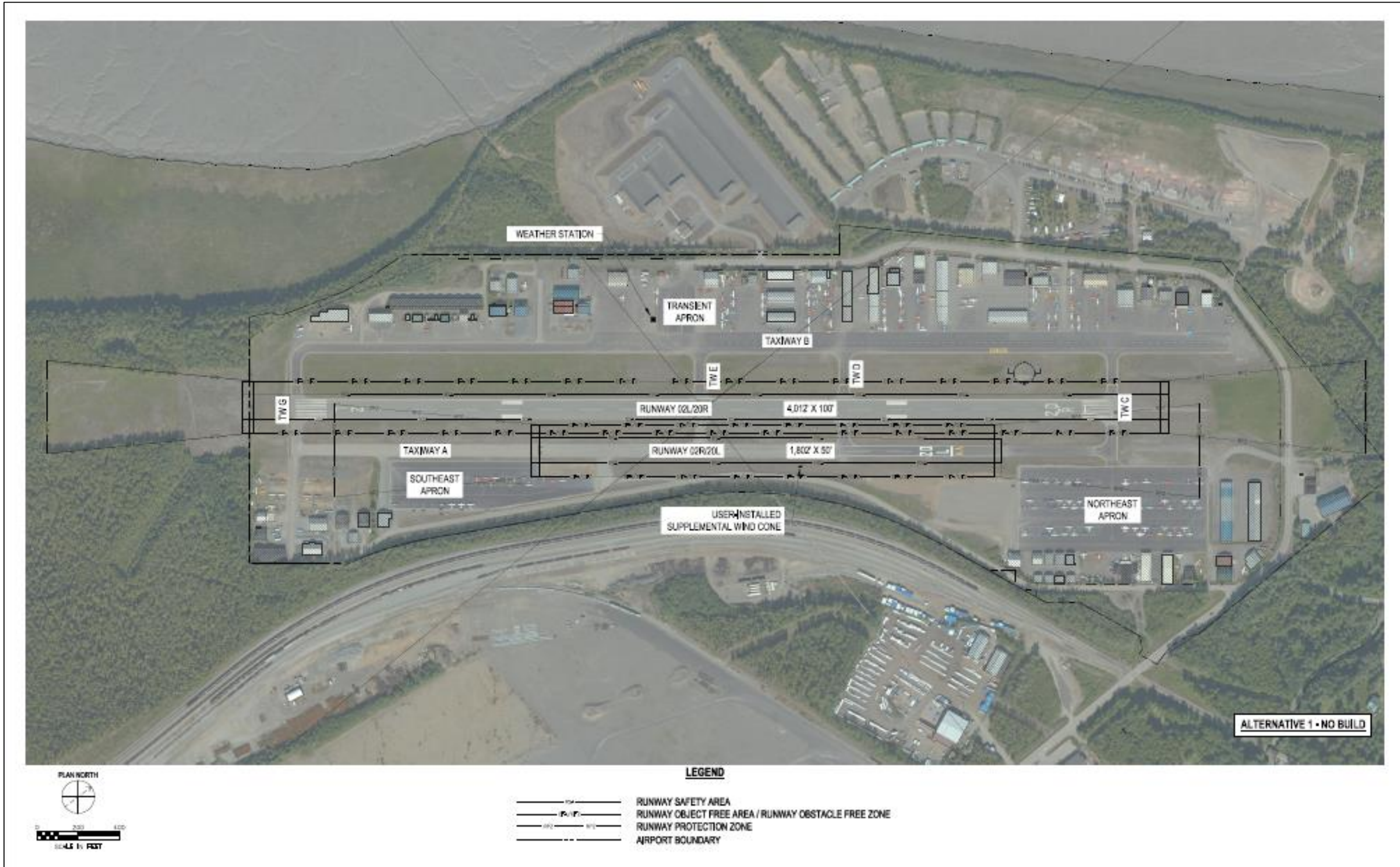


Figure 18: Alternative 1 – No Build

5.1.2 Alternative 2 – Maintain Existing Gravel Runway

Alternative 2 maintains current runway operational procedures, prioritizes removing portions of aligned Taxiway A, and maintains the gravel/ski Runway 03G/21G in its current location (Figure 19). This alternative recommends meeting the needs for additional hangar lease area and aircraft tie-downs. Property south of the airport would need to be acquired to meet those needs.

Alternative 2 consists of the following elements, which are detailed on Figure 19:

5.1.2.1 Rehabilitate Runway 03/21

Rehabilitate the runway in its current location to meet DOT&PF and FAA design standards and maintain the current dimensions preferred by existing users.

5.1.2.2 Install New PAPIs on Runway 03/21

Replace the DOT&PF-owned VASI on Runway 21 with a new four-box PAPI. VASIs are older technology, and it is increasingly difficult to maintain and find replacement parts for VASI units. VASIs are gradually being phased out of operation in airports across Alaska and are being replaced with PAPIs. The proposed PAPI would be constructed to the right of Runway 21 to allow the left side of the runway to remain free of obstructions for emergency glider operations. Per requests made by multiple users, PAPIs would also be constructed at the threshold for Runway 03.

5.1.2.3 Reconstruct Runway 03G/21G

Rehabilitate existing Runway 03G/21G in its current location to meet DOT&PF and FAA design standards. The runway would be reconstructed in its existing location with a gravel surface for the entire 1,802-foot length. The width of the reconstructed runway would be 60 feet to meet FAA standards. In addition, new runway edge and threshold markers would be installed to replace existing markers that are old and faded.

5.1.2.4 Remove Existing Parallel Taxiway A

Remove portions of Taxiway A that are in line with Runway 03G/21G to mitigate the safety hazard present between the taxiway's alignment with the 03G and 21G thresholds.

5.1.2.5 Construct Taxiway A Extension

Construct approximately 700 feet of new Taxiway A to provide airside access to the Southeast Apron to Taxiway G and from Taxiway G to new apron and lease areas.

5.1.2.6 Reconfigure Existing Connecting Taxiways

Reconfiguration of the existing connecting taxiways would require the following:

- i. Remove existing Taxiway D and construct new Taxiway D: Required to provide access to Runway 21G threshold from Taxiway B and the Northeast Apron.
- ii. Remove existing Taxiway E: Approximate mid-point taxiway is no longer needed due to the relocation of Taxiway D and the construction of new Taxiway F.
- iii. Construct new Taxiway F: Required to provide access to Runway 03G threshold and access from the Southeast Apron to Runway 03/21, Runway 03G/21G, and Taxiway B. This taxiway is shown in the ultimate configuration of the 2016 ALP.

- iv. Reconstruct Taxiway G: Required to intersect new Taxiway A location on the southeast side of Runway 03/21 and new glider plane staging/aircraft run-up area on the southwest side of Runway 03/21.

5.1.2.7 Pave Apron Area between Taxiway B and Lease Lots

Pave a 50-foot-wide section of the existing gravel area between the southern portion of Taxiway B and the lease areas directly to the west to reduce the potential of foreign object debris from aircraft moving from the lease areas onto the paved taxiway.

5.1.2.8 Construct Glider Staging / Aircraft Run-Up Area

Construct a 75-foot-wide staging/run-up area south of the intersection between Taxiway B and Taxiway G. Currently, glider staging and aircraft run-ups on Taxiway G can prevent landing aircraft from departing the runway on this taxiway. A staging/run-up area is needed at this location to allow gliders and aircraft to prepare for take-off without blocking the connecting taxiways.

5.1.2.9 Land Acquisition

To meet the needs for additional hangar lease space and tie-downs, acquire approximately 47 acres to the south and approximately 1.2 acres north of the airport boundary. The total amount of land that should be acquired is approximately 48.2 acres.

Newly acquired land south of the airport would encompass the Runway 03 RPZ, new GA Apron and access roads, and future lease lot areas (approximately 16 acres). An avigation easement currently exists for the land within the Runway 03 RPZ. Acquisition of this land is needed for airport expansion and permanent control of the land within the RPZ. Approximately 11 acres of the newly acquired property that are currently zoned as “Rural Residential,” and zoning would need to be changed to “Light Industrial” to allow for airport development in this area.

The newly acquired land to the north is within Runway 21 RPZ. An avigation easement currently exists for obstruction removal within this area. Acquisition of this land is preferred for permanent control of the land within the RPZ.

Also, acquisition of approximately 11.1 acres of new avigation easements beyond the Runway 03 RPZ and approximately 15.1 acres of new avigation easement beyond the Runway 21 RPZ would be needed to remove obstructions identified in the aeronautical survey.

If DOT&PF is unable to acquire the recommended property, some improvements recommended under this alternative will not be possible.

5.1.2.10 Expand Northeast Apron and Install Electric Outlets

Expand the Northeast Apron south to include approximately 119,000 square feet of additional paved apron area and provide 13 new tie-down spaces: six small and seven large tie-downs. Electric outlets would be installed for all tie-downs on the proposed Northeast Apron expansion area. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

5.1.2.11 Construct Summer Aircraft Tie-Down Area / Winter Snow Storage Area

Construct approximately 33,000 square feet of additional apron space south of the Northeast Apron. This new apron area would be surfaced with gravel. During the summer months, eight additional small aircraft tie-down spaces would be provided to accommodate seasonal demand for tundra tire-equipped aircraft parking. During the winter, this area would be used for snow storage by DOT&PF Maintenance.

5.1.2.12 Construct New General Aviation Apron and Install Electric Outlets

Construct an approximately 940-foot by 330-foot GA Apron that includes up to 52 small tie-downs, 10 of which would be used for transient parking. New apron development is required to meet the demand for additional tie-down spaces needed for airport-based and transient aircraft. Electric outlets would be installed for all tie downs on the proposed GA Apron. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

5.1.2.13 Develop Access to New Hangar Lease Lot Area

Access to new hangar lease lot area would include construction of taxilanes, driveways, and utility access in the new lease lot area to provide airside and landside access and extend utilities to 16 acres of land southeast of the new GA Apron for private development of aviation-related buildings and businesses.

5.1.2.14 Develop New Vehicle Parking Area with Portable Restroom Facilities

Develop vehicle parking areas by the Northeast, Southeast, and GA Aprons; install portable restroom facilities and designated parking areas to reduce the potential for conflict between aircraft and vehicles on the aprons and reduce maintenance of snow surfaces on aprons prepared for ski-equipped aircraft.

This alternative provides the following parking available at each new and existing GA Apron:

- i. Northeast Apron: a combination of 20 parallel parking spaces and 18 perpendicular parking spaces adjacent to the Southeast Apron Access Road.
- ii. South East Apron: 19 perpendicular parking spaces accessed from the Southeast Apron Access Road.
- iii. New GA Apron: 44 perpendicular parking spaces accessed from the Southeast Apron Access Road Extension.

5.1.2.15 Remove Existing Fence

Remove approximately 700 feet of perimeter fence along the south end of the existing airport property that is no longer required due to land acquisition. Fence removal includes the 5-foot-tall fence located within the Runway 03 RPZ that is currently an obstruction.

5.1.2.16 New Perimeter Fencing

Install approximately 7,500 feet of new perimeter fencing around the newly acquired airport property. New fencing is necessary to provide an enclosed perimeter to reduce wildlife incursions.

5.1.2.17 Access Road Improvements

Extend Southeast Apron Access Road to new GA Apron and lease lot area, and realign a portion of the existing access road to remain outside the Runway 03G/21G OFA/Object Free Zone (OFZ). Continue the road around the south end of Runway 03 RPZ and connect to Birchwood Spur Road on the northwest side of the airport.

Extension of the access road will provide 1.1 miles of new road for apron access and vehicle-pedestrian circulation from the southeast side to the northeast side of the airport. Users and visitors would be able to access around the south end of the airport without crossing the runways, which would mitigate runway incursions.

5.1.2.18 Relocate Weather Station

Relocate the existing weather station from its current location to a new location southwest of Taxiway G. Construct an access trail to the new weather station location. Relocate the existing weather station to the newly acquired land. The weather station would be removed from its existing location within a congested apron area and installed in a location that meets FAA citing criteria.

5.1.2.19 Install Supplemental Wind Cone

Install a supplemental wind cone on the eastern side of Runway 03G/21G that meets FAA standards and provides accurate wind information to pilots operating on the Runway 03G threshold. Remove the existing non-standard, privately owned and maintained supplemental wind cone.

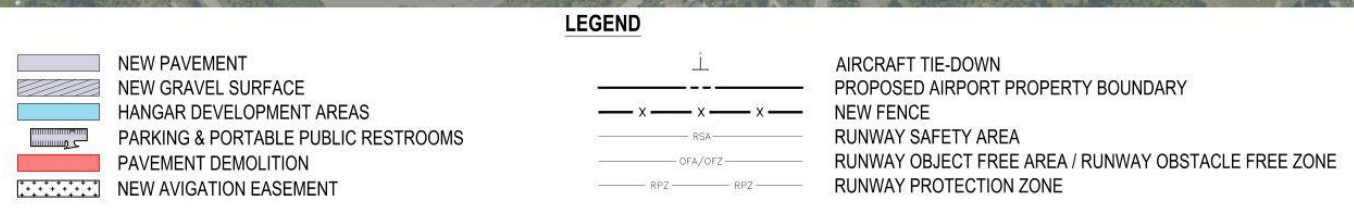
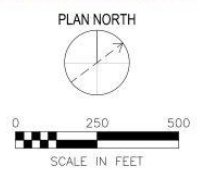
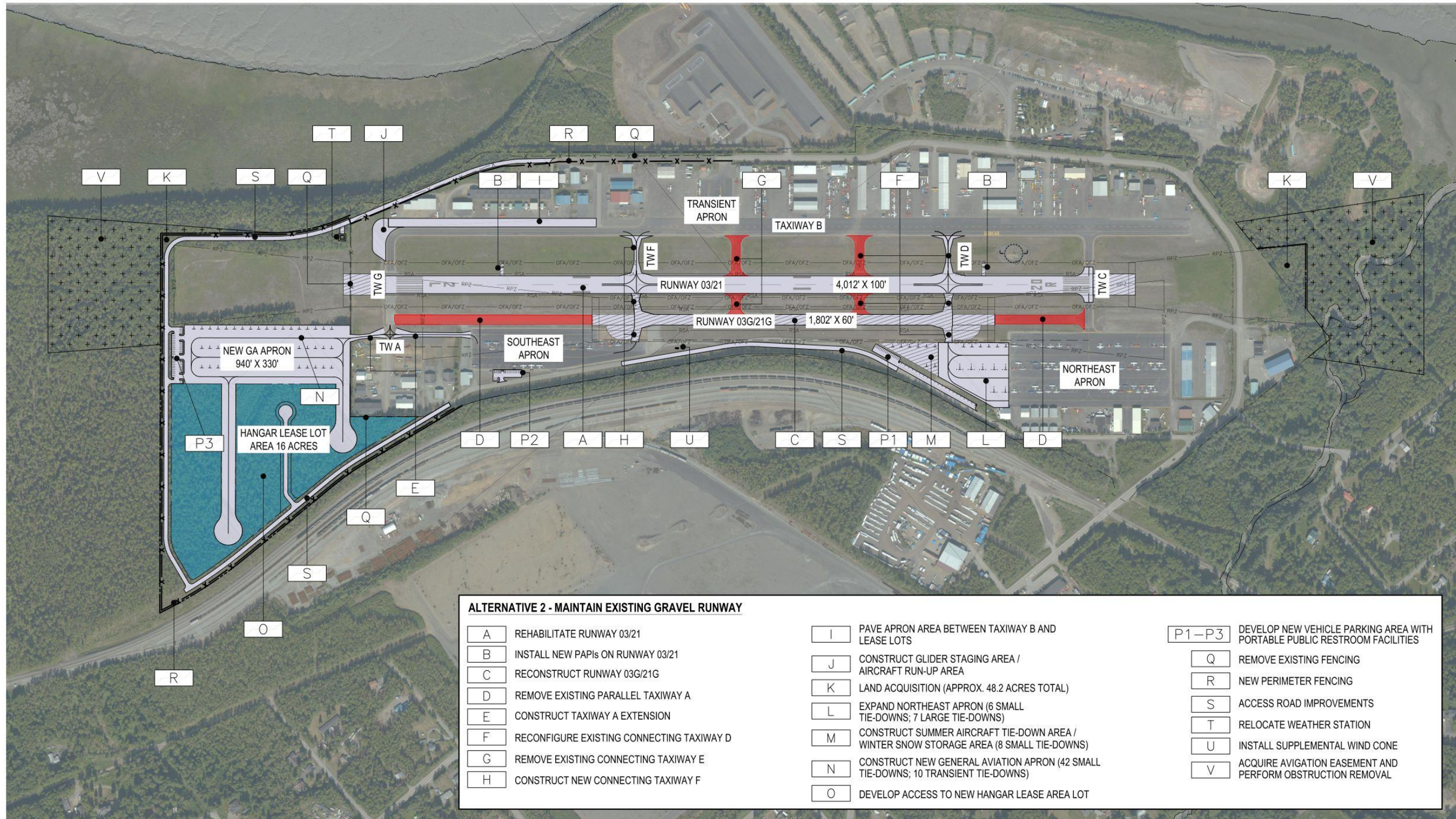


Figure 19: Alternative 2 – Maintain Existing Gravel Runway

5.1.3 Alternative 3 – Relocate Gravel Runway to Shoulder of Main Runway

Alternative 3 prioritizes establishing a parallel taxiway (Taxiway A) on the east side of Runway 03/21 to meet FAA separation requirements for runways and parallel taxiways (Figure 20). This would be accomplished by relocating the gravel/ski Runway 03G/21G to the east shoulder of Runway 03/21 and relocating Taxiway A further to the south to provide 150 feet between the gravel runway centerline and the centerline of Taxiway A. Additionally, under Alternative 3, the Southeast and Northeast Aprons would be expanded to provide additional tie-down spaces without encroaching on the Runway 03G/21G OFZ; property to the south of the airport would be acquired to meet the needs for additional hangar lease area and aircraft tie-downs.

Alternative 3 consists of the following elements, which are detailed in Figure 20:

5.1.3.1 Rehabilitate Runway 03/21

Rehabilitate the runway in its current location to meet DOT&PF and FAA design standards and maintain the current dimensions preferred by existing users, as described under Alternative 2.

5.1.3.2 Install New PAPIs on Runway 03/21

Replace the DOT&PF-owned VASI on Runway 21 with a new four-box PAPI and construct a new four-box PAPI at the threshold for Runway 03, as described in Alternative 2.

5.1.3.3 Land Acquisition

Acquire approximately 47 acres to the south and approximately 1.2 acres north of the airport boundary, for a total of approximately 48.2 acres. Also, acquire approximately 11.1 acres of new aviation easements beyond the Runway 03 RPZ and approximately 15.1 acres of new aviation easement beyond the Runway 21 RPZ. The land and easements to be acquired are the same as described in Alternative 2.

If DOT&PF is unable to acquire the recommended property, some improvements recommended under this alternative will not be possible.

5.1.3.4 Pave Apron Area between Taxiway B and Lease Lots

Pave a 50-foot-wide section of the existing gravel area between the southern portion of Taxiway B and the lease areas directly to the west, as described in Alternative 2.

5.1.3.5 Construct Glider Staging / Aircraft Run-Up Area

Construct a 75-foot-wide staging/run-up area south of the intersection between Taxiway B and Taxiway G, as described in Alternative 2.

5.1.3.6 Remove Existing Fence

Remove approximately 700 feet of perimeter fence along the south end of the existing airport property, including the 5-foot-tall fence located within the Runway 03 RPZ, as described in Alternative 2.

5.1.3.7 Access Road Improvements

Extend Southeast Apron Access Road to new GA Apron and lease lot area, and realign a portion of the existing access road to remain outside the Runway 03G/21G OFA/Object Free Zone (OFZ).

Continue the road around the south end of Runway 03 RPZ and connect to Birchwood Spur Road on the northwest side of the airport. These road improvements are the same as described in Alternative 2.

5.1.3.8 Relocate Weather Station

Relocate the existing weather station from its current location to a new location southwest of Taxiway G, as described in Alternative 2.

5.1.3.9 New Perimeter Fencing

Install approximately 7,500 feet of new perimeter fencing around the newly acquired airport property, as described in Alternative 2.

5.1.3.10 Runway 03G/21G Relocation

Relocate Runway 03G/21G to the shoulder/RSA of Runway 03/21. Construct a new 1,710-foot-long and 60-foot-wide gravel/ski runway on the east side of Runway 03/21. This does not meet FAA's requirements for separation between runways during concurrent operations. However, concurrent operations are prohibited at Birchwood Airport, and this change is expected to improve safety by making it obvious that concurrent operations are not possible.

5.1.3.11 Taxiway A Relocation

Relocate Taxiway A approximately 45 feet southeast away from its existing location to provide a full-length parallel taxiway that meets the FAA-required separation distance of 150 feet between the new location of Runway 03G/21G and Taxiway A. While this reduces the separation between Taxiway A and the Southeast and Northeast Aprons, this relocation would not result in a loss of parking at either location.

5.1.3.12 Construct Taxiway A Extension

Construct approximately 240 feet of new Taxiway from existing Taxiway G south to the new Runway 03G/21G to connect airside access from Runway 03/21 and aprons on existing airport property to new apron/lease areas constructed on new airport property.

5.1.3.13 Reconfigure Existing Connecting Taxiways

Reconfiguration of the existing connecting taxiways would require the following:

- i. Reconstruct the southeastern segment of Taxiway C: Reconstruct Taxiway C to tie into new Taxiway A and provide access from Northeast Apron to the Runway 21 threshold.
- ii. Remove the southeastern segment of Taxiway D: Remove the southeastern section of existing Taxiway D that falls within the Runway 21G RPZ such that taxiing aircraft do not create an obstruction to aircraft landing on Runway 21G or departing on Runway 03G.
- iii. Reconstruct Taxiway E: Reconstruct and extend the southeastern segment of Taxiway E to provide access to the Runway 21G threshold and intersect relocated Taxiway A. The reconstructed taxiway segment is anticipated to be primarily used by aircraft accessing and departing Runway 03G/21G and will be surfaced with gravel.
- iv. Construct a new northwest segment of Taxiway F: Required to provide access to Runway 03/21 from Taxiway B. This taxiway is shown in the ultimate configuration of the 2016 ALP.

- v. Reconstruct Taxiway G: Required to intersect the new Taxiway A location on the southeast side of Runway 03/21 and the new glider plane staging/aircraft run-up area on the northwest side of Runway 03/21.

5.1.3.14 Expand Northeast Apron

Expand the Northeast Apron to the south. Electric outlets would be installed for all tie-downs on the proposed Northeast Apron expansion area. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

The apron expansion would include approximately 128,500 square feet of additional paved apron area and would provide 15 new tie-down spaces: five small tie-downs and ten large tie-downs. The expansion under Alternative 3 also includes constructing a connecting taxiway from the proposed Taxiway A to the northwest corner of the proposed apron.

5.1.3.15 Construct Summer Aircraft Tie-Down Area / Winter Snow Storage Area

Construct approximately 30,000 square feet of additional apron space south of the Northeast Apron. This new apron area would be used for summer aircraft parking and winter snow storage, as described in Alternative 2. During the summer months, an additional five small aircraft tie-down spaces would be provided to accommodate seasonal demand for tundra tire-equipped aircraft parking.

5.1.3.16 Construct New GA Apron

The proposed GA Apron dimensions for Alternative 3 would remain similar to Alternative 2 (940 feet by 330 feet) with the exception of a 260-foot by 30-foot portion along the western edge of the apron that lies within the proposed Runway 02G RPZ. Electric outlets would be installed for all tie-downs on the proposed GA Apron. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

The area within the RPZ is not available for aircraft taxing or parking. This reduces the number of small tie-downs to 46, 10 of which would be used for transient parking.

5.1.3.17 Develop Access to New Hangar Lease Lot Area

Construct taxilanes, driveways, and utility access in the new lease lot area to provide airside and landside access and extend utilities to 15 acres southeast of the new GA Apron for private development of aviation-related buildings and businesses. The lease lot space available is reduced to 15 acres in this alternative compared to 16 acres in Alternative 2 due to the need to shift the new GA Apron to the southeast to avoid the Runway 03G/21G RPZ.

5.1.3.18 New Vehicle Parking with Portable Restroom Facilities

Develop vehicle parking areas by the Northeast, Southeast, and GA Aprons; install portable restroom facilities next to each parking area. This alternative provides the following parking available at each new and existing GA Apron:

- i. Northeast Apron: 31 parallel parking spaces adjacent to the Northeast Apron Access Road.
- ii. Southeast Apron: 19 perpendicular parking spaces accessed from the Southeast Apron Access Road.

- iii. New GA Apron: 44 perpendicular parking spaces accessed from the Southeast Access Road Extension.

5.1.3.19 Install Supplemental Wind Cone

Install supplemental wind cone on the south side of relocated Runway 03G/21G that meets FAA standards and provides accurate wind information to pilots operating on the Runway 03G threshold. Remove existing nonstandard, privately owned and maintained supplemental wind cone.

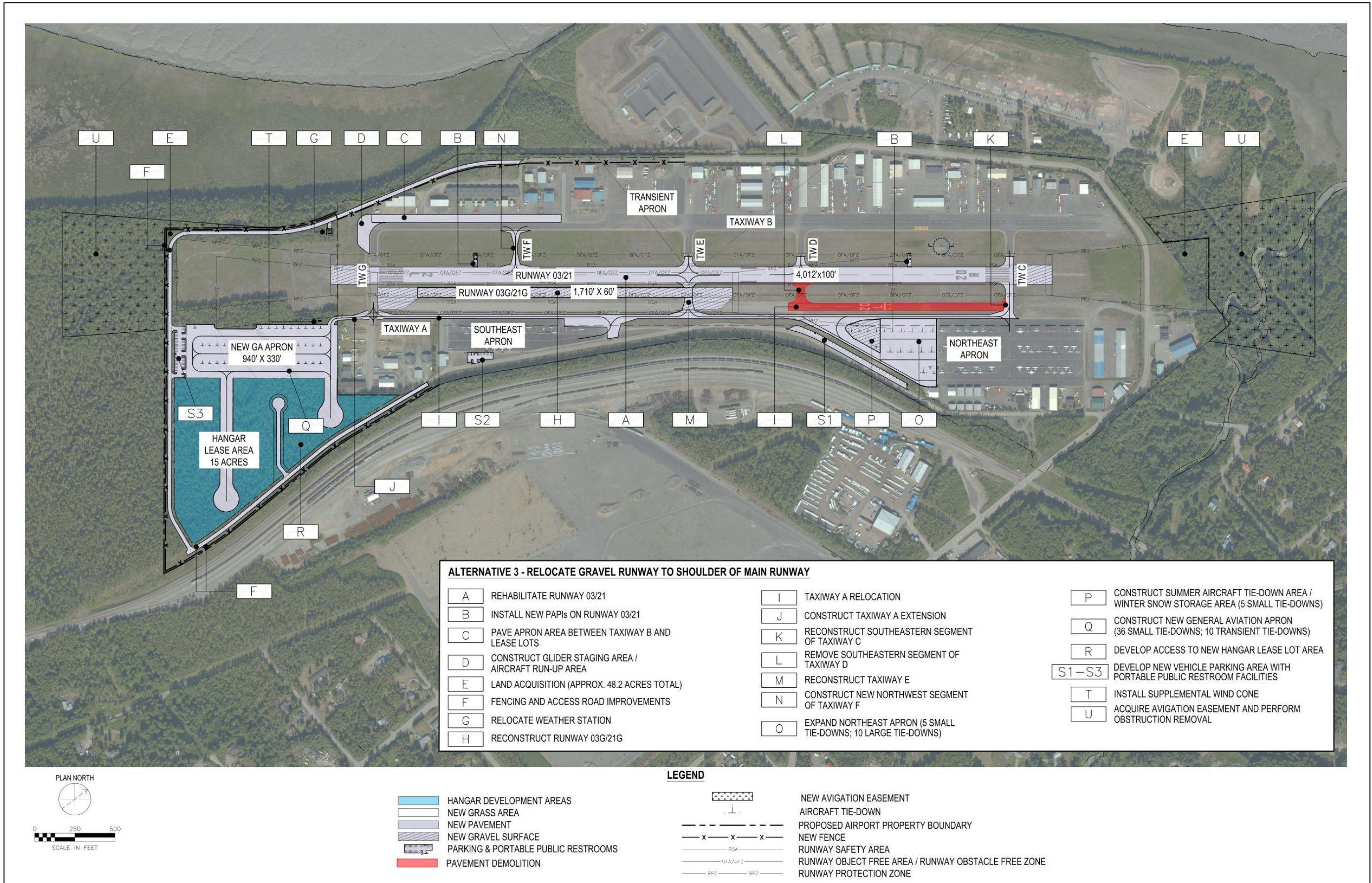


Figure 20: Alternative 3 – Relocated Gravel Runway to Shoulder of Main Runway

5.1.4 Alternative 4 – Construct New Gravel Runway

Alternative 4 relocates gravel/ski Runway 03G/21G to meet FAA’s runway separation requirements for safe and concurrent operations between two parallel runways (Figure 21). Land acquisition of additional property to the south and east would be necessary to construct this alternative and to provide proper runway separation and new RPZs for Runway 03G/21G. The acquisition of land for relocation of Runway 03G/21G would also provide the opportunity to acquire additional land in the same area for apron development and new lease areas.

Alternative 4 consists of the following elements, which are detailed in Figure 21:

5.1.4.1 Rehabilitate Runway 03/21

Rehabilitate the runway in its current location to meet DOT&PF and FAA design standards and maintain the current dimensions preferred by existing users, as described in Alternatives 2 and 3.

5.1.4.2 Install New PAPIs on Runway 03/21

Replace the DOT&PF-owned VASI on Runway 21 with a new four-box PAPI and construct a new four-box PAPI at the threshold for Runway 03, as described in Alternatives 2 and 3.

5.1.4.3 Pave Apron Area between Taxiway B and Lease Lots

Pave a 50-foot-wide section of the existing gravel area between the southern portion of Taxiway B and the lease areas directly to the west, as described in Alternatives 2 and 3.

5.1.4.4 Construct Glider Staging / Aircraft Run-Up Area

Construct a 75-foot-wide staging/run-up area south of the intersection between Taxiway B and Taxiway G, as described in Alternatives 2 and 3.

5.1.4.5 Remove Existing Fence

Remove approximately 700 feet of perimeter fence along the south end of the existing airport property, including the 5-foot-tall fence located within the Runway 03 RPZ, as described in Alternatives 2 and 3.

5.1.4.6 Relocate Weather Station

Relocate the existing weather station from its current location to a new location southwest of Taxiway G, as described in Alternatives 2 and 3.

5.1.4.7 Relocate Runway 03G/21G

Relocate Runway 03G/21G to newly acquired airport property south of the existing airport boundary to meet FAA runway separation requirements.

Construct a new 1,800-foot-long and 60-foot-wide gravel-surfaced runway for ski plane operations in the winter and tundra tire-equipped aircraft in the summer. The relocated Runway 03G/21G would be constructed to the south and east of Runway 03/21 in a location that meets FAA minimum runway separation distance requirements for parallel runways. This would allow for distinct traffic patterns and simultaneous operations on both runways.

5.1.4.8 Reconstruct Taxiway A

Reconstruct Taxiway A in its current location to provide a paved full-length parallel taxiway that meets FAA design requirements and install taxiway edge lighting.

5.1.4.9 Construct Taxiway A Extension

Construct an approximately 1,700-foot-long extension of new Taxiway A from existing Taxiway G south to the new Runway 03G/21G to connect airside access from Runway 03/21 and aprons on existing airport property to new Runway 03G/21G and apron/lease areas constructed on new airport property.

5.1.4.10 Reconfigure Existing Connecting Taxiways

Construct the following new taxiway improvements:

- i. Reconstruct southern portions of Taxiways C, D, and E: Reconstruct and pave the southeastern segment of Taxiways to provide access to Runway 03/21 from Taxiway A.
- ii. Construct new Taxiway F: Required to provide access to Runway 03/21 from Taxiway A and Taxiway B. This taxiway is shown in the ultimate configuration of the 2016 ALP.
- iii. Reconstruct Taxiway G: Required to intersect new Taxiway A location on the southeast side of Runway 03/21 and new glider plane staging/aircraft run-up area on the northwest side of Runway 03/21.

5.1.4.11 Construct New Taxiway H

Construct a new 2,060-foot long by 25-foot-wide parallel taxiway for new Runway 03G/21G on newly acquired airport property. Designate the new taxiway as “H.”

5.1.4.12 Land Acquisition

To allow for distinct traffic patterns and simultaneous operations on both runways approximately 150 acres to the south and approximately 1.2 acres north of the airport boundary would need to be acquired. The total amount of land that would need to be acquired is approximately 151.2 acres.

Newly acquired land south of the airport would encompass the Runway 03 RPZ, new Runway 03G/21G and associated RPZs, new GA Apron and access roads, and future lease lot areas (approximately 35.7 acres). Approximately 109 acres of the newly acquired property are currently zoned as “Rural Residential.” Zoning would need to be changed to “Light Industrial” to allow for airport development in this area.

As described in previous alternatives, the newly acquired land to the north is within the existing Runway 21 RPZ. Also, acquisition of approximately 11.1 acres of new aviation easements beyond the Runway 03 RPZ and approximately 12.8 acres of new aviation easement beyond the Runway 21 RPZ is recommended for obstruction removal in these areas.

If DOT&PF is unable to acquire the recommended property, some improvements recommended under this alternative will not be possible.

5.1.4.13 Expand Northeast Apron

Expand the Northeast Apron to include approximately 85,300 square feet of additional paved apron area and will provide 20 new tie-down spaces: 10 small tie-downs and 10 large tie-downs.

The expansion under Alternative 4 also includes constructing a connecting taxiway from the proposed Taxiway A to the northwest corner of the proposed apron.

Electric outlets would be installed for all tie downs on the proposed Northeast Apron expansion area. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

5.1.4.14 Construct Summer Aircraft Tie-Down Area / Winter Snow Storage Area

Construct approximately 23,500 square feet of additional apron space south of the Northeast Apron to be used for summer aircraft parking and winter snow storage, as described in Alternative 3. During the summer months, an additional four small aircraft tie-down spaces will be provided to accommodate seasonal demand for tundra tire-equipped aircraft parking.

5.1.4.15 Construct New GA Apron

Construct a 2,070-foot by 230-foot GA Apron that includes up to 72 new small aircraft tie-down spaces, 10 of which would be used for transient parking. Electric outlets would be installed for all tie-downs on the proposed GA Apron. New apron development is required to meet the demand for tie-down spaces for based and transient aircraft. The outlets would be individually metered, and the permit holder would be responsible for the utility costs.

5.1.4.16 Develop Access to New Hangar Lease Lot Area

Construct taxilanes, driveways, and utility access in the new lease lot area to provide airside and landside access and extend utilities to 34.7 acres of land southeast of the new GA Apron and 1 acre of land immediately northeast of the proposed 21G RPZ for private development of aviation-related buildings and businesses. The lease lot space available in this alternative is increased to meet the anticipated demand for aviation-related businesses.

5.1.4.17 New Vehicle Parking with Portable Restroom Facilities

Develop vehicle parking areas by the Northeast, Southeast, and new GA Aprons; install portable restroom facilities next to each parking area.

This alternative provides the following parking available at each new and existing GA Apron:

- i. Northeast Apron: a combination of 31 parallel parking spaces adjacent to the Southeast Apron Access Road.
- ii. Southeast Apron: 19 perpendicular parking spaces accessed from the Southeast Apron Access Road.
- iii. New GA Apron: 64 perpendicular parking spaces accessible from the Southeast Apron Access Road Extension.

5.1.4.18 New Perimeter Fencing

Install approximately 10,000 feet of new perimeter fencing around the newly acquired airport property to provide an enclosed perimeter to reduce wildlife incursions.

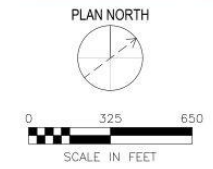
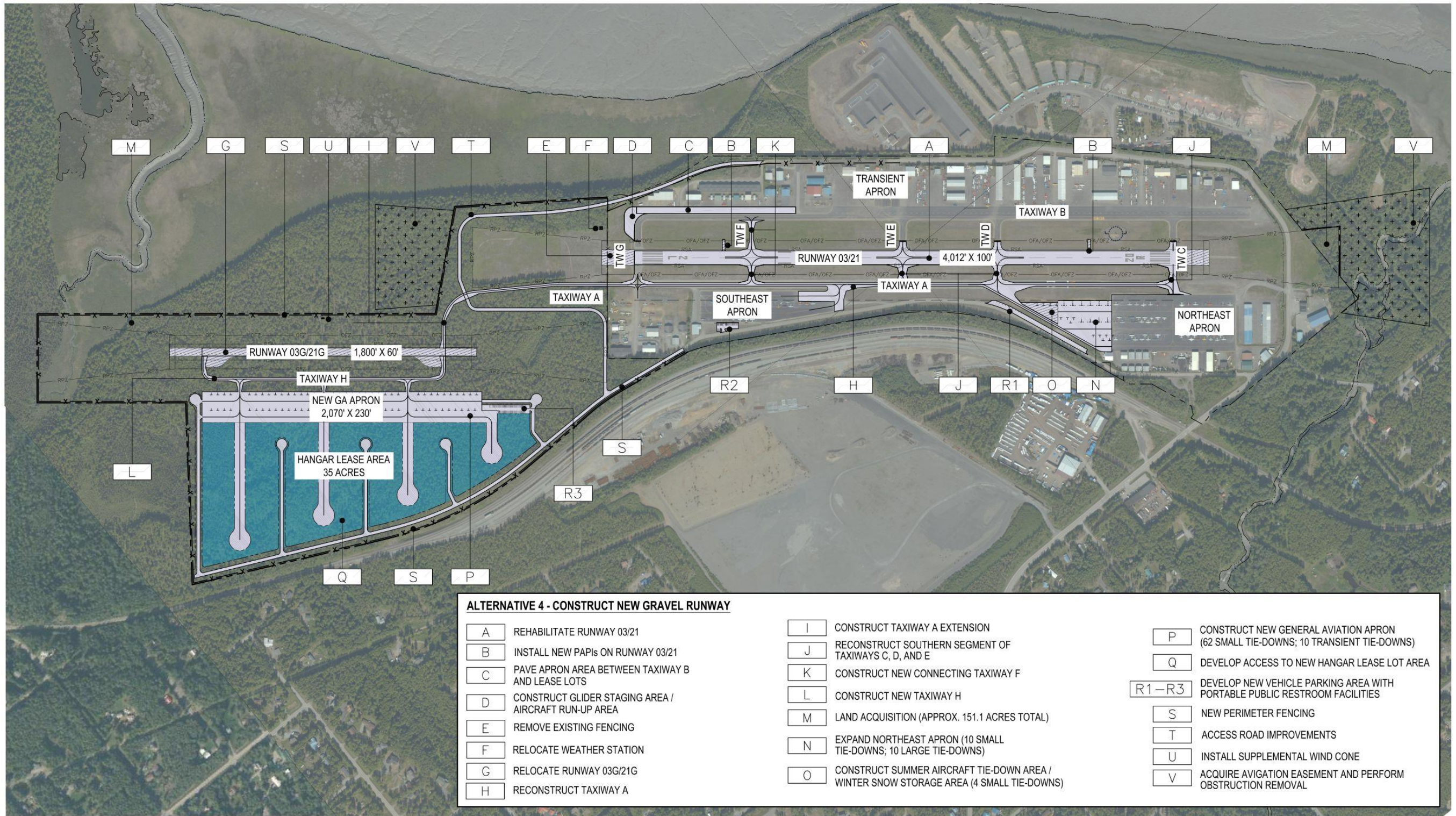
5.1.4.19 Access Road Improvements

Extend Southeast Apron Access Road to new GA Apron and lease lot area and around the southern perimeter of the Runway 03 RPZ to provide vehicle-pedestrian circulation from the southeast side to the northeast side of the airport without crossing the runways and mitigate runway incursions.

Road construction consists of 1.75 miles of new road, providing access to the new GA Apron access road and continuing around the south end of Runway 03 RPZ and connecting to Birchwood Spur Road on the northwest side of the airport.

5.1.4.20 Install Supplemental Wind Cone

Install supplemental wind cone on the northwest side of relocated Runway 03G/21G that meets FAA standards and provides accurate wind information to pilots operating on the Runway 03G threshold. Remove the existing non-standard, privately owned and maintained supplemental wind cone.



LEGEND

	HANGAR DEVELOPMENT AREAS		AIRCRAFT TIE-DOWN
	NEW GRASS AREA		PROPOSED AIRPORT PROPERTY BOUNDARY
	NEW PAVEMENT		NEW FENCE
	NEW GRAVEL SURFACE		RUNWAY SAFETY AREA
	PARKING & PORTABLE PUBLIC RESTROOMS		RUNWAY OBJECT FREE AREA / RUNWAY OBSTACLE FREE ZONE
	NEW AVIGATION EASEMENT		RUNWAY PROTECTION ZONE

Figure 21: Alternative 4 – Construct New Gravel Runway

5.1.5 Summary of Alternatives

The attributes for the ‘no build’ and each of the action alternatives are presented in Table 27.

Table 27: Alternatives Summary Matrix

Airport Components	Alternative 1 No Build	Alternative 2 Maintain Existing Gravel Runway	Alternative 3 Relocate Gravel Runway to Shoulder of Main Runway	Alternative 4 Construct New Gravel Runway
Basic Description	No changes to the current layout of the airport	Maintain current runway layout and remove existing in-line taxiways to increase safety	Relocate gravel runway to shoulder of the main runway and construct full-length parallel Taxiway A on southeast side of the airport	Relocate gravel runway to newly acquired land south of the airport to achieve parallel runway separation requirements and construct full-length Taxiway A on southeast side of main runway
Runway 03/21 Improvements	None	Rehabilitate full length and width	Rehabilitate full length and width	Rehabilitate full length and width
Runway 03G/21G Improvements	None	Reconstruct 1,802-foot by 60-foot runway in existing location	Decommission existing runway and construct new 1,710-foot by 60-foot runway on shoulder of Runway 03/21	Decommission existing runway and construct new 1,800-foot by 60-foot gravel runway on newly acquired land south of the existing airport
Taxiway A Improvements	None	Decommission existing Taxiway A to remove in-line taxiways. Reconstruct southeastern portion of Taxiway A farther to the south to maintain access from Southeast Apron to Taxiway G and extend 700 feet to southeast to provide access to new GA Apron. New sections of Taxiway A will be 25 feet wide.	Decommission existing Taxiway A. Construct new 25-foot wide, full-length, parallel Taxiway A south of existing location to meet runway taxiway separation requirements. Extend Taxiway A 700 feet to the southeast to provide access to new GA Apron.	Remove gravel runway from taxiway and reconstruct Taxiway A to provide 25-foot wide, full-length, parallel taxiway in its existing location. Extend Taxiway A 1,700 feet to the southeast to provide access to new GA Apron
Other Taxiway Improvements	None	Relocate existing connecting Taxiway D to access Runway 21G threshold; Remove existing connecting Taxiway E; Construct new connecting Taxiway F; Reconstruct segment of Taxiway G	Reconstruct southeastern segments of Taxiway C; Remove southern portion of connecting Taxiway D; Reconstruct southern segment of Taxiway E; Construct new connecting Taxiway F; Reconstruct Taxiway G	Reconstruct southern portions of Taxiways C, D, and E; Construct new connecting Taxiway F; Reconstruct connecting Taxiway G; Construct new Taxiway H

Airport Components	Alternative 1 No Build	Alternative 2 Maintain Existing Gravel Runway	Alternative 3 Relocate Gravel Runway to Shoulder of Main Runway	Alternative 4 Construct New Gravel Runway
Pave Shoulder of Taxiway B and Construct Run-Up/Glider Staging Area		Reconstruct 59,000 square feet of existing gravel apron north of Taxiway B and construct 18,500 square feet of new aircraft runway/glider staging area	Reconstruct 59,000 square feet of existing gravel apron north of Taxiway B and construct 18,500 square feet of new aircraft runway/glider staging area	Reconstruct 59,000 square feet of existing gravel apron north of Taxiway B and construct 18,500 square feet of new aircraft runway/glider staging area
Land Acquisition Required (approximate)	None	48.2 Acres & 26.2 Acres of Avigation Easement	48.2 Acres & 26.2 Acres of Avigation Easement	151.2 Acres & 23.9 Acres of Avigation Easement
Land Clearing / Obstruction Removal Areas (approximate)		2 Acres	4 Acres	34 Acres
Northeast Apron Expansion	No	Construct 119,000 square feet of apron expansion including 6 new small tie-downs and 7 new large tie-downs	Construct 128,500 square feet of apron expansion including 5 small tie-downs and 10 large tie-downs	Construct 122,800 square feet of apron expansion including 10 small tie-downs and 10 large tie-downs
Northeast Apron Summer Aircraft Parking / Winter Snow Storage Area		Construct 33,000 square feet of gravel area for snow storage in the winter, including 8 new small tie-downs for summer aircraft parking	Construct 30,000 square feet of gravel area for snow storage in the winter, including 5 new small tie-downs for summer aircraft parking	Construct 23,500 square feet of gravel area for snow storage in the winter, including 4 new small tie-downs for summer aircraft parking
New GA Apron	No	Construct 310,200 square feet of new apron including 52 new small tie-downs with electric outlets.	Construct 302,400 square feet of new apron including 46 new small tie-downs with electric outlets.	Construct 476,100 square feet of new apron including 72 new small tie-downs with electric outlets.
New Lease Lot Area Available		16 Acres	15 Acres	36 Acres
Airport User Vehicle Parking Improvements	None	<ul style="list-style-type: none"> Northeast Apron: 24,950 square feet, 38 new parking stalls Southeast Apron: 8,350 square feet, 19 new parking stalls New GA Apron: 20,050 square feet, 44 new parking stalls Total 53,350 square feet and 101 new parking stalls available with portable public restroom facilities	<ul style="list-style-type: none"> Northeast Apron: 27,600 square feet, 31 new parking stalls Southeast Apron: 8,350 square feet, 19 new parking stalls New GA Apron: 20,050 square feet, 44 new parking stalls Total 56,000 square feet and 94 new parking stalls available with portable public restroom facilities	<ul style="list-style-type: none"> Northeast Apron: 27,600 square feet, 31 new parking stalls Southeast Apron: 8,350 square feet, 19 new parking stalls New GA Apron: 20,900 square feet, 64 new parking stalls Total 56,850 square feet and 114 new parking stalls available with portable public restroom facilities

Airport Components	Alternative 1 No Build	Alternative 2 Maintain Existing Gravel Runway	Alternative 3 Relocate Gravel Runway to Shoulder of Main Runway	Alternative 4 Construct New Gravel Runway
Fencing Improvements	No	Remove 700 feet of existing fence within Runway 03 RSA and construct 7,500 feet of new perimeter fence around newly acquired southeastern property; provide unrestricted access to nearby trails. Remove brush from existing fence line that remains.	Remove 700 feet of existing fence within Runway 03 RSA and construct 7,500 feet of new perimeter fence around newly acquired southeastern property; provide unrestricted access to nearby trails. Remove brush from existing fence line that remains.	Remove 700 feet of existing fence within RW 03 RSA and construct 10,000 feet of new perimeter fence around newly acquired southeastern property; provide unrestricted access to nearby trails. Remove brush from existing fence line that remains.
Airport Access Road Improvements	No	Expand SE Apron Rd to add 1.1 miles of new roadway and provide access around perimeter of newly acquired southeastern property	Expand SE Apron Rd to add 1.1 miles of new roadway and provide access around perimeter of newly acquired southeastern property	Expand SE Apron Rd to add 1.75 miles of new roadway and provide access through newly acquired southeastern property
Impacts on NAVAIDs	None	New 4-box PAPIs for RW 03/21 approaches; new supplemental wind cone; relocate weather station	New 4-box PAPIs for RW 03/21 approaches; new supplemental wind cone; relocate weather station	New 4-box PAPIs for RW 03/21 approaches; new supplemental wind cone; relocate weather station

5.2 Other Alternatives Considered

5.2.1 Relocate Airport

The option of decommissioning the existing airport and constructing a new airport in an area with more developable land and clearer approaches was considered. However, this alternative was not deemed feasible due to the anticipated construction and right-of-way costs and because a better-suited area for airport development is unlikely to be found between Anchorage and Palmer. The Birchwood Airport is well positioned to serve the current users, has relatively few obstructions to GA operations, and has favorable wind and weather conditions.

5.2.2 Remove Gravel Runway and Reduce Main Runway Dimensions

The DOT&PF investigated an alternative that did not require land acquisition or a modification to standards to be eligible for FAA AIP funding. The alternative generally consisted of the following details:

- Reduce the length and width of the main runway to 60 feet wide by 3,350 feet long, the minimum dimension required by the ultimate critical aircraft
- Displace Runway 03 Threshold to provide standard 240-foot-long RSA and OFA prior to the runway
- Install new PAPIs on Runway 03/21
- Relocate connecting Taxiway C to match new Runway 21 threshold location (5.d)
- Remove the gravel runway to eliminate the non-standard runway separation condition and in-line taxiways (not shown for clarity)
- Reconstruct Taxiway A to provide a full-length taxiway on the southeast side of the main runway
- Reconfigure existing Taxiways D, E, and G
- Expand Southeast Apron parking to the maximum extent to provide additional tie-down spaces (5.h)
- Pave the apron area between Taxiway B and lease lots
- Construct a glider staging area/aircraft run-up area
- Expand Northeast Apron (10 small tie-downs and 10 large tie-downs)
- Construct summer aircraft tie-down area/winter snow storage area (4 tie-downs)
- Develop new parking areas with portable restroom facilities

This alternative was deemed contrary to the desires of leaseholders, tie-down holders, airport users, airport businesses, and other stakeholders. They feel strongly that the existing dimensions of the main runway and the availability of the gravel runway need to be preserved in alternatives moving forward. Preliminary alternatives that proposed reducing the length and width of the existing runway were met with strong resistance from these parties. This alternative also did not satisfy the demand for additional lease space and was determined to be contrary to the airport's development goals.

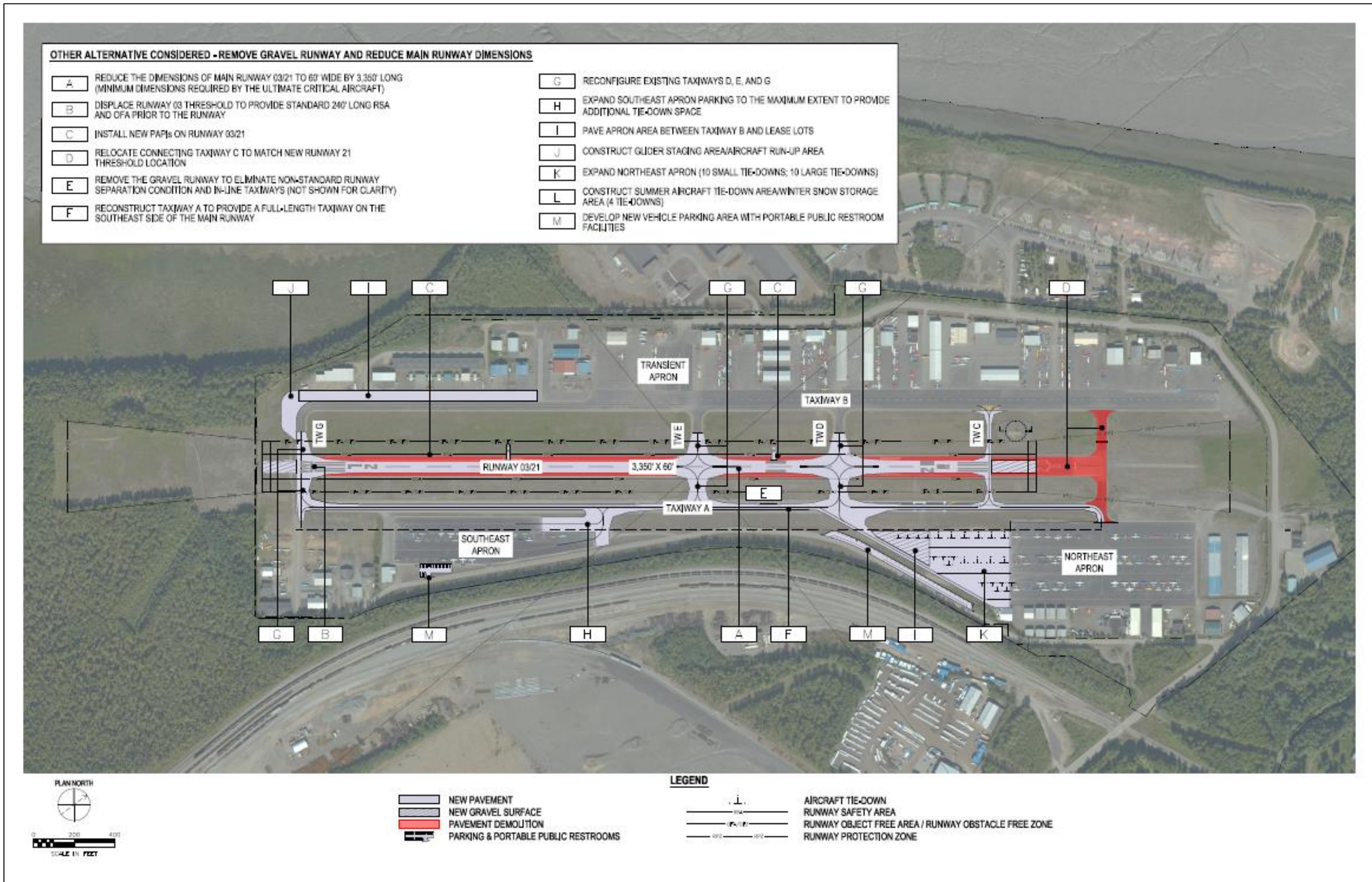


Figure 22: Other Alternatives Considered – Remove Gravel Runway and Reduce Main Runway Dimensions

5.3 Evaluation of Alternatives

Alternatives 1 through 4 were developed to address facility deficiencies and airport needs as identified by airport sponsors, maintenance staff, stakeholders, and other airport users. Each alternative was compared and evaluated against established criteria, including environmental impacts, construction costs, maintenance costs, airspace obstructions, land uses within the RPZs, meeting demand for additional lease lots, Next Generation Air Transportation System (NextGen) design and operating parameters, safety, and revenue generation.

Airport improvement projects that involve FAA funding are required to undergo the NEPA process per FAA's guidance as outlined in FAA Orders 1050.1F and 5050.4B, as well as in the FAA's Environmental Desk Reference.

While potential impacts for each alternative are described below, additional field studies will be necessary to fully understand and quantify the impacts associated with each alternative.

The FAA requires analysis of the following resources for a master plan: Historic Properties, Archeological, and Cultural Resources; Section 4(f) and 6(f) Resources; Threatened and Endangered Species; Air Quality; Anadromous Fish Streams and Essential Fish Habitat; Floodplain and Regulatory Floodway; National Marine Sanctuaries; Wilderness Areas; Farmland; State Parks, National Forests, and Wild and Scenic Rivers; Hazardous Waste; Migratory Birds and Eagles' Nests; Navigable Waters; Noise; State Refuges, National Wildlife Refuges, Critical Habitat Areas and Sanctuaries, and; Wetlands and Other Waters of the United States.

Note that the following resources are not discussed for each alternative as they are not present at the airport, nor are they in the vicinity of the airport. The vicinity is defined as the area within the airport property boundary as well as the Birchwood Community Council boundary.

- Section 4(f) and Section 6(f) resources
- Threatened and endangered species
- National marine sanctuaries
- Wilderness areas
- Farmland
- State parks, national parks, national forests, and wild and scenic rivers
- Navigable waters
- State refuges, national wildlife refuges, critical habitat areas, and sanctuaries

5.3.1 Alternative 1 Impact Analysis

Alternative 1 is the 'no build' alternative. Existing infrastructure will be maintained in its current layout, and no new improvements will be made to remove non-standard conditions or provide additional apron or lease space to meet the current demand.

Environmental Impacts

Alternative 1 does not include changes to the existing airport layout. Therefore, impacts on environmental resource categories are not anticipated.

Construction Costs

Not applicable. Alternative 1 does not include the construction of new improvements, and the proposed construction costs associated with this alternative are zero.

Maintenance Costs

Continued maintenance of existing infrastructure will be required under this alternative. Maintenance costs are anticipated to remain at or near the level of historical maintenance costs summarized in the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport.

Revenue Generation

No new tie-down and lease areas are proposed under this alternative to increase airport revenue. Revenue is anticipated to remain at or near the level of historical revenues summarized in the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport.

Airspace Obstructions

The DOT&PF should perform tree removal within the aviation easements on each runway end to remove obstructions identified in the RPZ and runway approaches.

Land Uses within the Runway RPZs

The configuration of existing Runway 02L/20R requires both RPZs to extend beyond the airport's property line. Approximately 8 acres of the RPZ for the approach to Runway 02L lies within land owned by Eklutna, Inc. Approximately 1.1 acres of the RPZ for the approach to Runway 20R lies within land privately owned by the Isaac Walton League.

Aviation and Hazard easements from both Eklutna, Inc. and the private owner are in place to perform air hazard mitigation within the RPZs. Under the terms of the easements, trees may be cleared from the RPZs if they present obstructions to the airspace. Under this alternative, these easements will remain, and the land use for the Runway 02L/20R RPZs will not change.

The RPZs of existing Runway 02R/20L fall in their entirety on airport property. However, approximately 78,690 square feet of the Southeast Apron, 47,750 square feet of Taxiway A, and 27,030 square feet of Runway 02L/20R lie within the Runway 02R RPZ. Similarly, 91,900 square feet of the Northeast Apron, 26,400 square feet of Taxiway A, 12,610 square feet of Taxiway C, and 5,450 square feet of Runway 02L/20R lie within the Runway 20L RPZ. The presence of aprons and taxiways within an RPZ is incompatible with the FAA RPZ land use requirements. However, the FAA has stated that since these land uses are existing, they may not require a modification to standards or removal in the ultimate configuration. Therefore, the existing land uses in the RPZ will remain under this alternative, and no changes are proposed.

Safety Analysis

This alternative does not correct the non-standard conditions that currently present safety risks at Birchwood Airport, including:

- Segments of Taxiway A in-line with Runway 02R/20L
- Substandard width of existing Runway 02R/20L
- Presence of a fence within the existing Runway 02L RSA
- Substandard length of existing Runway 02L OFA

Meeting Demand for Additional Lease Lots

Alternative 1 does not provide additional apron or lease lot space to meet the existing demand.

NextGen and Operating Parameters

The FAA has been working to modernize the National Airspace System (NAS) through the implementation of NextGen. The goals of NextGen include the use of new technologies and aircraft procedures to increase the safety, efficiency, capacity, access, flexibility, predictability, and resilience of the NAS while also reducing the environmental impact of aviation.

Major initiatives of NextGen include the completion of aeronautical surveys for use to construct approaches and map obstructions and the implementation of the ADS-B technology. This technology allows aircraft (that are equipped with GPS transponders) to broadcast their position, speed, and direction instantly and automatically, which can be interpreted by similarly equipped aircraft and air traffic control. The requirement for aircraft to be equipped with GPS transponders is not mandatory at this time.

Currently, there has been no direct implementation of the NextGen operation parameters at Birchwood Airport. Birchwood recently completed a non-vertically guided aeronautical survey. However, no instrument approaches exist. There is not an air traffic control tower at Birchwood, and many of the small GA aircraft that mostly use the airport are not ADS-B equipped. The existence of the aeronautical survey will identify existing penetrations to the visual approaches and provide future benefits not only to NextGen but also to Birchwood Airport. There are no improvements proposed under this alternative, and it will not influence any future NextGen operating parameters.

5.3.2 Alternative 2 Impact Analysis

Alternative 2 consists of removing segments of Taxiway A that are in line with Runway 03G/21G, acquiring approximately 47 acres of new land for permanent control of runway RPZ and future apron and lease lot development, and other expansion-related improvements.

The following impacts are anticipated under this alternative:

Environmental Impacts

Alternative 2 will expand the airport boundary and construct new facilities. Potential environmental impacts associated with this alternative are described below. All potential impacts would be further evaluated under a formal NEPA process if a project occurs under this alternative.

1. Historical Properties, Archeological, and Cultural Resources: Any ground-disturbing work and/or expansion beyond the existing airport property boundary will require further cultural resource evaluation. Compliance under Section 106 of the National Historic Preservation Act (NHPA) is required.
2. Air Quality: The Birchwood Airport is not located in an air quality non-attainment or maintenance area for National Ambient Air Quality Standards. The NEPA analysis would analyze whether the project would cause an increase in air traffic that would result in emissions that would exceed one or more of the National Ambient Air Quality Standards. The project, as proposed, could result in an increase in air traffic. However, at this time, that increase is not expected to have an adverse impact on air quality in the surrounding area.
3. Anadromous Fish Streams and Essential Fish Habitat: No impact is anticipated.
4. Floodplain and Regulatory Floodway: A review of the FEMA Flood Insurance Rate Maps indicated that mapped floodplains are present near the airport but not in the proposed development areas.
5. Hazardous Waste: Land acquired will be subject to an Environmental Site Assessment investigation in order to determine if hazardous waste or contaminated sites are present.
6. Migratory Birds and Eagles' Nests: This alternative includes clearing for obstruction removal and future development. Clearing operations may adversely affect migratory birds and remove the nesting habitat for eagles. Clearing will not be permitted within 660 feet of a known eagle's nest and will follow the USFWS Recommended Time Periods to Avoid Vegetation Clearing in the Southcentral Region. Vegetation clearing should not occur between May 1st and July 15th.
7. Noise: Per the FAA Environmental Desk Reference for Airport Actions (2020), 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. Under Alternative 2, proposed improvements are not anticipated to meet these thresholds and will likely not greatly increase noise levels at and near the airport.
8. Wetlands and Other Waters of the United States: As discussed in the Environmental Overview, seasonally saturated forested and scrub/shrub emergent wetlands were identified on the southwestern edge of the airport property. This alternative is anticipated to impact wetlands. A field delineation of existing wetlands in and around each project will be required. A USACE wetland permit will be needed for the development of each component project that impacts a delineated wetland.

Construction Costs

Site development and construction costs developed for this alternative consider land acquisition; obstruction clearing; foundation and fill requirements; utility improvements; and anticipated construction methods for each component project included in this alternative.

The total anticipated cost for the construction of Alternative 2 in 2023 dollars is anticipated to be approximately \$49.5M.

Maintenance Costs

The cost of maintenance is anticipated to increase under this alternative to account for the maintenance of the new apron and taxiway areas. This includes routine mowing of new infield grass areas in the summer and snow removal of the newly paved surfaces in the winter.

This alternative will construct approximately 889,720 square feet of additional operational surfaces, which will increase the amount of DOT&PF-maintained surfaces by approximately 52%. Assuming a direct relationship between the size of the area to be maintained and the cost to perform maintenance on these areas, this alternative will result in an increase of approximately \$76,500 in annual maintenance costs in comparison to the costs reported in 2020. The 2020 maintenance costs are included in the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport.

Revenue Generation

Alternative 2 will provide approximately 16.5 acres of newly acquired land for future lease lot development (land use) and the construction of approximately 10.7 acres of new GA Apron, adding a total of 73 tie-down spaces.

Based on the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport, approximately 70% of the airport's total annual revenue was generated from land use, and 25% was generated by airport-based tie-down and transient parking fees. Under Alternative 2, the accessible leasable area on the airport would be increased by approximately 42%, and the number of tie-downs available to GA customers would be increased by 46%. Expansion under Alternative 2 will result in an increase of approximately \$112,470 for potential annual revenue generated in comparison to 2020 revenues, assuming a direct relationship between the amount of leasable area and tie-downs available and their associated revenue generation.

Airspace Obstructions

Under Alternative 2, the runways are rehabilitated in their existing location with little or no changes to their vertical or horizontal dimensions. The implementation of an instrument approach for Runway 21 would decrease the angle of the approach surface to 30 to 1 and increase the number of trees that are obstructions within the approach. Additional property and avigation easements will be acquired to the south of the airport boundary, which will enable tree removal to mitigate obstructions to the approaches. However, obstructions to the Transitional Surfaces south of the runway centerline will remain under this alternative.

Land Uses within the Runway RPZs

Under Alternative 2, the land within the Runway 03/21 RPZ will be acquired by DOT&PF, and the existing Avigation and Hazard easement will be vacated. This will allow the DOT&PF to have full control of future land use and development within the RPZs.

The threshold locations of Runway 03G/21G will not change, and the RPZs will remain in their existing configuration. The in-line segments of Taxiway A will be removed, which reduces the amount of taxiway area in the RPZs by approximately 68,780 square feet. The other existing

runway, taxiway, and apron areas located within the RPZs, will remain the same and are considered existing incompatible land uses that do not require a modification-to- standard to remain in the ultimate configuration.

Safety Analysis

Alternative 2 removes the in-line Taxiway A, increases Runway 03G/21G to the standard 60- foot width, increases the length of the Runway 03/21 OFA, and removes the fence located within the Runway 03 RSA. It also acquires additional property below the approaches to both runways to allow for additional obstruction removal and full control of the runway RPZs. This alternative also constructs a vehicle and pedestrian road around the south end of the airport to mitigate incursions from unauthorized runway crossings. These improvements improve airport safety from the current conditions, as represented in Alternative 1.

Alternative 2 does not provide the standard 700-foot separation between the centerline of Runway 03/21 and Runway 03G/21 required by the FAA for parallel runways. However, the risk proposed by the substandard runway separation is mitigated by the fact that simultaneous operations are not permitted at the airport. Simultaneous operations have rarely been witnessed, and most users agree that they are not a significant problem on the airport.

Meeting Demand for Additional Lease Lots

Alternative 2 would provide areas for 16.5 acres of lease lot development and 10.7 acres of new GA Apron for the installation of 73 new tie-downs.

There is a forecasted need for approximately 13 acres of leasable area in the next 10 years and 17.5 areas of leasable area in the 20-year planning horizon, assuming a minimum lease size of approximately 0.5 acres (100 feet by 250 feet). The actual number of leases developed on the new leasable land will be based on the lot configuration. This alternative provides approximately 94% of the land necessary to meet the forecasted demand for lease lots.

Approximately 38 additional small GA tie-downs are needed to meet the current and forecasted demand for public GA apron parking. Also, the need for a minimum of 7 new large aircraft/glider spaces and 10 more transient parking spaces was identified. The lease lot development provided under this alternative meets the anticipated demand by providing 52 new small tie-downs at the new GA Apron (10 of which will be used for transient parking) and a combination of six additional small tie-downs and seven large aircraft/glider tie-downs at the Northeast Apron expansion.

NextGen and Operating Parameters

Under Alternative 2, no changes to the runway configurations or airspace, are anticipated. The development of a non-precision instrument approach to Runway 21 is recommended if the FAA determines that development and implementation of the approach is feasible. Development of the approach will need to be coordinated and implemented in accordance with NextGen design and operating parameters..

5.3.3 Alternative 3 Impact Analysis

Alternative 3 would expand the airport boundary, as described in Alternative 2, and would construct new facilities. Additionally, this alternative consists of relocating the gravel/ski Runway 03G/21G to the east shoulder of Runway 03/21 and relocating Taxiway A to the south to provide 150 feet of separation between the gravel runway centerline and the centerline of Taxiway A. This alternative will expand the Northeast Apron to provide additional tie-down spaces without encroaching on the Runway 21G RPZ. Property to the south of the airport will also be acquired to meet the needs for additional hangar lease areas and aircraft tie-down areas.

Potential environmental impacts associated with this alternative are described below. All potential impacts would be further evaluated under a formal NEPA process if a project occurs under this alternative.

Environmental Impacts

Alternative 3 will expand the airport boundary and construct new facilities. Development of this alternative will likely impact the environmental resource categories as described below.

1. Historical Properties, Archeological, and Cultural Resources: Any ground-disturbing work and/or expansion beyond the existing airport property boundary will require further cultural resource evaluation. Compliance under Section 106 of the NHPA is required.
2. Air Quality: The Birchwood Airport is not located in an air quality non-attainment or maintenance area for National Ambient Air Quality Standards. The NEPA analysis would analyze whether the project could result in an increase in air traffic that would result in emissions that would exceed one or more of the National Ambient Air Quality Standards. The project, as proposed, could result in an increase in air traffic. However, at this time, that increase is not expected to have an adverse impact on air quality in the surrounding area.
3. Anadromous Fish Streams and Essential Fish Habitat: No impact is anticipated.
4. Floodplain and Regulatory Floodway: A review of the FEMA Flood Insurance Rate Map indicated that mapped floodplains are present near the airport but not in the proposed development areas. No impact is anticipated.
5. Hazardous Waste: Land acquired will be subject to an Environmental Site Assessment investigation in order to determine if hazardous waste or contaminated sites are present.
6. Migratory Birds and Eagles' Nests: This alternative includes clearing for obstruction removal and future development. Clearing operations may adversely affect migratory birds and remove the nesting habitat for eagles. Clearing will not be permitted within 660 feet of a known eagle's nest and will follow the USFWS Recommended Time Periods to Avoid Vegetation Clearing in the Southcentral Region. Vegetation clearing should not occur between May 1st and July 15th.
7. Noise: Per the FAA Environmental Desk Reference for Airport Actions (2015), 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. Under Alternative 3, proposed improvements are not anticipated to meet these thresholds and will likely not greatly increase noise levels at and near the airport.

8. Wetlands and Other Waters of the United States: As discussed in the Environmental Overview, seasonally saturated forested and scrub/shrub emergent wetlands were identified on the southwestern edge of the airport property. This alternative is anticipated to impact wetlands. A field delineation of existing wetlands in and around each project will be required. A USACE wetland permit will be needed for the development of each component project that impacts a delineated wetland.

Construction Costs

Under Alternative 3, site development and construction costs consider land acquisition; clearing; foundation and fill requirements; utility improvements; and anticipated construction methods.

The total anticipated cost for the construction of Alternative 3 in 2023 dollars is anticipated to be approximately \$53.6M.

Maintenance Costs

Under Alternative 3, the cost of the maintenance is anticipated to increase under this alternative to account for maintenance of new apron and taxiway areas. This includes routine mowing of new infield grass areas in the summer and snow removal of the newly paved surfaces in the winter.

This alternative will construct approximately 1,051,485 square feet of additional operational surfaces, which will increase the amount of DOT&PF-maintained surfaces by approximately 61%. Assuming a direct relationship between the size of the area to be maintained and the cost to perform maintenance of the said area, this alternative will result in an increase of approximately \$90,500 in annual maintenance costs in comparison to the costs reported in 2020. The 2020 maintenance costs are included in the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport.

Revenue Generation

Alternative 3 will provide approximately 15 acres of newly acquired land for future lease lot development (land use) and the construction of approximately 10.4 acres of new GA Apron, adding a total of 66 tie-down spaces.

Based on the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport, approximately 70% of the airport's total annual revenue was generated from land use, and 25% is generated by based tie-down and transient parking fees. Under Alternative 3, the accessible lease area would be increased by approximately 38%, and the number of tie-downs available to GA customers would be increased by 42%. Expansion under Alternative 3 will result in an increase of approximately \$102,000 for potential annual revenue generated in comparison to 2020 revenues, assuming a direct relationship between the amount of leasable area and tie-downs available and their associated revenue generation.

Airspace Obstructions

Under Alternative 3, Runway 03G/21G is relocated adjacent to the southeastern end of Runway 03/21. The airspace for Runway 03G/21G will generally fall within Runway 03/21's existing airspace and, therefore, obstructions to the Part 77 Airspace. Therefore, existing obstructions to the Part 77 Airspace are generally reduced from the existing conditions, provided that the obstructions within the newly acquired properties are removed.

Additional property and aviation easements will be acquired to the south of the airport boundary to allow for the ability for more tree removal. Obstructions currently present within the Runway 03G/21G Transitional Surface will be reduced compared to the existing condition and the conditions presented in Alternative 2 due to the relocation of the runway to the northwest.

Land Uses within the Runway RPZs

Under Alternative 3 and Alternative 2, land within the Runway 03/21 RPZ will be acquired, and any existing aviation hazard easements will be vacated. This will allow the DOT&PF to have full control of future land use and development within the RPZs. Similarly, land within the Runway 03G RPZ will be acquired and cleared of obstructions (trees).

The relocation of Runway 03G/21G would reduce the square footage of the apron located with the RPZ from 170,500 to approximately 11,070 square feet, with a small portion of the proposed Northeast Apron expansion limits and the summer tie-down/winter snow storage limits overlapping with the Runway 21G RPZ (none of the proposed tie-downs within either of the apron expansion areas lie within the RPZ). Similarly, the taxiway area located in the 03G/21G RPZs will be reduced from 86,760 square feet to 38,865 square feet, a total reduction of 47,895 feet. Also, due to the runway relocation, the area of Runway 03/21 that now falls within the Runway 03G/21G RPZ is increased from 32,480 square feet to 97,065 square feet.

Because the thresholds of the Runway 03G/21G would be relocated under this alternative, the FAA considers the existence of taxiways, runways, and aircraft aprons in the RPZ as new incompatible land use within an RPZ. A modification to standards for these new incompatible land uses will be required under this alternative.

Safety Analysis

Alternative 3 relocates Runway 03G/21G away from the in-line Taxiway A, increases Runway 03G/21G to the standard 60-foot width, increases the length of the Runway 03/21 OFA, and removes the fence located within the Runway 03 RSA. It also acquires additional property below the approaches to both runways, which will allow for additional obstruction removal and full control of the runway RPZs. This alternative also constructs a vehicle and pedestrian road around the south end of the airport, which will mitigate incursions from unauthorized runway crossings.

This alternative does not provide the standard 700-foot separation between the centerline of Runway 03/21 and Runway 03G/21 required by the FAA for parallel runways. However, as mentioned under Alternative 2, the risk proposed by the substandard runway separation is mitigated by the fact that simultaneous operations are not permitted at the airport. Simultaneous

operations have rarely been witnessed, but most users agree that they are not a significant problem on the airport.

Compared to Alternative 2, Alternative 3 increases safety because it relocates the gravel runway threshold closer to the main runway to make it more apparent to airport users that only one pattern is in use and simultaneous operations are prohibited. Also, this alternative reduces the severity of penetrations to the Transitional Surface adjacent to the runway and decreases the area of the taxiway and apron that fall within the Runway 03G/21G RPZs. However, the length of Runway 03G/21G is reduced from 1,802 feet to 1,710 feet, which presents a reduction in safety. The improvements shown under this alternative improve overall airport safety from the current conditions represented in Alternative 1 to a level similar to the level of safety represented in Alternative 2.

Meeting Demand for Additional Lease Lots

Alternative 3 provides space for 15 acres of lease lot development and 10.4 acres of new GA Apron for the installation of 66 new tie-downs.

This alternative provides approximately 86% of the land necessary to meet the forecasted demand for lease lots. The lease lot development provided under this alternative meets the anticipated demand by providing 46 new small tie-downs at the new GA Apron (10 of which will be used for transient parking) and a combination of five additional small tie-downs and 10 large aircraft/glider tie-downs at the Northeast Apron expansion.

NextGen and Operating Parameters

Because relocated runway 03G/21G will remain a visual runway under Alternative 3, the NextGen design and operating parameters are identical to those identified under Alternative 2. See Alternative 2 for more information.

5.3.4 Alternative 4 Impact Analysis

Alternative 4 relocates gravel/ski Runway 03G/21G to meet FAA's runway separation requirements for safe and concurrent operations between two parallel runways. The land acquisition for relocation of Runway 03G/21G also provides opportunities for apron development and new lease areas. Other related improvements to Runway 03/21 are also included in Alternative 4, most of which are similar to Alternatives 2 and 3.

Environmental Impacts

Alternative 4 will increase the airport property boundary and construct new facilities. Development of this alternative will likely impact the environmental resource categories as described below. All potential impacts would be further evaluated under a formal NEPA process if a project occurs under this alternative.

1. Historical Properties, Archeological, and Cultural Resources: Any ground-disturbing work and/or expansion beyond the existing airport property boundary will require further cultural resource evaluation. Compliance under Section 106 of the NHPA is required.

2. **Air Quality:** The Birchwood Airport is not located in an air quality non-attainment or maintenance area for National Ambient Air Quality Standards. The NEPA analysis would analyze whether the project could result in an increase in air traffic that would result in emissions that would exceed one or more of the National Ambient Air Quality Standards. The project, as proposed, could result in an increase in air traffic. However, at this time, that increase is not expected to have an adverse impact on air quality in the surrounding area.
3. **Anadromous Fish Streams and Essential Fish Habitat:** No impact is anticipated.
4. **Floodplain and Regulatory Floodway:** A review of the FEMA Flood Insurance Rate Map indicated that mapped floodplains are present near the airport but not in the proposed development areas. No impact is anticipated.
5. **Hazardous Waste:** Land acquired will be subject to an Environmental Site Assessment investigation in order to determine if hazardous waste or contaminated sites are present.
6. **Migratory Birds and Eagles' Nests:** This alternative includes the most impact of any alternative for clearing for obstruction removal and future development. Clearing operations may adversely affect migratory birds and remove the nesting habitat for eagles. Clearing will not be permitted within 660 feet of a known eagle's nest and will follow the USFWS Recommended Time Periods to Avoid Vegetation Clearing in the Southcentral Region. Vegetation clearing should not occur between May 1st and July 15th.
7. **Noise:** Per the FAA Environmental Desk Reference for Airport Actions (2015), 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. Under Alternative 4, the new runway location may require that a noise study be performed to analyze the impact of aviation noise on the neighboring community.
8. **Wetlands and Other Waters of the United States:** As discussed in the Environmental Overview, seasonally saturated forested and scrub/shrub emergent wetlands were identified on the southwestern edge of the airport property. This alternative is anticipated to impact wetlands. A field delineation of existing wetlands in and around each project will be required. A USACE wetland permit will be needed for the development of each component project that impacts a delineated wetland.

Construction Costs

Site development and construction costs for this alternative consider land acquisition; clearing; foundation and fill requirements; utility improvements; and anticipated construction methods.

The total anticipated cost for the construction of Alternative 4 in 2023 dollars is anticipated to be approximately \$89.4M, which is significantly more than Alternatives 1, 2, and 3.

Maintenance Costs

The cost of maintenance is anticipated to increase under this alternative to account for the maintenance of new apron areas and taxiway areas. This includes routine mowing of new infield grass areas in the summer and snow removal of the newly paved surfaces in the winter.

This alternative will construct approximately 1,643,900 square feet of additional operational areas, which will increase the amount of DOT&PF-maintained surfaces by approximately 96%. Assuming a direct relationship between the size of the area to be maintained and the cost to perform maintenance of the said area, this alternative will result in an increase of approximately \$141,500 for annual maintenance costs compared to the costs reported in 2020, almost doubling the existing maintenance costs for the airport. The 2020 maintenance costs are included in the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport.

Revenue Generation

Alternative 4 will provide approximately 36.5 acres of newly acquired land for future lease lot development (land use) and the construction of approximately 14 acres of new GA Apron, adding a total of 96 tie-down spaces.

Based on the May 2021 Financial Assessment and Maintenance Cost Generation Report for Birchwood Airport, approximately 70% of the airport's total annual revenue was generated from land use, and 25% is generated by based tie-down and transient parking fees. Under Alternative 4, the accessible lease area will increase by approximately 93%, and the number of tie-downs available to GA customers would increase by 61%. Expansion under Alternative 4 will result in an increase of approximately \$220,600 for potential annual revenue generated in comparison to 2020 revenues, assuming a direct relationship between the amount of leasable area and tie-downs available and their associated revenue generation.

Airspace Obstructions

Under Alternative 4, Runway 03/21 is reconstructed in its existing location with little or no changes to the vertical and horizontal location and, therefore, obstructions to the main runway's airspace are identical to those identified under Alternative 1. Runway 03G/21G will be relocated south and east of Runway 03/21 to meet FAA's runway separation requirements and also reduce incompatible land uses within Runway 03G/21G RPZs.

Additional property will be acquired to the south of the airport boundary to accommodate relocated Runway 03G/21G, which will provide the ability for more tree obstruction removal. In particular (and similar to Alternatives 2 and 3), DOT&PF will now be able to remove trees that are currently not on airport property that obstruct the approach to existing Runway 03 and Runway 03G/21G.

Land Uses within the Runway RPZs

Under Alternative 4, the land within the Runway 03/21 RPZ will be acquired, and the existing aviation hazard easements will be vacated. Additionally, the large acquisition of land required to accommodate the relocation of Runway 03G/21G allows DOT&PF full control of future land use and development within the RPZs for both runways. The new Runway 03G/21G RPZ will be clear of runways, aprons, and taxiways. The new airport access road will penetrate the new Runway 21G RPZ for Runway 21G. This access road will be used to provide access from the southeast side to the northeast side of the airport without crossing the runway and will mitigate runway incursions. Due to the existing airport layout and limited availability for access road location, the

land use within the Runway 03G RPZ under this alternative is considered allowable but not preferred.

Safety Analysis

Under Alternative 4, Runway 03G/21G is relocated away from in-line Taxiway A and widened to the standard 60-foot width, the length of the Runway 03/21 OFA is increased, and the fence is removed that lies within the Runway 03's RSA. It also acquires additional property below the approaches to both runways to allow for additional obstruction removal and full control of the runway RPZs. This alternative also constructs a vehicle and pedestrian road around the south end of Runway 03/21, which will mitigate incursions from unauthorized runway crossings.

In addition, this alternative relocates gravel runway 03G/21G to provide the standard 700-foot separation between the centerline of Runway 03/21 and Runway 03G/21G as required by the FAA for parallel runways. The relocation would result in distinct traffic patterns and simultaneous operations on both runways.

Airport users expressed concern that allowing simultaneous operations with two distinct patterns at Birchwood would present significant safety hazards to air operations, which would drastically outweigh the benefits presented by this alternative. Continuing to operate one traffic pattern away from neighboring communities and prohibiting simultaneous operations is preferred.

Meeting Demand for Additional Lease Lots

Alternative 4 provides area for 36.5 acres of lease lot development and 14 acres of new GA Apron for the installation of 96 new tie-downs.

This alternative provides over 100% of the land necessary to meet the forecasted demand for lease lots and allows for the maximum amount of flexibility to configure lease lots to best serve a wide range of leaseholders.

The tie-downs provided under this alternative meets the anticipated demand by providing 72 new small tie-downs at the new GA Apron (10 of which will be used for transient parking) and a combination of 10 additional small tie-downs and 10 large aircraft/gliders tie-downs at the Northeast Apron expansion.

NextGen and Operating Parameters

Due to the relocation of Runway 03G/21G under Alternative 4, it is likely that a new aeronautical survey would be needed to allow for future approach procedures and to support NextGen design. As described under Alternative 2, the development of a non-precision instrument approach to Runway 21 is recommended if the FAA determines that development and implementation of the approach is feasible. Development of the approach will need to be coordinated and implemented in accordance with NextGen design and operating parameters..

Table 28: Alternatives Evaluation Matrix

Impacts on Airport	Alternative 1 No Build	Alternative 2 Maintain Existing Gravel Runway	Alternative 3 Relocate Gravel Runway to Shoulder of Main Runway	Alternative 4 Construct New Gravel Runway
Runway 03/21 Dimensions	Maintain Existing (4,012' by 100')	Match Existing (4,012' by 100')	Match Existing (4,012' by 100')	Match Existing (4,012' by 100')
Runway 03G/21G Dimensions	Maintain Existing (1,802' by 50')	Widen (1,802' by 60')	Shorten and Widen (1,710' by 60')	Widen (1,800' by 60')
Maintains Single Traffic Pattern with Simultaneous Operations Prohibited?	Yes	Yes	Yes	No
Meets FAA Runway Separation Requirements for Parallel Runways?	No	No	No	Yes
Meets Forecasted Tie-Down Demand?	No	Yes	Yes	Yes
Meets Forecasted Lease Lot Demand?	No	No. Provides 94% of lease lot area forecasted	No. Provides 86% of lease lot area forecasted	Yes. Exceed 100% of lease lot area forecasted
Constructs Parallel Taxiway A?	No	No	Yes	Yes
Maintains Direct Ski-Access to Runway 03G/21G from Ski Apron?	Yes	Yes	No – Taxi Across Paved Taxiway A	Yes
Environmental Impacts	No change. See Birchwood Airport Environmental Overview Addendum	Environmental impacts are likely greater than Alternative 1, equal to Alternative 3, and less than Alternative 4.	Environmental impacts are likely greater than Alternative 1, equal to Alternative 2, and less than Alternative 4.	Environmental impacts are likely greater than Alternative 1, Alternative 2, and Alternative 4.
Construction Costs (approx.)	\$0	\$49.5M	\$53.6M	\$89.4M
Estimated Increase in Annual Maintenance Costs (approx.)	No change. See May 2021 Financial Assessment and Maintenance Cost Generation Report for historical maintenance costs.	\$77k	\$91k	\$141k
Estimated Revenue Generation (approx.)	No change. See May 2021 Financial Assessment and Maintenance Cost Generation Report for historical maintenance costs.	\$112k	\$102k	\$221k
Removes Fence in Runway 03 OFA and Trees South of Runway 03 and 03G?	No.	Yes.	Yes.	Yes.
Other Changes to Airspace Obstructions	Remains as described in Condition and Needs Assessment.	Obstructions are less than Alternative 1 but more than Alternative 3 and Alternative 4.	Obstructions are less than Alternative 1 and Alternative 2 but more than Alternative 4.	Obstructions are less than Alternative 1, 2, and Alternative 3
Land Uses within RPZ	No change.	No change	Incompatible land uses reduced from Alternatives 1 and 2, but Mod-to-Standards Required due to runway relocation.	Incompatible land uses reduced from Alternatives 1, 2, and 3
Mod-To-Standards Required?	Yes (Taxiway A in-line with Runway 03G/21G)	No	Yes (Incompatible Land Uses within RPZ of new Runway)	No
Safety Analysis	No corrections to non-standard conditions. Existing safety hazards remain.	Removes in-line segments of Taxiway A Removes fence obstruction in Runway 03 RSA Full control of land within RPZs for obstruction removal Existing Incompatible land uses in RPZ remain Does not meet parallel runway separation requirements	Removes in-line segments of Taxiway A Removes fence obstruction in Runway 03 RSA Full control of land within RPZs for obstruction removal Reduced incompatible land uses in RPZ Reduced Length of Runway 03G/21G Does not meet parallel runway separation requirements	Removes in-line segments of Taxiway A Removes fence obstruction in Runway 03 RSA Full control of land within RPZs for obstruction removal Reduced incompatible land uses in RPZ Meets parallel runway separation requirements
NextGen Parameters	No implementation or significant contribution.	No implementation or significant contribution.	No implementation or significant contribution.	No implementation or significant contribution.

5.3.5 Preferred Alternative

The primary needs at Birchwood Airport were identified and considered under each alternative. Based on input from the airport sponsors, maintenance staff, airport users, and other local stakeholders, Alternative 2 has been chosen as the preferred alternative. While Alternative 2 does not meet the FAA's required runway separation distance, it does reconfigure existing parallel taxiways to address the safety hazard of aligned taxiways on runways.

Alternative 2 would also increase apron space to accommodate additional tie-down areas, provide for lease lot development, and ensure the RPZ is within airport boundaries, if land acquisition is successful. Compared to Alternatives 3 and 4, the preferred alternative is the least expensive in terms of estimated costs for site development and airport maintenance while still providing a safer operating environment and increased availability for leases and tie down spaces. Engineer's estimates have been prepared for Alternative 2 and are included in Appendix C.

6.0 PUBLIC INVOLVEMENT

The following describes methods used to ensure meaningful public involvement in the AMP update, helping to inform plan recommendations. Public Involvement materials and meeting summaries are included in Appendix D.

6.1 Public Involvement Plan

A Public Involvement Plan (PIP) was developed at the beginning of the project to outline the team approach for engaging with the public to develop an Airport Master Plan that meets the needs of the DOT&PF, airport users, adjacent landowners, stakeholders, and the surrounding community. The PIP identified a range of tools and techniques used to engage and inform potentially interested parties, provide opportunities to gather input early and often, and apply participant feedback when preparing AMP recommendations and alternatives. The PIP provided a framework to help ensure that stakeholders and members of the public:

- Are adequately informed about the project throughout development.
- Have ample opportunity to actively participate in the planning process.
- Receive timely, meaningful responses to questions, comments, and concerns.
- Provide data and input for the project team to assess current and projected facility needs.

Goals identified in the PIP:

- Develop a clear process for identifying and prioritizing different stakeholder groups, including establishing a Stakeholder Advisory Group (SAG) comprised of priority stakeholders.
- Implement a variety of tools to engage and keep stakeholders and the public informed. Create diverse opportunities for sharing feedback, with a strategic focus on the most efficient and effective ways to reach priority stakeholders.
- Update the public throughout the planning process by providing clear, accessible information by sharing emerging findings, concepts, and recommendations.
- Listen and acknowledge concerns and provide feedback on who public input has influenced project outcomes to ensure the AMP considers their needs and interests.

6.2 Stakeholder Advisory Group

A SAG was formed at the beginning of the project, which was comprised of pilots, major landowners, manager, and other key stakeholders. The group engaged in review of findings and recommendations from the planning effort, provided input, and generally served in an advisory role to the project team. The SAG also offered guidance and input into the public involvement effort to help identify, shape, and share outreach opportunities such as public meetings. Four SAG meetings were held throughout the planning process. Each meeting was documented in a written summary.

6.3 Public Meetings

The purpose of the public meetings was to facilitate stakeholder input through the presentation of emerging findings. The team coordinated efforts to prepare meeting materials, conduct outreach, develop visual aids, lead presentations, and engage stakeholders in providing feedback. Four

public meetings were held throughout the planning process. The team documented each public meeting in a written summary.

6.4 Outreach Methods

6.4.1 Project Website

A project website (<https://dot.alaska.gov/creg/birchwoodamp/>) was created with the goal to engage the public, make project information accessible, and provide opportunities to provide feedback. The website allowed stakeholders, the public, and other interested parties to access and share information about the project. It also served as a project document library where interested parties could access the most current documentation, review SAG and public meeting materials, sign up to be added to the project stakeholder database, and provide comments on the project.

The website was organized into the following sections:

What's New – An updated on where the team is at in the master planning process.

Meetings and Frequently Asked Questions – An overview of outreach completed to date and materials presented at each meeting.

- Project Overview – An overview of the master planning process and the project specifically.
- Schedule – A current depiction of the project schedule.
- How to Get Involved – A place to sign up for project updates and/or submit comments on the project.
- Project Documents – Links to documents completed to date.
- Contact Us – Project team contact information.

6.5 Stakeholder and Public Engagement

6.5.1 Stakeholder Interviews & Small Group Discussions

The project team conducted interviews and small group discussions with a representative group of key stakeholders, including airport users and tenants, adjacent landowners, and user group associations, as determined in partnership with the DOT&PF and the SAG.

6.5.2 Stakeholder Survey

A stakeholder survey was prepared to assess stakeholder support of draft alternatives. The project team analyzed and provided a written summary of the survey results.

6.5.3 Advertisements

Each public meeting was announced in the Anchorage Daily News. Affidavits of publication for advertisements are included in.

6.5.4 Social Media

Social media updates were developed regarding the planning process, upcoming meetings, and project milestones for sharing on appropriate social media outlets. Posts were made on DOT&PF's Facebook page.

6.5.5 Flyers

Informational flyers were developed that included a summary of the project purpose, timeline, project website address, and contact information. Flyers were distributed periodically throughout the life of the project in association with public meetings.

6.5.6 Brochure

An 11” by 17” brochure was created that summarized Airport Master Plan recommendations and general airport safety information.

6.5.7 Stakeholder Advisory Group

A SAG was formed at the beginning of the project that represented a diverse community of interests relative to airport development and long-range planning. The SAG’s role was to provide advisory input related to aviation, community, political, and planning. SAG members were tasked to review study documents, contribute technical input, share feedback from the organizations they represented, and engage their constituents to participate in public open houses. Table 29 lists those individuals who participated on the SAG.

Table 29: Stakeholder Advisory Committee Members

Entity (in alpha order)	Representative
Aircraft Owners and Pilots Association	Rob Stapleton
Alaska Department of Transportation & Public Facilities	Philana Miles
Alaska Railroad Corporation	Brian Lindamood
Birchwood Airport Association	Abe Harman
Birchwood Community Council	Val Jokela
Birchwood Recreation and Shooting Park	Jim Stoneking
Civil Air Patrol	Wally Parks, Jeff Banks (also representing glider community)
Eklutna, Inc.	Kyle Smith
Native Village of Eklutna	Carrie Brophil, Marc Lamoreaux
Talon Hangar Association	Dennis Serie

Four SAG meetings were held over the course of the project. Table 30 lists the meeting dates.

Table 30: SAG Meeting Dates and Locations

SAG Meeting Date	Location
Meeting 1 – February 9, 2021	Virtual via Zoom
Meeting 2 – October 12, 2021	Virtual via Zoom
Meeting 3 – December 14, 2022	Virtual via Zoom
Meeting 4 – TBD	

6.5.8 Public Meetings

Four public open houses were held over the course of the project (Table 31). The focus of the meetings was to inform the public and interested stakeholders about the ongoing status of the project and to solicit public comment.

Table 31: Public Meeting Dates and Locations

Public Meeting Date	Location
Meeting 1 – March 4, 2021	Virtual via Zoom
Meeting 2 – October 27, 2021	Virtual via Zoom
Meeting 3 – November 12, 2022	Birchwood Civil Air Patrol 20100 Birchwood Spur Road, Chugiak, Alaska
Meeting 4 - TBD	

7.0 IMPLEMENTATION PLAN

7.1 Introduction

The analyses completed in Section 5.0 evaluated development needs at the airport over the 20-year planning horizon. This report aims to present an overview of the recommended capital improvements and provide a strategy for implementing a Capital Improvement Program (CIP) to construct the recommended alternative. Recommended improvements are separated into three categories: near-term (0 to 5 years), medium-term (6 to 10 years), and long-term (11 to 20 years). Near-term projects are necessary to satisfy the existing demand and to correct safety issues. The medium- and long-term projects are needed to accommodate forecasted growth and rehabilitate existing facilities. All improvements on the CIP will be reflected in the ALP.

The CIP includes all of the improvements listed in the preferred alternative, repackaged into individual projects to provide a sequential order for construction based on priority. Many projects are interrelated, and construction is phased to maximize efficiency and reduce cost while taking advantage of available funding and addressing the operational needs at the airport. Planning-level cost estimates are provided for each project. If sufficient funding is available, some projects may be constructed concurrently.

7.2 Implementation Process

Airport improvements at Birchwood are funded through a combination of appropriations through the State of Alaska General Fund and AIP grants from the FAA. The FAA generally provides \$150,000 in yearly AIP entitlement funding for Non-Primary GA Airports. However, the FAA also allows the DOT&PF to pool the entitlement funding for all of their Non-Primary Airports and use the total amount to construct prioritized improvements across their entire Non-Primary Airport network. If the AIP program funding designated by the U.S. Congress exceeds the level necessary to meet the commitments of the entitlements, the FAA may provide additional support to a particular improvement by allocating “discretionary” AIP funding to the project. Projects funded through the AIP program are subject to a 6.25% local DOT&PF match.

Projects developed in accordance with the FAA’s AIP program follow the implementation process outline Order 5100.38D “FAA AIP Handbook,” otherwise known as the “Sponsor Handbook.” Figure 23 outlines the steps involved in the implementation process. The Sponsor Handbook emphasizes initiating projects early to allow sufficient time for planning, preparation of the appropriate environmental documentation, and land acquisition, design, and construction. Typically, funding for AIP-eligible projects aligns with the sequence graphically shown on the following page (HDL, 2023). For an overview of the rules determining AIP eligibility, see <https://www.faa.gov/airports/aip/overview>.



Step 1: Planning

- Identify the project on the approved ALP. Update ALP as necessary
- List the project on an approved airport specific of CIP, including data sheets, estimates, project justification, and graphical figures data sheet



Step 2: Preliminary Design

- Gather survey, geotechnical, and hydrological field data
- Advance conceptual design
- Develop preliminary cost estimate for budgeting and programming
- Prepare Draft Engineer's Design Report that establishes the basis for design
- Review submittals that identify anticipated environmental impacts and land acquisition needs
- Consult with FAA to confirm AIP eligibility of project components
- Consult with FAA to determine if Reimbursable Agreements are required for impacts to NAVAIDs



Step 3: Environmental Doc.

- Consult with FAA to determine Class of Action of environmental document required (Categorical Exclusion, Environmental Assessment, Environmental Impact Statement)
- Perform consultation with impacted or adjacent agencies
- Perform public involvement
- Perform environmental fieldwork to quantify and delineate environmental impacts
- Prepare environmental document



Step 4: Land Acquisitions

- Complete real property appraisal
- Complete review appraisal
- Prepare offer
- Negotiate purchase agreement



Step 5: Final Design

- Execute reimbursable agreements to support NAVAIDs, if relevant
- Prepare an approved approval of Construction Safety Phasing Plan
- Secure environmental permits
- Request Modification-to-Standards for any project components that do not meet FAA requirements
- Develop final design, including plans, specifications, and estimate
- Submit FAA Form 7460-1 for airspace evaluation of project components



Step 6: Bidding

- Advertise and secure bids
- Finalize and submit FAA grant application
- Secure Construction Funding



Step 7: Construction

- Issue notice-to-proceed for construction
- Perform construction administration in accordance with sponsor grant assurances to ensure conformity with the approved plans and specifications



Step 8: After Construction

- Develop record drawings
- Submit final Close Out Report
- Update ALP, if necessary

Figure 23: Implementation Process

7.3 Capital Improvements Plan

This CIP includes projects shown in the preferred alternative that are anticipated during the 20-year planning period of 2023 to 2043. This plan should be re-evaluated by DOT&PF annually as the State's needs and priorities change with time.

The following pages include a high-level summary of the projects included in each phase.

Near-Term Projects (~2028): Approximately \$13.93M - See Figure 24

- Reconfigure Taxiways and Install Supplemental Wind Cone
- Remove Obstructions and Re-align Southeast Apron Access Road
- Reconstruct Runway 03G/21G
- Construct Northeast Apron Improvements
- Land Acquisition, Construct Perimeter Fencing Improvements, and Rehabilitate Runway 03/21 Lighting

Mid-Term Projects (~2033): Approximately \$3.89M – See Figure 25

- Construct Access Road and Vehicle Parking Area Improvements
- Construct Apron and Run-Up/Staging Area Improvements

Long-Term Projects (~2038): Approximately \$50.22M – See Figure 26

- Land Acquisition
- Construct New GA Apron and Lease Lot Access
- Construct Access Road Improvements
- Rehabilitate Runway 03/21
- Relocate Weather Station

As noted previously, Eklutna, Inc. has expressed that it has no desire to sell their land for future airport expansion. However, it has also expressed interest in developing its land to meet the growing demand for tie-down and lease areas. Future discussion and negotiations between Eklutna, Inc., DOT&PF, and the FAA will be required to develop a mutually agreeable strategy for airport expansion on to Eklutna's existing property adjacent to the airport.

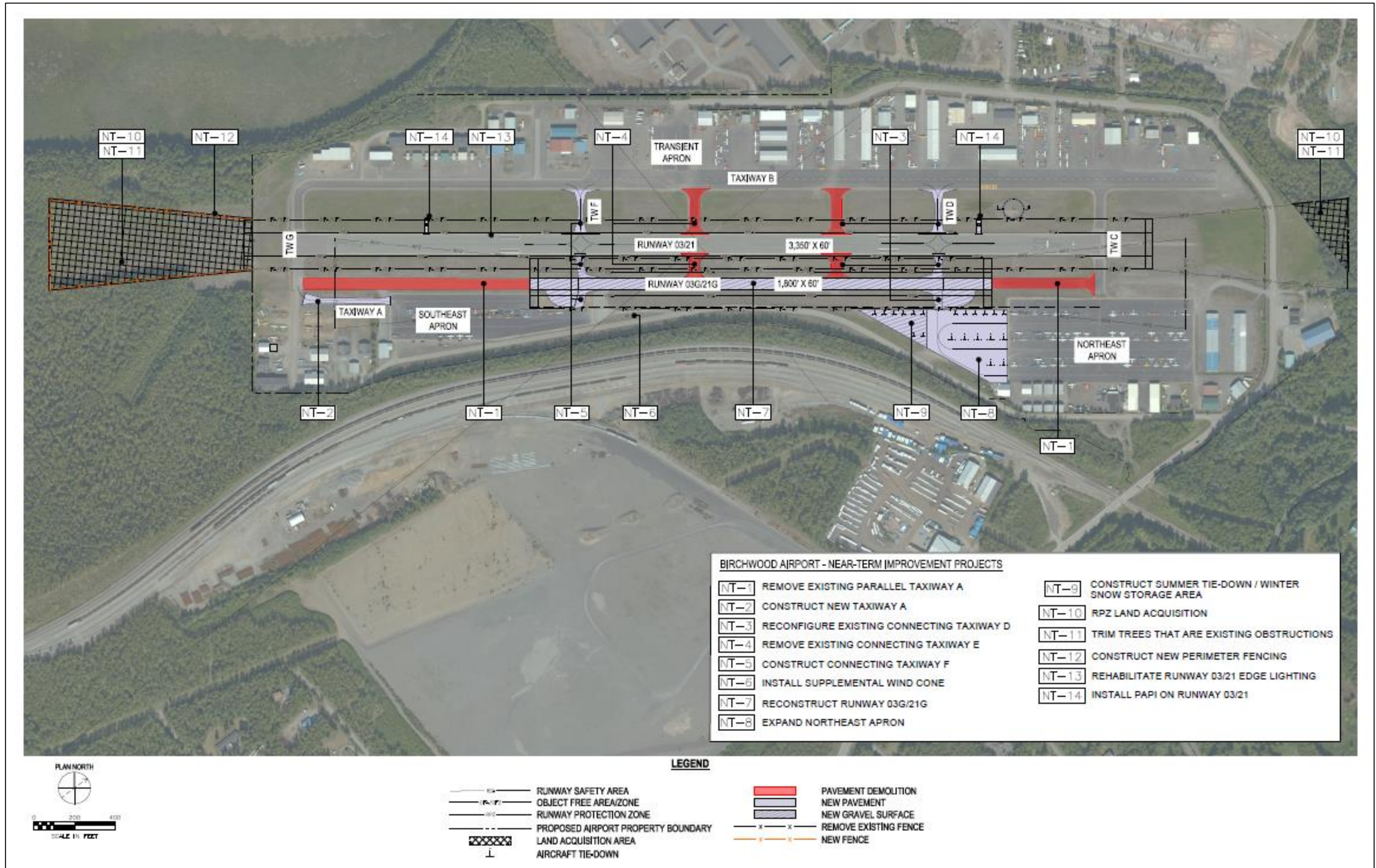


Figure 24: Near-Term Projects

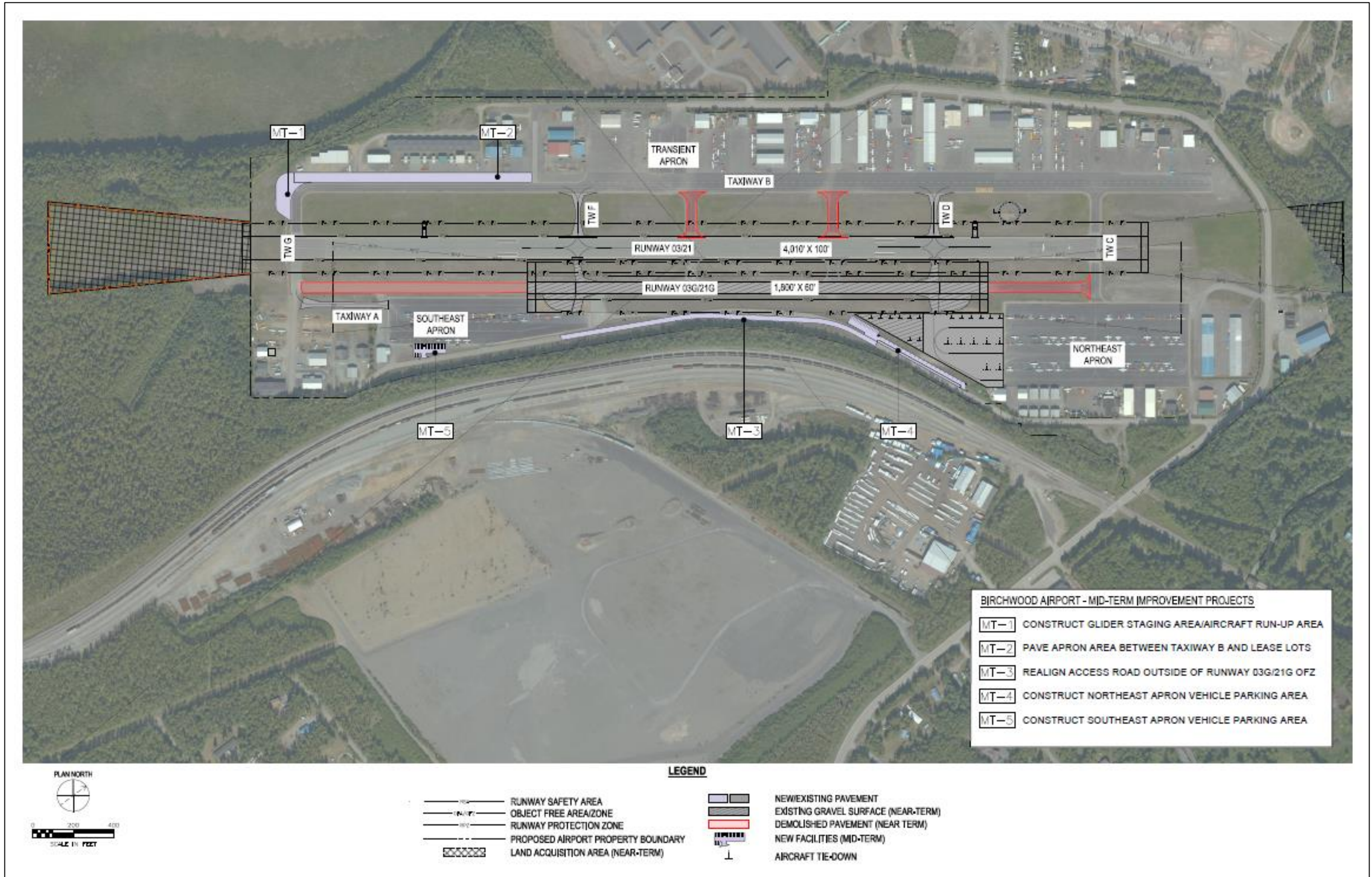


Figure 25: Mid-Term Projects

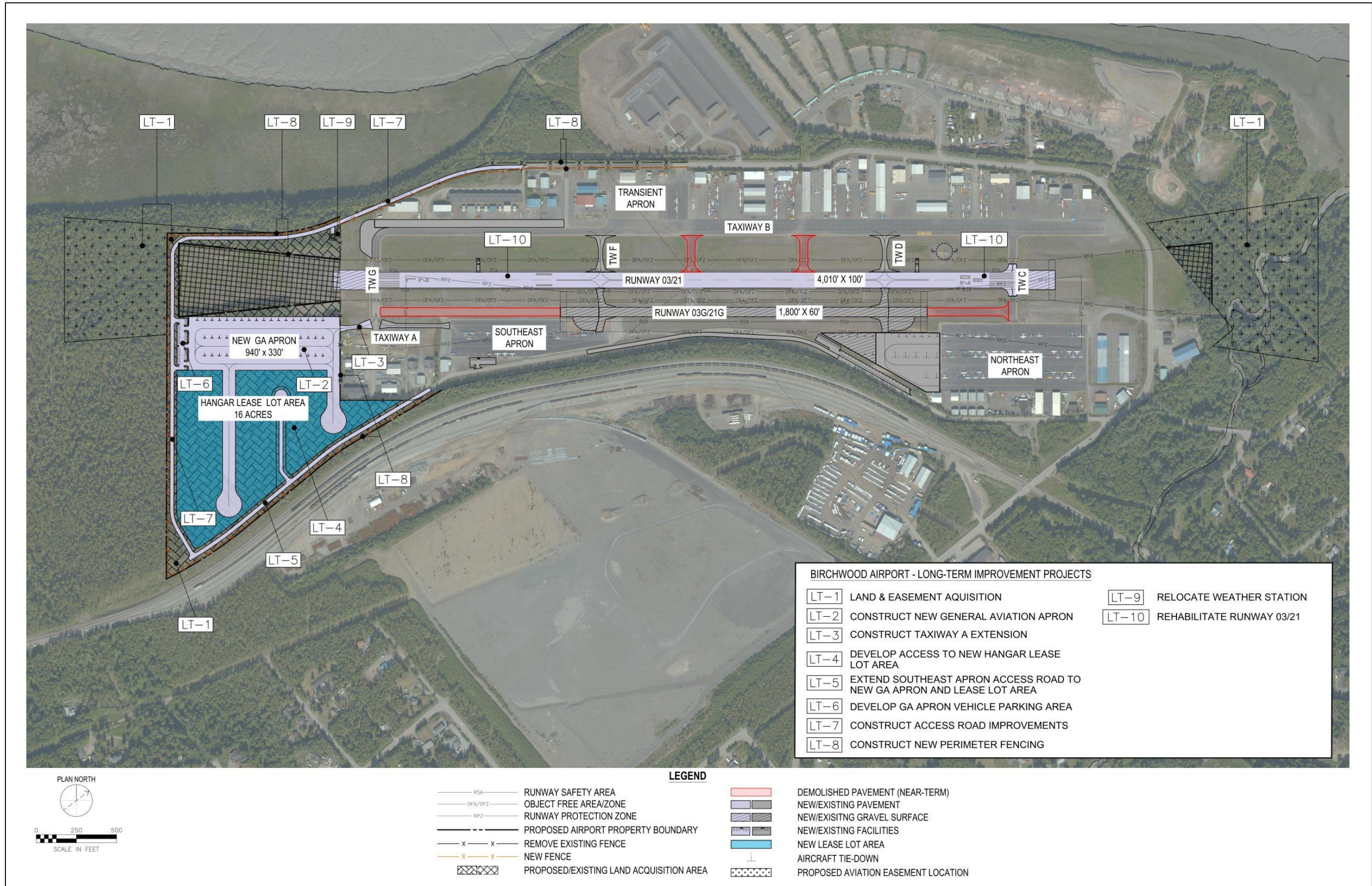


Figure 26: Long-Term Projects

Table 32 lists projects included in the preferred alternative and is phased according to near-term, mid-term, and long-term priorities. The table also includes a brief project description, estimated capital costs, and a discussion about the likelihood that the project is AIP-eligible. The AIP eligibility of each project will need to be confirmed early in the design process.

Capital cost estimates include inflation factors and assumed design, construction administration, and DOT&PF indirect costs (per the 2023 approved Indirect Cost Rate Proposal for federally funded Airport Projects) as a percentage of construction. Draft CIP data sheets with additional cost estimate breakdowns for each project are included in Appendix E. The total cost of the CIP is approximately \$68.04 million.

Table 32: Birchwood Airport Implementation Plan

Project Name		Project Description	AIP Eligibility	Estimated Project Subtotals	Estimated Project Cost
Reconfigure Taxiways and Rehab Runway 03G/21G					
1	Remove Existing Parallel Taxiway A	Remove portions of Taxiway A that are in line with Runway 03G/21G to mitigate the safety hazard present between the taxiway’s alignment with the 03G and 21G thresholds.	Yes	\$415,000	\$13,926,000
2	Construct New Taxiway A	Construct approximately 700 feet of new Taxiway A to provide airside access from Southeast Apron to Taxiway G.	Yes	\$715,500	
3	Reconfigure Existing Connecting Taxiway D	Remove existing Taxiway D and construct new Taxiway D required to provide access to Runway 21G threshold from Taxiway B and the Northeast Apron.	Yes	\$1,123,500	
4	Remove Existing Connecting Taxiway E	Approximate mid-point taxiway is no longer needed due to the relocation of Taxiway D and the construction of new Taxiway F.	Yes	\$181,500	
5	Construct Connecting Taxiway F	New Taxiway will provide access to Runway 03G threshold and access from the Southeast Apron to Runway 03/21, Runway 03G/21G, and Taxiway B.	Yes	\$972,500	
6	Install Supplemental Wind Cone	Install a supplemental wind cone on the eastern side of Runway 03G/21G that meets FAA standards and provides accurate wind information to pilots operating on the Runway 03G threshold.	Yes	\$116,500	
7	Reconstruct Runway 03G/21G	Rehabilitate existing Runway 03G/21G (1,800'x60') in its current location to meet DOT&PF and FAA design standards, resurface, and install new edge markers.	AIP Eligibility May Be Limited	\$2,731,000	
8	Expand Northeast Apron	Expand the Northeast Apron south to include approximately 119,000 square feet of additional paved apron area and provide 13 new tie-down spaces with electrical outlets.	Yes	\$2,903,000	
9	Construct Summer Tie-Down/Winter Snow Storage Area	Construct approximately 33,000 square feet of additional gravel apron space south of the Northeast Apron to accommodate 8 new tie-downs in the summer and snow storage in the winter.	Yes	\$752,500	
10	RPZ Land Acquisition	Acquire approximately 9.5 acres of land within the Runway 03/21 RPZs to accommodate obstruction removal.	Yes	\$190,500	
11	Trim Trees in Aviation In RPZs	Trim trees located on airport property and within RPZs that were identified as obstruction in the aeronautical survey.	Yes	\$191,500	
12	Construct New Perimeter Fencing	Remove existing fencing that presents an obstruction and construct new perimeter fencing around newly acquired land within the Runway 03 RPZ.	AIP Eligibility May Be Limited	\$381,500	
13	Rehabilitate Runway 03/21 Edge Lighting	Rehabilitated existing edge lighting and install new electrical equipment building to accommodate existing electrical loads and replace failing equipment.	Yes	\$2,712,500	
14	Install PAPI's on Runway 03/21	Remove existing VASI on Runway 21 and Install new PAPIs on both ends of Runway 03/21.	Yes	\$539,500	

Project Name		Project Description		AIP Eligibility	Estimated Project Subtotals	Estimated Project Cost
Apron Access and Parking Improvements						
Mid-Term (Approx. 2033)	1	Construct Glider Staging Area/Aircraft Run-Up Area	Construct a 75-foot-wide staging/run-up area south of the intersection between Taxiway B and Taxiway G.	Yes	\$533,500	\$3,892,000
	2	Pave Apron Area Between Taxiway B and Lease Lots	Pave a 50-foot-wide section of the existing gravel area between the southern portion of Taxiway B and the lease areas directly to the west.	Yes	\$794,500	
	3	Realign Access Road Outside of Runway 03G/21G OFZ	Shift approximately 1,500 feet of existing road to the south to remove road alignment from within the Runway OFZ.	Yes	\$1,583,500	
	4	Construct Northeast Apron Vehicle Parking Area	Construct a combination of 20 parallel parking spaces and 18 perpendicular parking spaces with portable restroom facility adjacent to the Southeast Apron Access Road.	AIP Eligibility May Be Limited	\$752,000	
	5	Construct Southeast Apron Vehicle Parking Area	Construct 19 perpendicular parking spaces with portable restroom facility accessed from the Southeast Apron Access Road.	AIP Eligibility May Be Limited	\$228,500	
New GA Apron, Lease Areas, & Rehabilitate Runway 03/21						
Long-Term (Approx. 2038)	1	Land Acquisition	Acquire approximately 38.7 acres of land to accommodate future development and 26.2 acres of avigation easements	Yes	\$1,280,500	\$50,218,000
	2	Construct New General Aviation (GA) Apron	Construct an approximately 940-foot by 330-foot GA Apron that includes up to 52 small tie-downs.	Yes	\$13,490,500	
	3	Construct Taxiway A Extension	Construct approximately 700 feet of new Taxiway A to provide airside access from Southeast Apron to Taxiway G and from Taxiway G to the new apron and lease areas.	Yes	\$525,000	
	4	Develop Access to New Hangar Lease Lot Area	Construct taxi-lanes, driveways, and utility access in the new lease lot areas to provide airside and landside access and utilities to future lease lots.	Yes	\$8,624,000	
	5	Extend Southeast Apron Access Road to new GA Apron and lease lot area	Construct new Southeast Apron Access Road from existing road terminus to new GA vehicle parking area.	Yes	\$5,546,000	
	6	Develop GA Apron Vehicle Parking Area	Construct 44 perpendicular parking spaces with portable restroom adjacent to the Southeast Apron Access Road.	AIP Eligibility May Be Limited	\$1,181,500	
	7	Construct Access Road Improvements	Extend Southeast Apron Access Road from new GA Apron Parking Area to connect to terminus of Birchwood Spur Road.	Yes	\$4,425,500	
	8	Construct New Perimeter Fencing	Remove existing fencing on western and southern areas of airport the Runway 03 RPZ and construct new perimeter fencing around new southern airport boundary.	AIP Eligibility May Be Limited	\$1,370,500	
	9	Relocate Weather Station	Relocate the existing weather station from its current location to a new location southwest of Taxiway G.	Yes	\$599,000	
	10	Rehabilitate Runway 03/21	Rehabilitate the runway in its current location to replace existing pavement.	Yes	\$13,175,500	

8.0 FINANCIAL PLAN

This financial plan presents an analysis of the financial feasibility of improvements proposed for the Birchwood Airport under its Airport Master Plan. The plan describes historical revenues and expenses, presents the estimated cost of proposed development alternatives, and explores possible funding sources.

8.1 Inventory of Financial Information

8.1.1 Airport Financial Structure

Birchwood Airport is owned and operated by the state of Alaska and managed through the DOT&PF. It collects revenue through lease and tie-down fees. The airport is financially sustainable, though the airport’s revenue goes into a state general aviation fund, which funds M&O for state-run airports in Alaska. Funding is prioritized for airports experiencing safety concerns in communities primarily reliant on air travel. See Financial Assessment in Section 2.5 for more information.

8.1.2 Rates and Charges

At present, Birchwood Airport charges rates as shown in Table 33 and Table 34.

Table 33: Lease Rates Charged at the Birchwood Airport, 2010-Present

Effective Date	Lease Rate (\$ / square foot)	
	Aeronautical Use	Non-aeronautical use
1/1/2023	0.131	0.158
1/1/2020	0.119	0.144
1/1/2019	0.108	0.131
1/1/2017	0.098	0.119
1/1/2015	0.082	0.099
1/1/2013	0.082	0.094
1/1/2011	0.079	0.089
1/1/2010	0.076	0.082

Source: DOT&PF (2023c)

Table 34: Tie-down, Transient, and Application Fees Charged at the Birchwood Airport, 2012-2023

Effective Date	Years	
	2012–2017	2017–2023
Tiedown Rate (\$ per Month)	35	48
Application Fee (\$)	25	35
Transient Fee (\$ per Day)	4	5

Source: DOT&PF (2023c)

8.2 Financial Plan

This section summarizes the funding needs for the CIP, discusses funding sources, and concludes with the development of pro forma cash flow forecasts for the preferred alternative.

8.2.1 Capital Improvement Program Funding Needs

Table 35 summarizes the estimated cost by year for the preferred alternative, with a total cost of \$68.04 million from 2025 through 2039. The plan moving forward considers the payback of the sponsor’s share only (\$4.3 million, or 6.25%) and not the full project cost. The implementation plan in Section 7.0 shows the detailed estimates for the sponsor’s share of preferred alternative’s costs.

Table 35: Engineer’s Cost Estimate and Schedule for the Preferred Alternative, 2025 - 2039

Fiscal Year	Total Project Estimate (\$)	AIP Funding (\$)	Sponsor Share (\$)
2025	0	0	0
2026	0	0	0
2027	0	0	0
2028	13,926,000	13,055,625	870,375
2029	0	0	0
2030	0	0	0
2031	0	0	0
2032	0	0	0
2033	3,892,000	3,648,750	243,250
2034	0	0	0
2035	0	0	0
2036	0	0	0
2037	0	0	0
2038	50,218,000	47,079,375	3,138,625
2039	0	0	0
Total	68,036,000	63,783,750	4,252,250

Source: HDL (2024)

8.2.2 Capital Improvement Program Funding Sources

This section discusses five potential sources of funding for the preferred alternative: federal funding, internally generated funds (rates and charges), third party development, state appropriations, and bonds.

8.2.2.1 Federal Funding

The FAA, through its AIP, provides grants to public agencies for planning and development of public-use airports. Since 1987, Birchwood Airport has received almost \$11.5 million of AIP grant funding (DOT&PF, 2023a).

The ACIP estimates that all of the projects will be funded at 93.75%, with a local match of 6.25%. Plan estimates AIP funding will cover \$63.78 million of the estimated \$68.04 million cost, leaving \$4.25 million for DOT&PF to fund.

It is anticipated that most of the cost of the recommended improvements would be covered by AIP grants, though the total amount required for the preferred alternative exceeds what DOT&PF has received historically for projects at Birchwood Airport, and the identified need likely exceeds available funding. As a result, work may need to be completed with a phased approach.

The state of Alaska also received approximately \$392 million for airports from the Bipartisan Infrastructure Law (USDOT, 2022). It applied for and received infrastructure grants in the amounts of \$159,000 and \$145,000 in FY 2022 and 2023, respectively (FAA 2023). Future grant applications could be made for specific elements of the improvement plan.

8.2.2.2 Internally Generated Funds (Rates and Charges)

Birchwood Airport has historically operated with a profit, as discussed in Section 2.5.1. In 2022 dollars, the airport averaged \$150,000 of operating revenue during FY 2015–2022. Development of access to a new hangar lease lot area and new electrified tie-downs will contribute to increased revenue. Using Birchwood Airport’s operating profits appears to offer a feasible option for repayment of the remaining cost of improvements, provided federal funding covers 93.75% of the cost.

Birchwood Airport does not charge a Passenger Facility Charge or landing fee. Neither of these additional charges would be applicable or practical, given its user base. As noted in the Aviation Activity Forecast, training operations far outnumber flight operations, and in 2019 there were only six enplanements.

If improvements were funded by the state’s general aviation fund and repaid from operating profits, that would result in a maximum cumulative draw of \$1.5–2.0 million, depending on the growth scenario.

8.2.2.3 Third Party Development

Past discussions have raised the possibility of private development or sponsorship of Birchwood Airport, as well as a transfer to the MOA. In the past, both Eklutna, Inc. and the MOA have expressed interest. However, the *Public Private Partnership Summary* (Agnew:Beck 2022) looked at this potential and concluded that a public-private partnership would not make sense for Birchwood Airport, due to its characteristics and profitability, unless a specific need is identified. The summary also noted that while there could be benefits to having a more attentive manager, many users opposed private operation of the airport for fears that it would result in higher fees and a shift to more commercial operations of the airport.

8.2.2.4 State Appropriations

The Legislature could appropriate funds to cover the state’s share of improvement costs. The current fiscal environment and monetary constraints could make it challenging to secure sufficient support, though with AIP grant funding and potentially some of the funds from the Bipartisan Infrastructure Law, the additional burden on the state could be greatly reduced.

8.2.2.5 Bonds

Another approach the state could take, as an alternative to an appropriation, would be to issue general obligation or revenue bonds to fund improvements. A revenue bond could be issued on Birchwood Airport’s operating profits, given its history of profitability. However, it is not clear how much of the required funding could be secured, which would depend on the bond’s interest rate. A general obligation bond could be issued for the remaining need. Due to the high interest rate environment in late 2023, bonding could be prohibitively costly.

8.2.3 Financial Implementation Analysis

This section provides a pro forma cash flow forecast for the preferred alternative using the three growth scenarios described in the Aviation Activity Forecast.

8.2.3.1 Preferred Alternative – Maintain Existing Gravel Runway

The preferred alternative maintains current runway operational procedures, prioritizes removing portions of aligned Taxiway A, resurfaces the gravel/ski Runway 03G/21G in its current location, and includes property acquisition to meet the need for additional hangar lease area and aircraft tie-downs. It would add new parking spaces, 73 tie-downs (8 of which would be for summer use only), and 16 acres of lease area (HDL, 2024). The estimated capital cost is \$68.04 million, as shown in the implementation plan. It is anticipated that all of the projects would be eligible for AIP grants. After the 93.75% federal share (FAA, 2019d), \$4.25 million would need to be covered with Birchwood Airport’s internally generated funds and other sources.

The preferred alternative is anticipated to have the same level of growth as Alternative 1 (0.20% to 0.86% annually, with proportional increases in revenues and expenses) and would see additional revenue and expense increases associated with expanded parking, tie-down, and lease areas. Specifically, tie-down and lease area revenue is expected to increase over time as additional spaces are added. Likewise, maintenance costs are expected to increase as the airport’s maintainable area (grows, and electricity costs are expected to increase with the addition of electrified tie-downs.

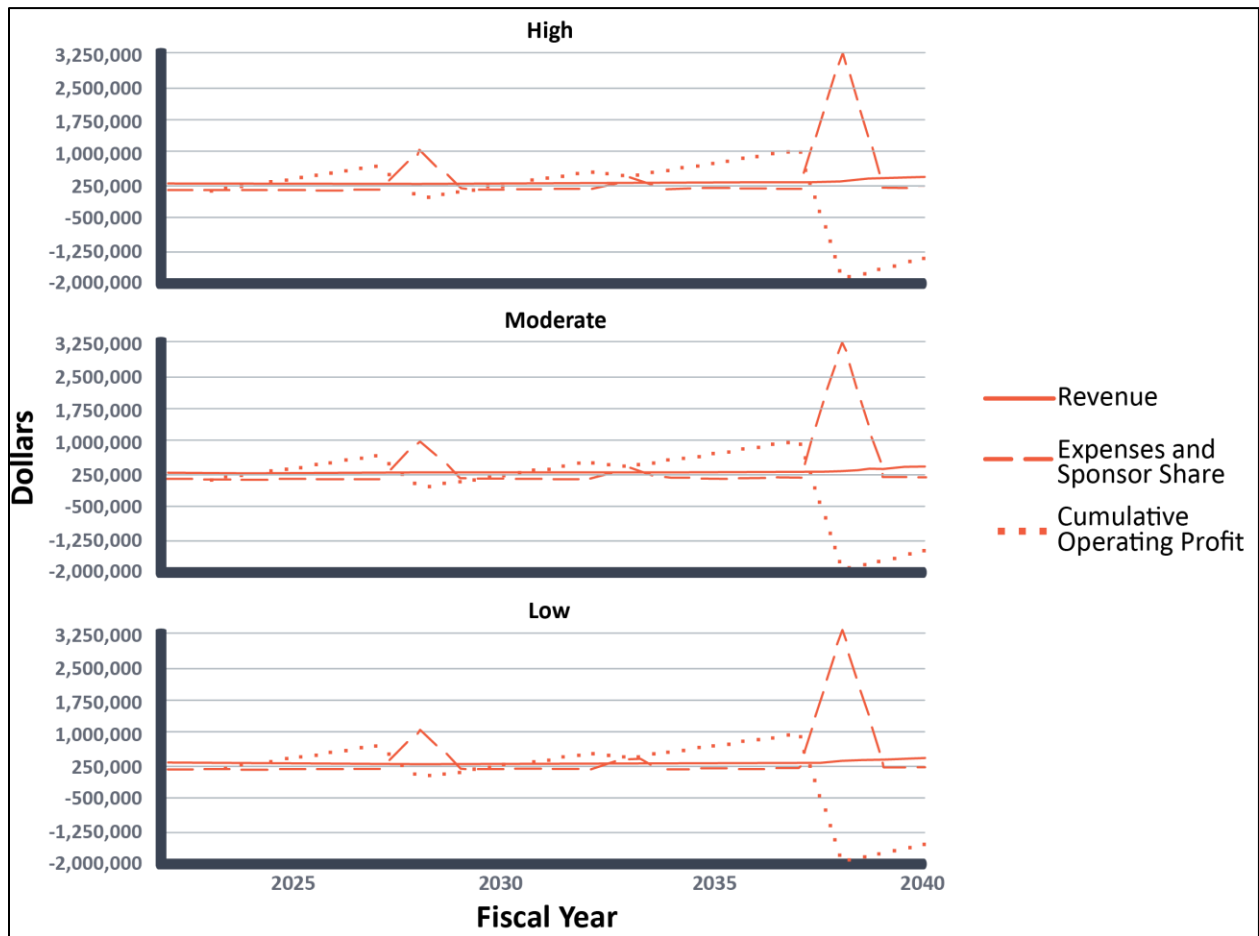
Table 36 presents assumptions about additional revenues and expenses resulting from the improvements.

Table 36: Revenue and Expense Assumptions for Alternative 2

Assumption		Value (All Dollar Amounts in 2022\$)	Notes
Tie-downs	Number added	13 year-round and 8 summer-only (assumed to be available 75% of year) in 2028 and 52 in 2038	From <i>Implementation Plan</i>
	Occupancy rate	81.4%	Calculated based on existing number of tie-downs, financial data for 2022, and current tie-down rate
Lease Lots	Area added	16 acres in 2038	From <i>Implementation Plan</i>
	Occupancy rate of new lease area	Increasing by 33% per year, from 33% in 2038 to 67% in 2039 to 100% in 2040	Assumed
Expenses	Maintenance cost increase	Increases in 2022 Services, Commodities, and Facilities expenses over time as maintainable areas are added in 2028 (5% increase), 2033 (2.5%), and 2038 (17.5%), resulting in a total increase of 25% by 2038	Assumed
	Electricity cost increase from tie-downs	0.8A draw from 12V/8A or 24V/4A charger 85% conversion efficiency for AC/DC 75% run time for battery chargers	Battery charge amperage draw from VDC Electronics (2023) and incremental electrical rates from Matanuska Electric Association (2023). AC/DC conversion efficiency and run time assumed.

Graph 6 shows the pro forma cash flow forecast based on the low, moderate, and high rates of growth, respectively, for 2023 through 2040. The graph includes the sponsor share of improvement costs as part of the expenses and includes a cumulative operating profit starting in 2023 to show the overall draw on airport funds over time. Table 37 through Table 39 present a detailed look at the annual forecasts. As seen in the graph and tables, the maximum cumulative draw would be between \$1.8 million and \$2.0 million in all scenarios.

After the completion of capital improvements, the airport’s annual net operating profit is expected to be larger than under Alternative 1, which would make up for the cost of improvements over time. The payback period could take several decades, however, and it is not practical to estimate due to the likelihood that over that time there would be additional capital improvements.



Graph 6: Projected Revenues and Expenses, Alternative 2, FY 2015 - 2040

Source: DOT&PF (2023b), HDL (2021, 2024), and Northern Economics, Inc. analysis

Table 37: Projected Revenues and Expenses, Alternative 2 Low Scenario, FY 2015–2040

Fiscal Year	Revenue	Expenses	Sponsor Share of Project	Operating Profit	Cumulative Operating Profit, 2023-
	Historical				
2015	246,088	78,962		167,126	
2016	236,641	67,598		169,043	
2017	234,963	157,135		77,828	
2018	277,082	113,585		163,497	
2019	290,416	109,524		180,892	
2020	310,484	166,913		143,571	
2021	316,153	167,974		148,179	
2022	280,022	145,310		134,712	
	Projected, Low Scenario				
2023	280,582	145,600	0	134,981	134,981
2024	281,143	145,892	0	135,251	270,232
2025	281,705	146,183	0	135,522	405,754
2026	282,268	146,476	0	135,793	541,547
2027	282,833	146,769	0	136,064	677,611
2028	294,721	154,146	870,375	-729,800	-52,189
2029	295,288	154,451	0	140,837	88,648
2030	295,856	154,756	0	141,099	229,747
2031	296,425	155,062	0	141,362	371,109
2032	296,995	155,369	0	141,626	512,735
2033	297,566	158,408	243,250	-104,092	408,643
2034	298,139	158,721	0	139,417	548,060
2035	298,712	159,035	0	139,677	687,737
2036	299,287	159,350	0	139,937	827,674
2037	299,863	159,666	0	140,197	967,871
2038	358,222	183,878	3,138,625	-2,964,281	-1,996,410
2039	386,515	184,233	0	202,282	-1,794,127
2040	414,105	184,589	0	229,517	-1,564,611

Source: DOT&PF (2023b), HDL (2021, 2024), and Northern Economics, Inc. analysis

Table 38: Projected Revenues and Expenses, Alternative 2 Moderate Scenario, FY 2015 - 2040

Fiscal Year	Revenue	Expenses	Sponsor Share of Project	Operating Profit	Cumulative Operating Profit, 2023-
	Historical				
2015	246,088	78,962		167,126	
2016	236,641	67,598		169,043	
2017	234,963	157,135		77,828	
2018	277,082	113,585		163,497	
2019	290,416	109,524		180,892	
2020	310,484	166,913		143,571	
2021	316,153	167,974		148,179	
2022	280,022	145,310		134,712	
	Projected, Moderate Scenario				
2023	281,814	146,240	0	135,574	135,574
2024	283,617	147,176	0	136,442	272,016
2025	285,432	148,118	0	137,315	409,330
2026	287,259	149,066	0	138,194	547,524
2027	289,098	150,020	0	139,078	686,602
2028	302,270	158,207	870,375	-726,312	-39,710
2029	304,132	159,209	0	144,923	105,213
2030	306,006	160,217	0	145,789	251,001
2031	307,892	161,232	0	146,660	397,661
2032	309,790	162,253	0	147,537	545,198
2033	311,700	166,147	243,250	-97,697	447,502
2034	313,623	167,200	0	146,423	593,925
2035	315,557	168,259	0	147,298	741,223
2036	317,505	169,325	0	148,179	889,402
2037	319,464	170,398	0	149,066	1,038,468
2038	381,164	196,776	3,138,625	-2,954,238	-1,915,769
2039	413,133	197,996	0	215,137	-1,700,632
2040	444,616	199,223	0	245,393	-1,455,239

Source: DOT&PF (2023b), HDL (2021, 2024), and Northern Economics, Inc. analysis

Table 39: Projected Revenues and Expenses, Alternative 2 High Scenario, FY 2015–2040

Fiscal Year	Revenue	Expenses	Sponsor Share of Project	Operating Profit	Cumulative Operating Profit, 2023-
Historical					
2015	246,088	78,962		167,126	
2016	236,641	67,598		169,043	
2017	234,963	157,135		77,828	
2018	277,082	113,585		163,497	
2019	290,416	109,524		180,892	
2020	310,484	166,913		143,571	
2021	316,153	167,974		148,179	
2022	280,022	145,310		134,712	
Projected, High Scenario					
2023	282,430	146,559	0	135,870	135,870
2024	284,859	147,820	0	137,039	272,909
2025	287,308	149,091	0	138,217	411,126
2026	289,779	150,373	0	139,406	550,532
2027	292,271	151,666	0	140,605	691,137
2028	306,107	160,272	870,375	-724,540	-33,402
2029	308,642	161,636	0	147,007	113,604
2030	311,199	163,011	0	148,188	261,792
2031	313,778	164,399	0	149,379	411,171
2032	316,379	165,798	0	150,581	561,752
2033	319,003	170,145	243,250	-94,393	467,360
2034	321,649	171,594	0	150,054	617,414
2035	324,318	173,056	0	151,262	768,676
2036	327,009	174,530	0	152,480	921,156
2037	329,724	176,016	0	153,708	1,074,864
2038	393,212	203,550	3,138,625	-2,948,964	-1,874,100
2039	427,157	205,247	0	221,910	-1,652,189
2040	460,743	206,958	0	253,785	-1,398,404

Source: DOT&PF (2023b), HDL (2021, 2024), and Northern Economics, Inc. analysis

8.2.4 Revenue Enhancement

Revenue enhancements are additional sources of revenue outside of aeronautical activities. FAA (2015) notes that these revenues could include concession, airline, and non-aeronautical revenues.

As the level of activity at the airport grows and additional tie-downs and lease areas are available, access by adjacent landowners like Eklutna should become more attractive and could be a new source of income.

A high level of snow removal service has minimized impacts of snow on pilots’ operating days, with the greatest impacts felt by commercial users. The high level of service results in a higher cost for airport operations, however, and adjusting snow removal plans or investigating options for private maintenance could reduce this cost.

Birchwood Airport does not have an on-site manager, with some users seeing this as a positive and others as a negative. As the level of use grows, a part-time on-site airport manager might help to reduce communications issues and allow for faster resolution. Though no DOT&PF airports have a private manager, providing one would be an option for adding on-site management. A formal analysis could help to determine the trade-off between the additional cost of management and the benefit, potentially in the form of incrementally increased revenues, it would provide.

8.3 Conclusion

This plan has evaluated the cost and funding of the recommended alternative, Alternative 2, with an estimated cost of \$68.04 million. The Implementation Plan anticipates FAA funding will cover 93.75% of the cost of improvements, resulting in a sponsor share of \$4.25 million the state will need to cover. While Bipartisan Infrastructure Law money may provide some additional federal support for the airport, the analysis finds that improvements could be funded by a draw from the state's general aviation fund that would not exceed \$2.0 million and would be repaid through additional revenues over time.

The No Build alternative would not incur additional capital expenses nor draw from the state's general aviation fund; it would continue to generate an operating profit that would flow into that fund. However, the alternative does not mitigate any compliance issues and could adversely impact future AIP funding eligibility, which could make needed improvements (to address, at a minimum, wear and tear) a greater burden on the airport and general aviation fund over time.

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Appendix A
Airport Inspection Report

MEMORANDUM

DATE: June 30, 2020

TO: Jessica Wuttke-Campoamor, Central Region DOT&PF Project Manager

FROM: Tor Anderzen, PE

RE: Existing Airport Conditions Observed During Birchwood Airport Site Inspection

HDL Engineering Consultants, LLC (HDL) completed a site investigation of the Birchwood Airport on June 23, 2020. The investigation was performed by Tor Anderzen, P.E. and Tae Voigt between 8:00 AM and 1:30 PM. The weather at the time of the investigation was overcast with light winds.

Tor and Tae started the investigation by meeting ADOT&PF Maintenance Superintendent, Kurt Koehler, to discuss the general condition of the airport and any known deficiencies. Following the meeting, they performed a “walk-through” of the airport areas. The following observations were noted:

Runway 02L/20R:

- Runway dimensions are 4,010 feet by 100 feet.
- The runway surface was paved in 2013 and is in good condition.
- Pavement markings are worn and are in fair condition, as noted in the 2019 5010 inspection.
- Airport users and maintenance noted safety concerns associated with the location of the RSA fence line along Runway 2L.
- Runway lights are in fair condition.

Runway 02R/20L:

- Runway dimensions are 2,200 feet by 50 feet.
- This runway is primarily used by aircraft with tundra tires in summer and ski equipped aircraft in winter.
- The north 600 feet of the runway is paved, this part of the runway was rehabilitated in 2018 and is in good condition. So are the pavement markings.
- The southern 1,600 feet of the runway is surface with gravel and in fair condition.
- During the inspection it was noted that pilots using 2R landed before the runway and landed on the Taxiway A instead. This method of landing makes the 4-foot fence and the trees just outside airport property a concern upon landing.
- Cones runway edge markers are in fair condition.

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Runway Safety Areas:

- A portion of the RSA and the entire RPZ are not on airport property for Runway 2L.
- Information has been distributed to lease lot owners informing them not to plow within 10 feet of lighting structures. At times individual leaseholders plow after DOT&PF maintenance and leave snow piled in unauthorized areas.

Taxiways:

- Taxiways A and B are parallel taxiways to Runway 02L/20R. Taxiway A is 240 feet from the runway centerline, Taxiway B is 300 feet
- Taxiways C, D, E, and G connect the parallel taxiways to Runway 02L/20R.
- All taxiways except the southern portion of Taxiway A are equipped with medium intensity taxiway edge lights (MITL). Lights are operable and in fair condition. The Maintenance Superintendent reported that the existing constant current regulators are overloaded and would like the lights converted to LEDs or a new regulator.
- Taxiway B lights extend almost to the new building on the southwest side and are hidden by building materials.
- The paved portion of Taxiway A prior to the Runway 20L safety area is in poor condition with weeds growing through cracks in the pavement.
- Taxiway B, C, D, E, and G were repaved in 2019 – pavement condition and markings are in good condition,

Signage:

- Runway Signs: At all hold locations there are L-858 Style 2, Class 2 signs that were installed in May, 2005. Signs are operable and in fair condition.

Aprons

- The airport has three primary aprons: the Northeast, the Southeast, and the West apron. There is also a transient apron that provides short-term tiedown areas available to transient pilots.
- The Northeast Apron was reconstructed and paved in 2019 and the pavement is in good condition. The apron measures 424 feet by 920 feet and provides eighty (80) 25-foot by 20-foot tie-down spaces. Of these 80 spaces, sixteen (16) include additional 41-foot wide wingtip tie-downs and sixty-four (64) include additional 38-foot wide wingtip tie-downs.
- The Southeast Apron was reconstructed and paved in 2019 and the pavement is in good condition. The apron varies in width between 150 feet and 233 feet over its 1,000-foot length. It provides thirty-eight (38) 25-foot by 20-foot tie-downs for lease. The apron is primarily used by tenants with smaller aircraft using tundra tires or skis that rely on Runway 02R/20L for their operations.
- The west apron measures 48 feet by 3,151 feet and is located between Taxiway B and the lease lots on the west side of the airport. The southern 1,400 feet of the west apron is gravel and is in fair condition. The paved portion of the apron was reconstructed and paved in 2019 and is in good condition. There is no aircraft parking on the west apron.

- The transient apron measures 140 feet by 226 feet and was reconstructed and paved in 2019. There are seven (7) 25-foot by 20-foot tie-downs available on the transient apron, three include additional 36-foot wingtip tie-downs and four include additional 38-foot wingtip tie-downs.

Visual Aids:

- Lighted wind cone and segmented circle markers are installed in the infield area between Runway 02L/20R and Taxiway B. The wind cone was replaced in 2005 and is nearing the end of its useful life.
- There is an unlit supplemental wind cone installed east of Runway 02R/20L. The wind cone was erected and is maintained by local pilots. It is not an official visual aid. It currently sits on a moveable foundation, is in poor condition, and is not correctly sited for its application.
- The segmented circle markers are in very good condition and are at most a few years old, the as-built from the 2013 runway construction does not include installation of segmented circle markers. The segmented circle markers include traffic pattern indicators directing circling traffic to the west of the field.
- Airport Beacon is installed on a 51-foot mast that was erected in 1977. The overall height of the mast and beacon is approximately 62 feet. The beacon has likely been replaced by maintenance staff at a later date. The mast and beacon are in good operational condition.
- Runway 20R is equipped with visual approach slope indicators (VASIs) that are owned and maintained by DOT&PF. The 4 Box VASI, type FA-9458, was replaced in April 2005 and is in operational and fair condition.
- Runway 02L/20R has medium intensity edge lights (MIRL) that are in fair condition. Existing light fixtures contain incandescent bulbs. DOT&PF maintenance noted that the regulator is overloaded and expressed their preference to switch to LED style fixtures.

Weather Equipment:

- The airport is equipped with a Type III-B Automated Weather Observation System (AWOS) located on the west side of the airfield, adjacent to the transient apron. The AWOS is reporting data and appears to be in good condition. However, the AWOS is located within 600 feet of nearby hangars, which does not meet FAA siting criteria.

Airport Facilities:

- Access to the regulator building is located next to an existing lease lot, which could make construction on or inside the building difficult. The L-282 regulators are single phase. There are two regulators in use and one spare. The labeling of "Runway" and "Spare" are not correct. DOT&PF maintenance noted that the regulators are overloaded. Maintenance is not aware of any lighting projects within the last 26 years. However, DOT&PF maintenance expressed that they would like to see LED lights used at the airport.

- DOT&PF does not maintain Airport Pilots Lounge located on the Transient Apron. building is part of a legislative grant from 1979/81. The septic has reportedly failed and will need work.
- The Snow Removal and Equipment Building has four bays. Two bays are used by the Chugiak Fire Department for free for perpetuity as part of the legislative grant from 1979/81.
- The airport perimeter fence is overgrown with vegetation. The gates are constantly left open and fence does not keep moose out in some areas. Users suggested adding a one-way moose gate to help direct moose out of the airfield.
- There are eight general use gates (1, 2, 12, 18, 19, A, B, C) and fourteen personal use gates (3-11, & 13-17). Most gates are left open or are in poor condition. Security is an issue due to animal, traffic, and people incursions. People are often seen walking dogs off leash on airport property.

Airport Maintenance:

- During the winter snow plowing of runway, taxiways, and aprons is done by DOT&PF airport maintenance. Snow plowing of lease lots is done by the individual leaseholders.

Appendix B
Facilities Standards Table

Design Standards Table (Critical Aircraft: Cessna 182)

Component	Existing Condition	A-I Small (Existing)	A-I Small (Ultimate)
Runway 02L/20R, ADG A-I (Small), visibility minimum not lower than 1 mile			
Runway Design			
Length	4,012	3,350'	4,600'
Width	100'	60'	60'
Shoulder Width	10'	10'	10'
Runway Surface	Asphalt	Asphalt	Asphalt
Pavement Strength (pounds)	12,500	12,500	12,500
Runway Markings	Non Precision	Non Precision	Non Precision
Runway Lighting	MIRL	MIRL	MIRL
Blast Pad Width	N/A	N/A	N/A
Blast Pad Length	N/A	N/A	N/A
Alignment (based on AGIS 2011-2020 wind data)	99.89% crosswind coverage at 10.5kts	>95% crosswind coverage at 10.5kts	>95% crosswind coverage at 10.5kts
Runway Protection			
Runway Safety Area (RSA)			
RSA Length Beyond Runway End	240' (02L) 240' (20R)	240' (02L) 240' (20R)	240' (02L) 240' (20R)
RSA Width	120'	120'	120'
Runway Object Free Area (ROFA)			
ROFA Beyond Runway End	240' (02L) 200' (20R)	240' (02L) 240' (20R)	240' (02L) 240' (20R)
ROFA Prior to Threshold	200' (20R) 240' (02L)	240' (02L) 240' (20R)	240' (02L) 240' (20R)
ROFA Width	500'	250'	250'
Runway Obstacle Free Zone (ROFZ)			
ROFZ Length	4,412'	3,750'	4,412'
ROFZ Width	250'	250'	250'
Runway Protection Zone (RPZ)			
RPZ Inner Width	250'	250'	500'
RPZ Outer Width	450'	450'	700'
RPZ Length	1,000'	1,000'	1,000'
Runway Separation			
Holding Position	125'	125'	125'
Aircraft Parking Area	330'/380'	125'	125'
Parallel Runway	200'	N/A (No Simultaneous Ops)	200'
Parallel Taxiway	240' (TW A); 300' (TW B)	150'	150'
Helicopter Touchdown Pad	N/A	Refer to AC 150-5390-2C	Refer to AC 150-5390-2C

NOTES

Design Standards Table (Critical Aircraft: Cessna 180)

Component	Existing Condition	A-I Small (Existing)	A-I Small (Ultimate)
Runway 02R/20L, ADG A-I (Small), visibility minimum not lower than 1 mile			
Runway Design			
Length	1,802'	3,550'	1,802
Width	50'	60'	60'
Shoulder Width	10'	10'	10'
Runway Surface	Gravel ¹	Gravel ¹	Gravel ¹
Pavement Strength (pounds)	12,500	12,500	12,500
Runway Markings	N/A ²	N/A ²	N/A ²
Runway Lighting	Retro Reflective Markers	Retro Reflective Markers	Retro Reflective Markers
Blast Pad Width	N/A	N/A	N/A
Blast Pad Length	N/A	N/A	N/A
Alignment (based on AGIS 2011-2020 wind data)	99.89% crosswind coverage at 10.5kts	>95% crosswind coverage at 10.5kts	>95% crosswind coverage at 10.5kts
Runway Protection			
Runway Safety Area (RSA)			
RSA Length Beyond Runway End	240' (02R) 240' (20L)	240' (02R) 240' (20L)	240' (02R) 240' (20L)
RSA Width	120'	120'	120'
Runway Object Free Area (ROFA)			
ROFA Beyond Runway End	240' (02R) 240' (20L)	240' (02R) 240' (20L)	240' (02R) 240' (20L)
ROFA Prior to Threshold	240' (02R) 240' (20L)	240' (02R) 240' (20L)	240' (02R) 240' (20L)
ROFA Width	250'	250'	250'
Runway Obstacle Free Zone (ROFZ)			
ROFZ Length	2,602'	4,410'	2,602
ROFZ Width	250'	250'	250'
Runway Protection Zone (RPZ)			
RPZ Inner Width	250'	250'	250'
RPZ Outer Width	450'	450'	450'
RPZ Length	1,000'	1,000'	1,000'
Runway Separation			
Holding Position	125'	125'	125'
Aircraft Parking Area	125'	125'	125'
Parallel Runway	200'	N/A (No Simultaneous Ops)	200'
Parallel Taxiway	0' (TW A) / 540' (TW B)	150'	540' (TW B)
Helicopter Touchdown Pad	N/A	Refer to AC 150-5390-2C	Refer to AC 150-5390-2C

NOTES

¹ The north 600' of the runway is paved with Asphalt

² The paved portion of Runway 20L has visual markings

Appendix C
Engineer's Estimates

BIRCHWOOD AIRPORT
Near-Term Airport Capital Improvement Projects (0 to 5 Years)
Reconfigure Taxiways and Rehab Runway 03G/21G

Project	Title	Total Project Estimate (\$)	Fiscal Year	AIP Funding (\$)	Sponsor Share (\$)	Fig. 1: Near-Term Project Callout
BCV-NT-1	Remove Existing Parallel Taxiway "A"	415,000	2028	389,063	25,938	NT-1
BCV-NT-2	Construct New Taxiway "A"	715,500	2028	670,781	44,719	NT-2
BCV-NT-3	Reconfigure Existing Connecting Taxiway "D"	1,123,500	2028	1,053,281	70,219	NT-3
BCV-NT-4	Remove Existing Connecting Taxiway "E"	181,500	2028	170,156	11,344	NT-4
BCV-NT-5	Construct Connecting Taxiway "F"	972,500	2028	911,719	60,781	NT-5
BCV-NT-6	Install Supplemental Wind Cone	116,500	2028	109,219	7,281	NT-6
BCV-NT-7	Reconstruct Runway 03G/21G (1,800'x60')	2,731,000	2028	2,560,313	170,688	NT-7
BCV-NT-8	Expand Northeast Apron	2,903,000	2028	2,721,563	181,438	NT-8
BCV-NT-9	Construct Summer Tie-Down/Winter Snow Storage Area	752,500	2028	705,469	47,031	NT-9
BCV-NT-10	RPZ Land Acquisition	190,500	2028	178,594	11,906	NT-10
BCV-NT-11	Trim Trees in Avigation Easements that are Existing Obstructions	191,500	2028	179,531	11,969	NT-11
BCV-NT-12	Construct New Perimeter Fencing	381,000	2028	357,188	23,813	NT-12
BCV-NT-13	Rehabilitate Runway 03/21 Edge Lighting	2,712,500	2028	2,542,969	169,531	NT-13
BCV-NT-14	Install PAPIs on Runway 03/21	539,500	2028	505,781	33,719	NT-14
Near-Term Project Group Total:		13,926,000		13,055,625	870,375	

Remove Existing Parallel Taxiway "A"
BCV-NT (1)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 3,000.00	\$ 3,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 5,000.00	\$ 5,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	5,400 C.Y.	\$ 15.00	\$ 81,000.00
P152.440.0000	AREA GRADING	10,800 S.Y.	\$ 3.00	\$ 32,400.00
P160.010.0000	EXCAVATION OF PAVEMENT	3,000 S.Y.	\$ 6.00	\$ 18,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 S.Y.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 8,000.00	\$ 8,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
T901.020.0000	SEEDING	1,200 POUND	\$ 20.00	\$ 24,000.00
T905.010.0020	TOPSOILING, CLASS B	10,800 S.Y.	\$ 3.00	\$ 32,400.00
Subtotal Construction				\$ 223,300.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 44,660.00
Design Percent/Amount:	12%	\$ 26,796.00
Overall Project Contingency Percent/Amount:	20%	\$ 44,660.00
4 Year Inflation	@ 5%	<u>\$ 48,100.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 387,516.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: \$ 27,242.37

Project Estimate Total: \$ 414,758.37

Construct New Taxiway "A"
BCV-NT (2)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 4,000.00	\$ 4,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 8,000.00	\$ 8,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	1,100 EACH	\$ 5.00	\$ 5,500.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	1,100 L.F.	\$ 2.00	\$ 2,200.00
L108.070.0000	GROUND ROD	10 EACH	\$ 230.00	\$ 2,300.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	1,100 L.F.	\$ 50.00	\$ 55,000.00
L125.040.0000	TAXIWAY EDGE LIGHT, L-861-T	6 EACH	\$ 2,500.00	\$ 15,000.00
L125.130.0000	AIRPORT SIGN, L-858	2 EACH	\$ 10,000.00	\$ 20,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 3,000.00	\$ 3,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	2,300 C.Y.	\$ 15.00	\$ 34,500.00
P154.020.0000	SUBBASE COURSE	3,500 C.S.	\$ 25.00	\$ 87,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	500 TON	\$ 30.00	\$ 15,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	400 TON	\$ 50.00	\$ 20,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	180 TON	\$ 150.00	\$ 27,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	10 TON	\$ 1,000.00	\$ 9,540.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 20,000.00	\$ 20,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	2,700 S.Y.	\$ 3.50	\$ 9,450.00
T901.020.0000	SEEDING	100 POUND	\$ 55.00	\$ 5,500.00
T905.010.0020	TOPSOILING, CLASS B	700 S.Y.	\$ 3.00	\$ 2,100.00

Subtotal Construction **\$ 385,100.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 77,020.00
Design Percent/Amount:	12%	\$ 46,212.00
Overall Project Contingency Percent/Amount:	20%	\$ 77,020.00
4 Year Inflation	@ 5%	\$ 83,000.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 668,352.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 46,985.15**

Project Estimate Total: \$ 715,337.15

Reconfigure Existing Connecting Taxiway "D"
BCV-NT-3

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 6,000.00	\$ 6,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 12,000.00	\$ 12,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	1,600 L.F.	\$ 5.00	\$ 8,000.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	1,600 L.F.	\$ 2.00	\$ 3,200.00
L108.070.0000	GROUND ROD	10 EACH	\$ 230.00	\$ 2,300.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	1,600 L.F.	\$ 50.00	\$ 80,000.00
L125.040.0000	TAXIWAY EDGE LIGHT, L-861-T	10 EACH	\$ 2,500.00	\$ 25,000.00
L125.070.0000	REMOVE RUNWAY AND TAXIWAY LIGHT	5 EACH	\$ 900.00	\$ 4,500.00
L125.110.0000	RELOCATE EXISTING AIRPORT SIGN, TYPE L-858	2 EACH	\$ 3,500.00	\$ 7,000.00
L125.130.0000	AIRPORT SIGN, L-858	3 EACH	\$ 10,000.00	\$ 30,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 5,000.00	\$ 5,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	3,000 C.Y.	\$ 15.00	\$ 45,000.00
P152.440.0000	AREA GRADING	2,800 S.Y.	\$ 3.00	\$ 8,400.00
P154.020.0000	SUBBASE COURSE	5,600 TON	\$ 25.00	\$ 140,000.00
P160.010.0000	EXCAVATION OF PAVEMENT	2,700 S.Y.	\$ 6.00	\$ 16,200.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	500 TON	\$ 30.00	\$ 15,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	1,000 TON	\$ 50.00	\$ 50,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	200 TON	\$ 150.00	\$ 30,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	11 TON	\$ 1,000.00	\$ 10,600.00
P620.010.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P620.060.0000	PAINTED MARKING REMOVAL	1 L.S.	\$ 3,000.00	\$ 3,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 S.Y.	\$ 15,000.00	\$ 15,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	4,200 S.Y.	\$ 3.50	\$ 14,700.00
T901.020.0000	SEEDING	400 POUND	\$ 55.00	\$ 22,000.00
T905.010.0020	TOPSOILING, CLASS B	3,800 S.Y.	\$ 3.00	\$ 11,400.00

Subtotal Construction \$ 604,800.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 120,960.00
Design Percent/Amount:	12%	\$ 72,576.00
Overall Project Contingency Percent/Amount:	20%	\$ 120,960.00
4 Year Inflation	@ 5%	<u>\$ 130,300.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 1,049,596.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% \$ 73,786.60

Project Estimate Total: \$ 1,123,382.60

Remove Existing Connecting Taxiway "E"

BCV-NT (4)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 1,000.00	\$ 1,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 2,000.00	\$ 2,000.00
L125.070.0000	REMOVE RUNWAY AND TAXIWAY LIGHT	10 EACH	\$ 750.00	\$ 7,500.00
L125.250.0000	REMOVE AIRPORT SIGN	2 EACH	\$ 1,100.00	\$ 2,200.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 1,000.00	\$ 1,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	900 C.Y.	\$ 15.00	\$ 13,500.00
P152.440.0000	AREA GRADING	2,700 S.Y.	\$ 3.00	\$ 8,100.00
P160.010.0000	EXCAVATION OF PAVEMENT	2,600 S.Y.	\$ 6.00	\$ 15,600.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 7,500.00	\$ 7,500.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
T901.020.0000	SEEDING	300 POUND	\$ 55.00	\$ 16,500.00
T905.010.0020	TOPSOILING, CLASS B	2,700 S.Y.	\$ 3.00	\$ 8,100.00

Subtotal Construction **\$ 97,500.00**

Construction Engineering (CENG) Percent/Amount: 20% \$ 19,500.00

Design Percent/Amount: 12% \$ 11,700.00

Overall Project Contingency Percent/Amount: 20% \$ 19,500.00

4 Year Inflation @ 5% **\$ 21,000.00**

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 169,200.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 11,894.76**

Project Estimate Total: \$ 181,094.76

Construct Connecting Taxiway "F"
BCV-NT (5)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 5,000.00	\$ 5,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 10,000.00	\$ 10,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	1,400 EACH	\$ 5.00	\$ 7,000.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	1,400 L.F.	\$ 2.00	\$ 2,800.00
L108.070.0000	GROUND ROD	10 EACH	\$ 230.00	\$ 2,300.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	1,400 L.F.	\$ 50.00	\$ 70,000.00
L125.040.0000	TAXIWAY EDGE LIGHT, L-861-T	10 EACH	\$ 2,500.00	\$ 25,000.00
L125.130.0000	AIRPORT SIGN, L-858	4 EACH	\$ 10,000.00	\$ 40,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 5,000.00	\$ 5,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	2,100 C.Y.	\$ 15.00	\$ 31,500.00
P154.020.0000	SUBBASE COURSE	5,500 TON	\$ 25.00	\$ 137,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 7,500.00	\$ 7,500.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	500 TON	\$ 30.00	\$ 15,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	1,400 TON	\$ 50.00	\$ 70,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	200 TON	\$ 150.00	\$ 30,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	11 TON	\$ 1,000.00	\$ 10,600.00
P620.010.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
T901.020.0000	SEEDING	100 POUND	\$ 55.00	\$ 5,500.00
T905.010.0020	TOPSOILING, CLASS B	1,000 S.Y.	\$ 3.00	\$ 3,000.00

Subtotal Construction **\$ 523,200.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$	104,640.00
Design Percent/Amount:	12%	\$	62,784.00
Overall Project Contingency Percent/Amount:	20%	\$	104,640.00
4 Year Inflation	@ 5%	\$	112,800.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 908,064.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 63,836.90**

Project Estimate Total: \$ 971,900.90

Install Supplemental Wind Cone
BCV-NT (6)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 2,000.00	\$ 2,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 2,000.00	\$ 2,000.00
L107.011.0008	8-FEET LIGHTED WIND CONE, SUPPLEMENTAL, IN PLACE	1 EACH	\$ 25,000.00	\$ 25,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 5,000.00	\$ 5,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 3,000.00	\$ 3,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
T901.020.0000	SEEDING	30 POUND	\$ 55.00	\$ 1,650.00
T905.010.0020	TOPSOILING, CLASS B	300 S.Y.	\$ 3.00	\$ 900.00
Subtotal Construction				\$ 62,600.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 12,520.00
Design Percent/Amount:	12%	\$ 7,512.00
Overall Project Contingency Percent/Amount:	20%	\$ 12,520.00
4 Year Inflation	@ 5%	<u>\$ 13,500.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 108,652.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% \$ 7,638.24

Project Estimate Total: \$ 116,290.24

Reconstruct Runway 03G/21G (1,800'x60')

BCV-NT (7)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 40,000.00	\$ 40,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 14,000.00	\$ 14,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 4,000.00	\$ 4,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 27,000.00	\$ 27,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	11,100 C.Y.	\$ 15.00	\$ 166,500.00
P154.020.0000	SUBBASE COURSE	7,000 TON	\$ 25.00	\$ 175,000.00
P161.010.0000	RECYCLED ASPHALT PAVEMENT	5,100 S.Y.	\$ 40.00	\$ 204,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 20,000.00	\$ 20,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	13,200 TON	\$ 50.00	\$ 660,000.00
P660.030.0000	REFLECTIVE MARKER, TYPE II	46 EACH	\$ 200.00	\$ 9,200.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 40,000.00	\$ 40,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,000.00	\$ 2,000.00
T901.020.0000	SEEDING	1,200 POUND	\$ 55.00	\$ 66,000.00
T905.010.0020	TOPSOILING, CLASS B	10,800 S.Y.	\$ 3.00	\$ 32,400.00
Subtotal Construction				\$ 1,470,100.00
Construction Engineering (CENG) Percent/Amount:			20%	\$ 294,020.00
Design Percent/Amount:			12%	\$ 176,412.00
Overall Project Contingency Percent/Amount:			20%	\$ 294,020.00
4 Years Inflation			@ 5%	\$ 316,800.00
Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation):				\$ 2,551,352.00
Indirect Cost Allocation Plan (ICAP) Percent/Amount:			7.03%	\$ 179,360.05
Project Estimate Total:				\$ 2,730,712.05

Expand Northeast Apron
BCV-NT (8)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 50,000.00	\$ 50,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 15,000.00	\$ 15,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 4,000.00	\$ 4,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 30,000.00	\$ 30,000.00
L125.130.0000	AIRPORT SIGN, L-858	2 EACH	\$ 10,000.00	\$ 20,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 L.S.	\$ 100,000.00	\$ 100,000.00
L150.010.0000	WEATHERPROOF OUTLETS	1 L.S.	\$ 40,000.00	\$ 40,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	5,200 C.Y.	\$ 15.00	\$ 78,000.00
P154.020.0000	SUBBASE COURSE	24,000 TON	\$ 25.00	\$ 600,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 10,000.00	\$ 10,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	4,800 TON	\$ 30.00	\$ 144,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	1,700 TON	\$ 150.00	\$ 255,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	90 TON	\$ 1,000.00	\$ 90,100.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 8,000.00	\$ 8,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 7,000.00	\$ 7,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 L.S.	\$ 20,000.00	\$ 20,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,000.00	\$ 2,000.00
P650.010.0000	AIRCRAFT TIE-DOWN	13 EACH	\$ 1,500.00	\$ 19,500.00
P681.020.0000	GEOTEXTILE, STABILIZATION	15,500 S.Y.	\$ 3.50	\$ 54,250.00
T901.020.0000	SEEDING	200 EACH	\$ 55.00	\$ 11,000.00
T905.010.0020	TOPSOILING, CLASS B	1,600 S.Y.	\$ 3.00	\$ 4,800.00
Subtotal Construction				\$ 1,562,700.00
Construction Engineering (CENG) Percent/Amount:			20%	\$ 312,540.00
Design Percent/Amount:			12%	\$ 187,524.00
Overall Project Contingency Percent/Amount:			20%	\$ 312,540.00
4 Years Inflation			@ 5%	\$ 336,800.00
Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation):				\$ 2,712,104.00
Indirect Cost Allocation Plan (ICAP) Percent/Amount:			7.03%	\$ 190,660.91
Project Estimate Total:				\$ 2,902,764.91

Construct Summer Tie Down/Winter Snow Storage Area
BCV-NT (9)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 4,000.00	\$ 4,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 8,000.00	\$ 8,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	1,500 C.Y.	\$ 15.00	\$ 22,500.00
P154.020.0000	SUBBASE COURSE	6,000 TON	\$ 25.00	\$ 150,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 10,000.00	\$ 10,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	2,700 TON	\$ 50.00	\$ 135,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 6,000.00	\$ 6,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,500.00	\$ 1,500.00
P650.010.0000	AIRCRAFT TIE-DOWN	8 EACH	\$ 1,500.00	\$ 12,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	4,500 S.Y.	\$ 3.50	\$ 15,750.00
T901.020.0000	SEEDING	110 POUND	\$ 55.00	\$ 6,050.00
T905.010.0020	TOPSOILING, CLASS B	1,050 S.Y.	\$ 3.00	\$ 3,150.00
Subtotal Construction				\$ 405,000.00
Construction Engineering (CENG) Percent/Amount:			20%	\$ 81,000.00
Design Percent/Amount:			12%	\$ 48,600.00
Overall Project Contingency Percent/Amount:			20%	\$ 81,000.00
4 Years Inflation			@ 5%	\$ 87,300.00
Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation):				\$ 702,900.00
Indirect Cost Allocation Plan (ICAP) Percent/Amount:			7.03%	\$ 49,413.87
Project Estimate Total:				\$ 752,313.87

RPZ Land Acquisition
BCV-NT (10)

Est Earliest Date of Acquisition

2028

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	1 L.S.	RPZ Land Acquisition - 9.5 Acres	\$ 120,000	\$ 120,000

Subtotal **\$120,000**

Land Acquisition	0%	\$	-
DOT&PF Administration	5%	\$	6,000
Acquisition Services & Appraisal	12%	\$	14,400
Construction Management	0%	\$	-
Project Contingency	20%	\$	24,000
4 Years Inflation	@ 5%	\$	25,900
Estimated Total			\$ 190,300

Trim Trees in Avigation Easements That Are Existing Obstructions

BCV-NT (11)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 5,000.00	\$ 5,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 5,000.00	\$ 5,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 L.S.	\$ 10,000.00	\$ 10,000.00
P151.050.0000	SELECTIVE TREE REMOVAL	90 EACH	\$ 700.00	\$ 63,000.00
Subtotal Construction				<u>\$ 103,000.00</u>

Construction Engineering (CENG) Percent/Amount:	20%	\$ 20,600.00
Design Percent/Amount:	12%	\$ 12,360.00
Overall Project Contingency Percent/Amount:	20%	\$ 20,600.00
4 Years Inflation	@ 5%	<u>\$ 22,200.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 178,760.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% \$ 12,566.83

Project Estimate Total: \$ 191,326.83

Construct New Perimeter Fencing
BCV-NT (12)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
F162.010.0008	8-FEET CHAIN-LINK FENCE	3,000 L.S.	\$ 40.00	\$ 120,000.00
F162.190.0000	REMOVE FENCE	300 L.F.	\$ 15.00	\$ 4,500.00
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 2,000.00	\$ 2,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 2,000.00	\$ 2,000.00
P151.030.0000	CLEARING & GRUBBING	1.0 ACRE	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 3,000.00	\$ 3,000.00
P641.050.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 20,000.00	\$ 20,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,000.00	\$ 2,000.00
T901.020.0000	SEEDING	400 POUND	\$ 55.00	\$ 22,000.00
T905.010.0000	TOPSOILING, CLASS B	2,800 S.Y.	\$ 3.00	\$ 8,400.00

Subtotal Construction **\$ 204,900.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 40,980.00
Design Percent/Amount:	12%	\$ 24,588.00
Overall Project Contingency Percent/Amount:	20%	\$ 40,980.00
4 Years Inflation	@ 5%	\$ 44,200.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 355,648.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 25,002.05**

Project Estimate Total: \$ 380,650.05

Rehabilitate Runway 03/21 Edge Lighting
BCV-NT (13)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 42,000.00	\$ 42,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 14,000.00	\$ 14,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 4,000.00	\$ 4,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 28,000.00	\$ 28,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	10,000 L.F.	\$ 5.00	\$ 50,000.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	10,000 L.F.	\$ 2.00	\$ 20,000.00
L108.070.0000	GROUND ROD	50 EACH	\$ 230.00	\$ 11,500.00
L109.030.0000	ELECTRICAL ENCLOSURE AND FOUNDATION IN PLACE	1 EACH	\$ 300,000.00	\$ 300,000.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	9,900 L.F.	\$ 50.00	\$ 495,000.00
L125.030.0000	MEDIUM INTENSITY RUNWAY EDGE AND THRESHOLD LIGHT, L-861 AND L-861E	60 EACH	\$ 2,800.00	\$ 168,000.00
L125.070.0000	REMOVE RUNWAY AND TAXIWAY LIGHT	50 EACH	\$ 750.00	\$ 37,500.00
L125.110.0000	RELOCATE EXISTING AIRPORT SIGN, TYPE L-858	4 EACH	\$ 3,500.00	\$ 14,000.00
L125.130.0000	AIRPORT SIGN, L-858	4 EACH	\$ 10,000.00	\$ 40,000.00
L125.180.0000	TEMPORARY RUNWAY LIGHTING SYSTEM	1 L.S.	\$ 50,000.00	\$ 50,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 35,580.00	\$ 35,580.00
P152.010.0000	UNCLASSIFIED EXCAVATION	1,400 C.Y.	\$ 15.00	\$ 21,000.00
P160.010.0000	EXCAVATION OF PAVEMENT	900 S.Y.	\$ 6.00	\$ 5,400.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	50 TON	\$ 150.00	\$ 7,500.00
P401.020.5828	ASPHALT BINDER, PG 58-28	3 TON	\$ 1,000.00	\$ 2,650.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 L.S.	\$ 30,000.00	\$ 30,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 5,000.00	\$ 5,000.00
T901.020.0000	SEEDING	700 POUND	\$ 55.00	\$ 38,500.00
T905.010.0020	TOPSOILING, CLASS B	6,800 S.Y.	\$ 3.00	\$ 20,400.00

Subtotal Construction **\$ 1,460,000.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 292,000.00
Design Percent/Amount:	12%	\$ 175,200.00
Overall Project Contingency Percent/Amount:	20%	\$ 292,000.00
4 Years Inflation	@ 5%	<u>\$ 314,600.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 2,533,800.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 178,126.14**

Project Estimate Total: \$ 2,711,926.14

Install PAPIs on Runway 03/21

BCV-NT (14)

2028

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 3,000.00	\$ 3,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 13,000.00	\$ 13,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 13,000.00	\$ 13,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 6,000.00	\$ 6,000.00
L132.010.0010	INSTALL APPROACH LIGHTING AIDS, PAPI	1 L.S.	\$ 150,000.00	\$ 150,000.00
L132.020.0010	REMOVE APPROACH LIGHTING AIDS, PAPI (VASI)	1 L.S.	\$ 25,000.00	\$ 25,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	600 C.Y.	\$ 15.00	\$ 9,000.00
P154.020.0000	SUBBASE COURSE	1,700 TON	\$ 25.00	\$ 42,500.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 3,000.00	\$ 3,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
T901.020.0000	SEEDING	60 POUND	\$ 55.00	\$ 3,300.00
T905.010.0020	TOPSOILING, CLASS B	500 S.Y.	\$ 3.00	\$ 1,500.00
Subtotal Construction				\$ 290,300.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 58,060.00
Design Percent/Amount:	12%	\$ 34,836.00
Overall Project Contingency Percent/Amount:	20%	\$ 58,060.00
4 Years Inflation	@ 5%	\$ 62,600.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): \$ 503,856.00

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% \$ 35,421.08

Project Estimate Total: \$ 539,277.08

BIRCHWOOD AIRPORT
Mid-Term Airport Capital Improvement Projects (6 to 10 Years)
Apron Access and Parking Improvements

Project	Title	Total Project Estimate (\$)	Fiscal Year	AIP Funding (\$)	Sponsor Share (\$)	Fig. 2: Mid-Term Project Callout
BCV-MT-1	Construct Glider Staging Area / Aircraft Run-Up Area	533,500	2033	500,156	33,344	MT-1
BCV-MT-2	Pave Apron Area Between Taxiway "B" and Lease Lots	794,500	2033	744,844	49,656	MT-2
BCV-MT-3	Realign Access Road	1,583,500	2033	1,484,531	98,969	MT-3
BCV-MT-4	Construct Northeast Apron Vehicle Parking Area	752,000	2033	705,000	47,000	MT-4
BCV-MT-5	Construct Southeast Apron Vehicle Parking Area	228,500	2033	214,219	14,281	MT-5
Mid-Term Project Group Total:		3,892,000		3,648,750	243,250	

Construct Glider Staging Area/Aircraft Run-Up Area
BCV-MT (1)

2033

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 3,000.00	\$ 3,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 3,000.00	\$ 3,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 2,000.00	\$ 2,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	1,200 C.Y.	\$ 20.00	\$ 24,000.00
P154.020.0000	SUBBASE COURSE	3,500 TON	\$ 25.00	\$ 87,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 10,000.00	\$ 10,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	500 TON	\$ 30.00	\$ 15,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	200 TON	\$ 50.00	\$ 10,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	300 TON	\$ 150.00	\$ 45,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	16 TON	\$ 1,000.00	\$ 15,900.00
P620.010.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 5,000.00	\$ 5,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,000.00	\$ 2,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	2,700 S.Y.	\$ 3.50	\$ 9,450.00
T901.020.0000	SEEDING	30 POUND	\$ 55.00	\$ 1,650.00
T905.010.0020	TOPSOILING, CLASS B	300 S.Y.	\$ 3.00	\$ 900.00

Subtotal Construction **\$ 256,400.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 51,280.00
Design Percent/Amount:	12%	\$ 30,768.00
Overall Project Contingency Percent/Amount:	20%	\$ 51,280.00
9 Years Inflation	@ 4%	<u>\$ 108,500.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 498,228.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 35,025.43**

Project Estimate Total: \$ 533,253.43

Pave Apron Area Between Taxiway "B" and Lease Lots
 BCV-MT (2)

2033

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 4,000.00	\$ 4,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 4,000.00	\$ 4,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 2,000.00	\$ 2,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	2,500 C.Y.	\$ 15.00	\$ 37,500.00
P154.020.0000	SUBBASE COURSE	2,500 TON	\$ 25.00	\$ 62,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	1,600 TON	\$ 30.00	\$ 48,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	100 TON	\$ 50.00	\$ 5,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	900 TON	\$ 150.00	\$ 135,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	48 TON	\$ 1,000.00	\$ 47,700.00
P620.010.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 1,500.00	\$ 1,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 5,000.00	\$ 5,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00

Subtotal Construction **\$ 381,700.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 76,340.00
Design Percent/Amount:	12%	\$ 45,804.00
Overall Project Contingency Percent/Amount:	20%	\$ 76,340.00
9 Years Inflation	@ 4%	<u>\$ 161,600.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 741,784.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 52,147.42**

Project Estimate Total: \$ 793,931.42

Realign Access Road Outside of Runway 03G/21G OFZ

BCV-MT (3)

2033

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 30,000.00	\$ 30,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 8,000.00	\$ 8,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 4,000.00	\$ 4,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 L.S.	\$ 20,000.00	\$ 20,000.00
P151.030.0000	CLEARING & GRUBBING	1 ACRE	\$ 10,000.00	\$ 10,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	2,900 C.Y.	\$ 15.00	\$ 43,500.00
P154.020.0000	SUBBASE COURSE	12,700 TON	\$ 25.00	\$ 317,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	1,900 TON	\$ 30.00	\$ 57,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	600 TON	\$ 150.00	\$ 90,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	32 TON	\$ 1,000.00	\$ 31,800.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 15,000.00	\$ 15,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,500.00	\$ 2,500.00
P681.020.0000	GEOTEXTILE, STABILIZATION	7,900 S.Y.	\$ 3.50	\$ 27,650.00
T901.020.0000	SEEDING	1,000 POUND	\$ 55.00	\$ 55,000.00
T905.010.0020	TOPSOILING, CLASS B	9,000 S.Y.	\$ 3.00	\$ 27,000.00

Subtotal Construction **\$ 765,950.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$	153,190.00
Design Percent/Amount:	12%	\$	91,914.00
Overall Project Contingency Percent/Amount:	20%	\$	153,190.00
9 Years Inflation	@ 4%	\$	324,200.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 1,488,444.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 104,637.61**

Project Estimate Total: \$ 1,593,081.61

Construct Northeast Apron Vehicle Parking Area

BCV-MT (4)

2033

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 4,000.00	\$ 4,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 4,000.00	\$ 4,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	1,400 C.Y.	\$ 15.00	\$ 21,000.00
P154.020.0000	SUBBASE COURSE	6,600 TON	\$ 25.00	\$ 165,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	700 TON	\$ 30.00	\$ 21,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	350 TON	\$ 150.00	\$ 52,500.00
P401.020.5828	ASPHALT BINDER, PG 58-28	19 TON	\$ 1,000.00	\$ 18,550.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 7,000.00	\$ 7,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 1,000.00	\$ 1,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 500.00	\$ 500.00
P681.020.0000	GEOTEXTILE, STABILIZATION	4,000 S.Y.	\$ 3.50	\$ 14,000.00
T901.020.0000	SEEDING	260 POUND	\$ 55.00	\$ 14,300.00
T905.010.0020	TOPSOILING, CLASS B	2,500 S.Y.	\$ 3.00	\$ 7,500.00
	<i>RESTROOM FACILITIES</i>	1 L.S.	\$ 10,000.00	\$ 10,000.00

Subtotal Construction **\$ 361,400.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 72,280.00
Design Percent/Amount:	12%	\$ 43,368.00
Overall Project Contingency Percent/Amount:	20%	\$ 72,280.00
9 Years Inflation	@ 4%	\$ 153,000.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 702,328.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 49,373.66**

Project Estimate Total: \$ 751,701.66

Construct Southeast Apron Vehicle Parking Area
BCV-MT (5)

2033

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 1,000.00	\$ 1,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 1,000.00	\$ 1,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	800 C.Y.	\$ 15.00	\$ 12,000.00
P154.020.0000	SUBBASE COURSE	700 TON	\$ 25.00	\$ 17,500.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	400 TON	\$ 30.00	\$ 12,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	120 TON	\$ 150.00	\$ 18,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	6 TON	\$ 1,000.00	\$ 6,360.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 7,000.00	\$ 7,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL BY DIRECTIVE	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 500.00	\$ 500.00
T901.020.0000	SEEDING	10 POUND	\$ 55.00	\$ 550.00
T905.010.0020	TOPSOILING, CLASS B	100 S.Y.	\$ 3.00	\$ 300.00
	<i>RESTROOM FACILITIES</i>	1 L.S.	\$ 10,000.00	\$ 10,000.00

Subtotal Construction **\$ 109,700.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 21,940.00
Design Percent/Amount:	12%	\$ 13,164.00
Overall Project Contingency Percent/Amount:	20%	\$ 21,940.00
9 Years Inflation	@ 4%	\$ 46,400.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 213,144.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 14,984.02**

Project Estimate Total: \$ 228,128.02

BIRCHWOOD AIRPORT
Long-Term Airport Capital Improvement Projects (10 to 20 Years)
New GA Apron, Lease Areas, and Rehabilitate Runway 03/21

Project	Title	Total Project Estimate (\$)	Fiscal Year	AIP Funding (\$)	Sponsor Share (\$)	Fig. 3: Long-Term Project Callout
BCV-LT-1	Land & Easement Acquisition	1,280,500	2038	1,200,469	80,031	LT-1
BCV-LT-2	Construct New General Aviation Apron	13,490,500	2038	12,647,344	843,156	LT-2
BCV-LT-3	Construct Taxiway "A" Extension	525,000	2038	492,188	32,813	LT-3
BCV-LT-4	Develop Access to New Hangar Lease Lot Area	8,624,000	2038	8,085,000	539,000	LT-4
BCV-LT-5	Extend SE Apron Access Road to New GA Apron and Lease Lot Area	5,546,000	2038	5,199,375	346,625	LT-5
BCV-LT-6	Develop GA Apron Vehicle Parking Area	1,181,500	2038	1,107,656	73,844	LT-6
BCV-LT-7	Construct Access Road Improvements	4,425,500	2038	4,148,906	276,594	LT-7
BCV-LT-8	Construct New Perimeter Fencing	1,370,500	2038	1,284,844	85,656	LT-8
BCV-LT-9	Relocate Weather Station	599,000	2038	561,563	37,438	LT-9
BCV-LT-10	Rehabilitate Runway 03/21	13,175,500	2038	12,352,031	823,469	LT-10
Long-Term Project Group Total:		50,218,000		47,079,375	3,138,625	

Land Acquisition
 BCV-LT (1)

Est Earliest Date of Acquisition

2038

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	1 L.S.	Land Acquisition - 38.7 Acres	\$ 485,000	\$ 485,000
2	1 L.S.	Aviation Easement Acquisition - 26.2 Acres	\$ 195,000	\$ 195,000

Subtotal **\$680,000**

Land Acquisition	0%	\$	-
DOT&PF Administration	5%	\$	34,000
Acquisition Services & Appraisal	12%	\$	81,600
Construction Management	0%	\$	-
Project Contingency	20%	\$	136,000
14 Years Inflation	@ 3%	\$	348,600
Estimated Total		\$	1,280,200

Construct New General Aviation Apron
 BCV-LT (2)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 180,000.00	\$ 180,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 59,000.00	\$ 59,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 15,000.00	\$ 15,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 59,000.00	\$ 59,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	3,400 L.F.	\$ 5.00	\$ 17,000.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	3,400 L.F.	\$ 2.00	\$ 6,800.00
L108.070.0000	GROUND ROD	20 EACH	\$ 230.00	\$ 4,600.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	3,400 L.F.	\$ 50.00	\$ 170,000.00
L125.130.0000	AIRPORT SIGN, L-858	2 EACH	\$ 10,000.00	\$ 20,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 250,000.00	\$ 250,000.00
P151.030.0000	CLEARING & GRUBBING	10 ACRE	\$ 10,000.00	\$ 100,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	53,200 C.Y.	\$ 15.00	\$ 798,000.00
P152.440.0000	AREA GRADING	4,500 S.Y.	\$ 3.00	\$ 13,500.00
P154.020.0000	SUBBASE COURSE	115,100 TON	\$ 25.00	\$ 2,877,500.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	13,000 TON	\$ 30.00	\$ 390,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	4,400 TON	\$ 150.00	\$ 660,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	233 TON	\$ 1,000.00	\$ 233,200.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 20,000.00	\$ 20,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 TON	\$ 15,000.00	\$ 15,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 50,000.00	\$ 50,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 5,000.00	\$ 5,000.00
P650.010.0000	AIRCRAFT TIE-DOWN	52 EACH	\$ 1,000.00	\$ 52,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	39,900 S.Y.	\$ 3.50	\$ 139,650.00
T901.020.0000	SEEDING	800 POUND	\$ 55.00	\$ 44,000.00
T905.010.0020	TOPSOILING, CLASS B	7,200 S.Y.	\$ 3.00	\$ 21,600.00
Subtotal Construction				\$ 6,200,900.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 1,240,180.00
Design Percent/Amount:	12%	\$ 744,108.00
Overall Project Contingency Percent/Amount:	20%	\$ 1,240,180.00
14 Years Inflation	@ 3%	\$ 3,178,500.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 12,603,868.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 886,051.92**

Project Estimate Total: \$ 13,489,919.92

Construct Taxiway "A" Extension
 BCV-LT (3)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 3,000.00	\$ 3,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 5,000.00	\$ 5,000.00
L108.010.2008	UNDERGROUND CABLE #8 AWG, COPPER, 5KV FAA TYPE C, L-824	500 L.F.	\$ 5.00	\$ 2,500.00
L108.030.0006	#6 BARE COPPER GROUND CONDUCTOR	500 L.F.	\$ 2.00	\$ 1,000.00
L108.070.0000	GROUND ROD	3 EACH	\$ 230.00	\$ 690.00
L110.030.1002	RIGID STEEL CONDUIT, 2-INCH	500 L.F.	\$ 50.00	\$ 25,000.00
L125.040.0000	TAXIWAY EDGE LIGHT, L-861-T	10 EACH	\$ 2,500.00	\$ 25,000.00
L125.130.0000	AIRPORT SIGN, L-858	2 EACH	\$ 10,000.00	\$ 20,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 3,000.00	\$ 3,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	1,200 C.Y.	\$ 15.00	\$ 18,000.00
P154.020.0000	SUBBASE COURSE	1,900 TON	\$ 25.00	\$ 47,500.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	300 TON	\$ 30.00	\$ 9,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	200 TON	\$ 50.00	\$ 10,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	100 TON	\$ 150.00	\$ 15,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	5 TON	\$ 1,000.00	\$ 5,300.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	1,400 S.Y.	\$ 3.50	\$ 4,900.00
T901.020.0000	SEEDING	100 POUND	\$ 55.00	\$ 5,500.00
T905.010.0020	TOPSOILING, CLASS B	400 S.Y.	\$ 3.00	\$ 1,200.00

Subtotal Construction **\$ 241,100.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 48,220.00
Design Percent/Amount:	12%	\$ 28,932.00
Overall Project Contingency Percent/Amount:	20%	\$ 48,220.00
14 Years Inflation	@ 3%	\$ 123,600.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 490,072.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 34,452.06**

Project Estimate Total: \$ 524,524.06

Develop Access to New Hangar Lease Lot Area

BCV-LT (4)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 90,000.00	\$ 90,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 29,000.00	\$ 29,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 8,000.00	\$ 8,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 58,000.00	\$ 58,000.00
P151.030.0000	CLEARING & GRUBBING	6 ACRE	\$ 10,000.00	\$ 60,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	29,700 C.Y.	\$ 15.00	\$ 445,500.00
P154.020.0000	SUBBASE COURSE	64,300 TON	\$ 25.00	\$ 1,607,500.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	5,500 TON	\$ 30.00	\$ 165,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	2,000 TON	\$ 150.00	\$ 300,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	106 TON	\$ 1,000.00	\$ 106,000.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 2,000.00	\$ 2,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 15,000.00	\$ 15,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 30,000.00	\$ 30,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 5,000.00	\$ 5,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	22,300 S.Y.	\$ 3.50	\$ 78,050.00
T901.020.0000	SEEDING	600 POUND	\$ 55.00	\$ 33,000.00
T905.010.0020	TOPSOILING, CLASS B	5,400 S.Y.	\$ 3.00	\$ 16,200.00
	<i>ELECTRICAL UTILITY EXTENSION</i>	1 L.S.	\$ 446,820.00	\$ 446,820.00
	<i>NATURAL GAS PIPELINE EXTENSION</i>	1 L.S.	\$ 458,850.00	\$ 458,850.00
Subtotal Construction				\$ 3,963,900.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 792,780.00
Design Percent/Amount:	12%	\$ 475,668.00
Overall Project Contingency Percent/Amount:	20%	\$ 792,780.00
14 Years Inflation	@ 3%	\$ 2,031,900.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 8,057,028.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 566,409.07**

Project Estimate Total: \$ 8,623,437.07

Extend Southeast Apron Access Road to New GA Apron and Lease Lot Area
 BCV-LT (5)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 80,000.00	\$ 80,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 25,000.00	\$ 25,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 7,000.00	\$ 7,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 13,000.00	\$ 13,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 L.S.	\$ 20,000.00	\$ 20,000.00
L110.080.1002	HDPE CONDUIT, 2-INCH	4,000 L.F.	\$ 12.00	\$ 48,000.00
L108.050.1010	UNDERGROUND CABLE #10 AWG, COPPER, 600V, TYPE C, L-824	8,000 L.F.	\$ 6.00	\$ 48,000.00
L180.010.0000	HIGHWAY LIGHTING SYSTEM COMPLETE FOR AIRPORTS	1 L.S.	\$ 120,000.00	\$ 120,000.00
P151.030.0000	CLEARING & GRUBBING	8 ACRE	\$ 10,000.00	\$ 80,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	18,100 C.Y.	\$ 15.00	\$ 271,500.00
P154.020.0000	SUBBASE COURSE	50,800 TON	\$ 25.00	\$ 1,270,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	4,000 TON	\$ 30.00	\$ 120,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	1,200 TON	\$ 150.00	\$ 180,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	64 TON	\$ 1,000.00	\$ 63,600.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 15,000.00	\$ 15,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 30,000.00	\$ 30,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,500.00	\$ 2,500.00
P681.020.0000	GEOTEXTILE, STABILIZATION	18,200 S.Y.	\$ 3.50	\$ 63,700.00
T901.020.0000	SEEDING	900 POUND	\$ 55.00	\$ 49,500.00
T905.010.0020	TOPSOILING, CLASS B	9,100 S.Y.	\$ 3.00	\$ 27,300.00
Subtotal Construction				\$ 2,549,100.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 509,820.00
Design Percent/Amount:	12%	\$ 305,892.00
Overall Project Contingency Percent/Amount:	20%	\$ 509,820.00
14 Years Inflation	@ 3%	\$ 1,306,600.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 5,181,232.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 364,240.61**

Project Estimate Total: \$ 5,545,472.61

Develop GA Apron Vehicle Parking Area
 BCV-LT (6)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 6,000.00	\$ 6,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 6,000.00	\$ 6,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	5,300 C.Y.	\$ 15.00	\$ 79,500.00
P154.020.0000	SUBBASE COURSE	11,300 TON	\$ 25.00	\$ 282,500.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	800 TON	\$ 30.00	\$ 24,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	300 TON	\$ 150.00	\$ 45,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	16 TON	\$ 1,000.00	\$ 15,900.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 2,500.00	\$ 2,500.00
P641.050.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,000.00	\$ 1,000.00
P681.020.0000	GEOTEXTILE, STABILIZATION	4,000 S.Y.	\$ 3.50	\$ 14,000.00
T901.020.0000	SEEDING	200 POUND	\$ 55.00	\$ 11,000.00
T905.010.0020	TOPSOILING, CLASS B	1,200 S.Y.	\$ 3.00	\$ 3,600.00
	<i>RESTROOM FACILITIES</i>	1 L.S.	\$ 10,000.00	\$ 10,000.00
Subtotal Construction				\$ 543,000.00
Construction Engineering (CENG) Percent/Amount:			20%	\$ 108,600.00
Design Percent/Amount:			12%	\$ 65,160.00
Overall Project Contingency Percent/Amount:			20%	\$ 108,600.00
14 Years Inflation			@ 3%	<u>\$ 278,300.00</u>
Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation):				\$ 1,103,660.00
Indirect Cost Allocation Plan (ICAP) Percent/Amount:			7.03%	<u>\$ 77,587.30</u>
Project Estimate Total:				\$ 1,181,247.30

Construct Access Road Improvements
 BCV-LT (7)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 60,000.00	\$ 60,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 5,000.00	\$ 5,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 10,000.00	\$ 10,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 L.S.	\$ 20,000.00	\$ 20,000.00
L110.080.1002	HDPE CONDUIT, 2-INCH	3,000 L.F.	\$ 12.00	\$ 36,000.00
L108.050.1010	UNDERGROUND CABLE #10 AWG, COPPER, 600V, TYPE C, L-824	6,000 L.F.	\$ 6.00	\$ 36,000.00
L180.010.0000	HIGHWAY LIGHTING SYSTEM COMPLETE FOR AIRPORTS	1 L.S.	\$ 120,000.00	\$ 120,000.00
P151.030.0000	CLEARING & GRUBBING	8 ACRE	\$ 10,000.00	\$ 80,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	14,200 C.Y.	\$ 15.00	\$ 213,000.00
P154.020.0000	SUBBASE COURSE	39,800 TON	\$ 25.00	\$ 995,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 5,000.00	\$ 5,000.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	3,100 TON	\$ 30.00	\$ 93,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	900 TON	\$ 150.00	\$ 135,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	48 TON	\$ 1,000.00	\$ 47,700.00
P620.080.0000	ROADWAY PAINTING	1 L.S.	\$ 15,000.00	\$ 15,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 20,000.00	\$ 20,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,500.00	\$ 2,500.00
P681.020.0000	GEOTEXTILE, STABILIZATION	14,400 S.Y.	\$ 3.50	\$ 50,400.00
T901.020.0000	SEEDING	700 POUND	\$ 55.00	\$ 38,500.00
T905.010.0020	TOPSOILING, CLASS B	7,300 S.Y.	\$ 3.00	\$ 21,900.00
Subtotal Construction				\$ 2,034,000.00

Construction Engineering (CENG) Percent/Amount:	20%	\$ 406,800.00
Design Percent/Amount:	12%	\$ 244,080.00
Overall Project Contingency Percent/Amount:	20%	\$ 406,800.00
14 Years Inflation	@ 3%	\$ 1,042,600.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 4,134,280.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 290,639.88**

Project Estimate Total: \$ 4,424,919.88

Construct New Perimeter Fencing
 BCV-LT (8)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
F162.010.0008	8-FEET CHAIN-LINK FENCE	9,000 L.S.	\$ 40.00	\$ 360,000.00
F162.190.0000	REMOVE FENCE	7,300 L.F.	\$ 15.00	\$ 109,500.00
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 6,000.00	\$ 6,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 2,000.00	\$ 2,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 6,000.00	\$ 6,000.00
P151.030.0000	CLEARING & GRUBBING	3 ACRE	\$ 7,000.00	\$ 21,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 3,000.00	\$ 3,000.00
P641.050.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 20,000.00	\$ 20,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 2,000.00	\$ 2,000.00
T901.020.0000	SEEDING	1,000 POUND	\$ 55.00	\$ 55,000.00
T905.010.0000	TOPSOILING, CLASS B	8,400 S.Y.	\$ 3.00	\$ 25,200.00

Subtotal Construction **\$ 629,700.00**

Estimated Total	20%	\$ 125,940.00
Design Percent/Amount:	12%	\$ 75,564.00
Overall Project Contingency Percent/Amount:	20%	\$ 125,940.00
14 Years Inflation	@ 3%	\$ 322,800.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 1,279,944.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 89,980.06**

Project Estimate Total: \$ 1,369,924.06

Relocate Weather Station
 BCV-LT (9)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 10,000.00	\$ 10,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 3,000.00	\$ 3,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 1,000.00	\$ 1,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 3,000.00	\$ 3,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 10,000.00	\$ 30,000.00
P151.030.0000	CLEARING & GRUBBING	1 ACRE	\$ 10,000.00	\$ 10,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	200 C.Y.	\$ 25.00	\$ 5,000.00
P160.010.0000	EXCAVATION OF PAVEMENT	200 S.Y.	\$ 6.00	\$ 1,200.00
P209.020.0000	CRUSHED AGGREGATE BASE COURSE	100 TON	\$ 30.00	\$ 3,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	100 TON	\$ 150.00	\$ 15,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	5 TON	\$ 1,000.00	\$ 5,300.00
P620.020.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 5,000.00	\$ 5,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 6,000.00	\$ 6,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 10,000.00	\$ 10,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 1,500.00	\$ 1,500.00
T901.020.0000	SEEDING	200 POUND	\$ 55.00	\$ 11,000.00
T905.010.0020	TOPSOILING, CLASS B	1,700 S.Y.	\$ 3.00	\$ 5,100.00
	<i>AWOS RELOCATION</i>	1 L.S.	\$ 150,000.00	\$ 150,000.00

Subtotal Construction **\$ 275,100.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 55,020.00
Design Percent/Amount:	12%	\$ 33,012.00
Overall Project Contingency Percent/Amount:	20%	\$ 55,020.00
14 Years Inflation @ 3%		\$ 141,000.00

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 559,152.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 39,308.39**

Project Estimate Total: \$ 598,460.39

Rehabilitate Runway 03/21
 BCV-LT (10)

2038

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
G100.010.0000	MOBILIZATION AND DEMOBILIZATION	1 L.S.	\$ 180,000.00	\$ 180,000.00
G135.010.0000	CONSTRUCTION SURVEYING BY THE CONTRACTOR	1 L.S.	\$ 57,000.00	\$ 57,000.00
G135.010.0000	CONTRACTOR FURNISHED ENGINEERING TOOLS	1 C.S.	\$ 15,000.00	\$ 15,000.00
G700.040.0000	TRAFFIC CONTROL FOR AIRPORTS	1 L.S.	\$ 114,000.00	\$ 114,000.00
L108.180.0000	TEMPORARY JUMPER	5,000 L.F.	\$ 40.00	\$ 200,000.00
L125.500.0000	MISCELLANEOUS AIRPORT ELECTRICAL WORK	1 C.S.	\$ 20,000.00	\$ 20,000.00
P152.010.0000	UNCLASSIFIED EXCAVATION	8,400 C.Y.	\$ 12.00	\$ 100,800.00
P154.020.0000	SUBBASE COURSE	18,200 TON	\$ 25.00	\$ 455,000.00
P160.010.0000	EXCAVATION OF PAVEMENT	900 S.Y.	\$ 6.00	\$ 5,400.00
P161.010.0000	RECYCLED ASPHALT PAVEMENT	49,100 S.Y.	\$ 20.00	\$ 982,000.00
P170.020.0000	SOIL TESTING PROGRAM	1 C.S.	\$ 20,000.00	\$ 20,000.00
P299.020.0000	CRUSHED AGGREGATE SURFACE COURSE	4,700 TON	\$ 50.00	\$ 235,000.00
P318.020.0000	FOAMED ASPHALT STABILIZED BASE COURSE	50,000 S.Y.	\$ 18.00	\$ 900,000.00
P318.040.0000	ASPHALT BINDER	300 TON	\$ 400.00	\$ 120,000.00
P318.050.0000	PORTLAND CEMENT	200 TON	\$ 130.00	\$ 26,000.00
P401.010.0030	HOT MIX ASPHALT TYPE II, CLASS A	9,000 TON	\$ 150.00	\$ 1,350,000.00
P401.020.5828	ASPHALT BINDER, PG 58-28	477 TON	\$ 1,000.00	\$ 477,000.00
P603.010.0000	TACK COAT, STE-1	1,000 TON	\$ 575.00	\$ 575,000.00
P620.010.0000	RUNWAY AND TAXIWAY PAINTING	1 L.S.	\$ 30,000.00	\$ 30,000.00
P620.060.0000	PAINTED MARKING REMOVAL	1 L.S.	\$ 10,000.00	\$ 10,000.00
P641.010.0000	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	1 L.S.	\$ 20,000.00	\$ 20,000.00
P641.020.0000	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	1 C.S.	\$ 100,000.00	\$ 100,000.00
P641.070.0000	SWPPP MANAGER	1 L.S.	\$ 5,000.00	\$ 5,000.00
T901.020.0000	SEEDING	700 POUND	\$ 55.00	\$ 38,500.00
T905.010.0020	TOPSOILING, CLASS B	6,800 S.Y.	\$ 3.00	\$ 20,400.00

Subtotal Construction **\$ 6,056,100.00**

Construction Engineering (CENG) Percent/Amount:	20%	\$ 1,211,220.00
Design Percent/Amount:	12%	\$ 726,732.00
Overall Project Contingency Percent/Amount:	20%	\$ 1,211,220.00
14 Years Inflation	@ 3%	<u>\$ 3,104,300.00</u>

Category Subtotal (Pay Items + CENG + Design + Project Contingency + Inflation): **\$ 12,309,572.00**

Indirect Cost Allocation Plan (ICAP) Percent/Amount: 7.03% **\$ 865,362.91**

Project Estimate Total: \$ 13,174,934.91

Appendix D
Public Involvement

Birchwood Airport Master Plan Update Public Involvement Plan

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Prepared for:
Alaska Department of Transportation & Public Facilities
Central Region
4111 Aviation Avenue
Anchorage, Alaska 99519



December 2022

Prepared by:
Agnew::Beck Consulting
645 G Street, Suite 200
Anchorage, Alaska 99501

On behalf of:
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List of Abbreviations

ALP.....	Airport Layout Plan
AMP.....	Airport Master Plan
CAP.....	Civil Air Patrol
DOT&PF.....	Alaska Department of Transportation & Public Facilities
PIP.....	Public Involvement Plan
ROS.....	Record of Survey
SAG.....	Stakeholder Advisory Group

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1. INTRODUCTION

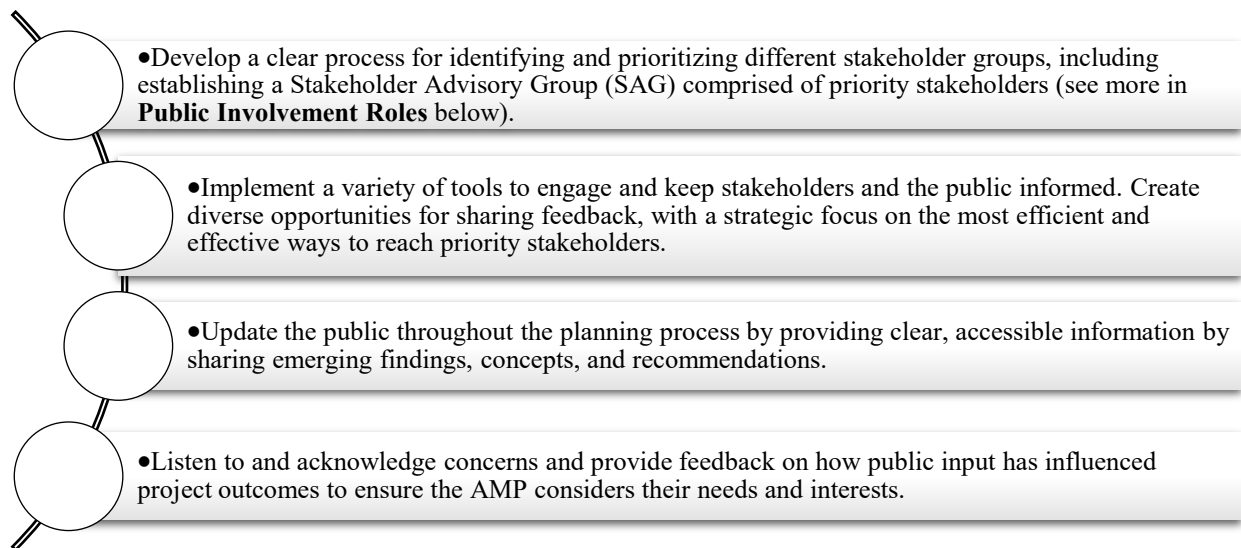
Project Overview

The purpose of the Birchwood Airport Master Plan (AMP) Update project is to prepare a comprehensive AMP Update, Airport Layout Plan (ALP) Update, and an aeronautical survey for the Birchwood Airport. The AMP will also evaluate the feasibility of creating a public-private partnership between Alaska Department of Transportation and Public Facilities (DOT&PF) and a third party for public ownership and private management of the airport. This AMP will determine the future role of the Birchwood Airport within the broader Anchorage aviation community; and how the airport can best serve future interests of DOT&PF, stakeholders, and the flying public. The AMP and ALP Update will accurately reflect the airport’s existing condition and use, analyze future needs, evaluate alternatives for proposed development, select preferred alternatives, and establish a plan for implementation.

Purpose of the Public Involvement Plan

The Public Involvement Plan (PIP) outlines our team approach for engaging with the public to develop an Airport Master Plan Update that meets the needs of DOT&PF, airport users, adjacent landowners, stakeholders, and the surrounding community. A robust and relevant PIP provides stakeholders with an opportunity to learn about the project purpose and the planning process, including a schedule for how and when to provide input on the draft plan and related recommendations. The PIP identifies target audiences, outreach activities, communication tools, an outreach schedule, and key questions to consider throughout the planning process.

Public Involvement Goals



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2. PUBLIC INVOLVEMENT ROLES

Our team, led by Agnew::Beck Consulting Principal and Owner, Shelly Wade, will work in partnership with other members of the consulting team and with the DOT&PF project team to implement the PIP. We will also establish and work with a Stakeholder Advisory (SAG) comprised of pilots, major landowners, managers, and other key stakeholders to collect data and gather input on plan findings and recommendations. The SAG will also provide feedback on how to effectively and efficiently engage their constituents and other stakeholders not represented by the SAG. Primary roles and responsibilities of each group are described below.

Stakeholder Advisory Group

- Act in an advisory capacity, providing input on all project activities and products.
- Help with recruitment, engagement, and outreach for site visits, user group meetings, and public meetings.
- Participate in key informant interviews and user group meetings.
- Provide guidance on public involvement tools and suggest community and other stakeholder activities/events for garnering input.
- Seek to identify areas of agreement and common ground solutions that serve the needs of all parties with a stake in the future of the airport.
- Work productively with other advisory members, project staff, and partners even when experiences and opinions may differ.

Alaska Department of Transportation & Public Facilities

- Recommend SAG participants and help compile contact information.
- As needed, help with outreach to potential SAG members to encourage and confirm participation.
- Provide relevant background materials, including past/existing plans, studies, or reports.
- Help with recruitment and outreach for key information interviews, small group discussions, and public meetings.
- Provide feedback on stakeholder engagement tools, process, and informational materials.
- Provide contact information to receive public feedback and comments.
- Participate in public meetings.
- Participate in debriefs after each SAG meeting, public meeting, and other stakeholder engagement activities.

Consulting Team

- Prepare and lead public involvement plan implementation.
- Act as primary contact, coordinator, and convener of the SAG.
- Prepare for, facilitate, and document SAG meetings, public meetings, and other engagement activities as identified in team discussions with the DOT&PF Project Team and at the SAG kickoff meeting.
- Coordinate and facilitate debriefs with DOT&PF Project Team after each SAG meeting.
- Plan for, conduct, document, and summarize themes from interviews with SAG members and other key stakeholders as identified in Potentially Affected Stakeholders below.

- Oversee the development and distribution of outreach materials.
- Act as primary contact to collect stakeholder, user group, and public feedback and comments on draft deliverables.
- Package public involvement feedback and results.

3. POTENTIALLY AFFECTED STAKEHOLDERS

For the planning project to be successful, relevant stakeholders must be invited to participate in the planning process. This will ensure final recommendations are reflective of stakeholder needs and interests. This section identifies relevant stakeholders who should be engaged in the planning process. The list below is a recommended starting point based on our knowledge of the planning area; the list will likely change as our team learns more through engagements with SAG members. The list of stakeholder groups includes major landowners, managers and other state and federal agency representatives, Alaska Native entities, communities, industry and non-profit sector representatives, state legislators, and the congressional delegation.

Current Airport Tenants, Users, and Neighbors

1. Pilots
2. Leaseholders
3. On-side and adjacent business owners
4. Birchwood Airport Association
5. Birchwood Squadron of the Civil Air Patrol (CAP)
6. Adjacent landowners
 - a. Alaska Railroad Corporation
 - b. Birchwood Recreation and Shooting Park
 - c. Eklutna Native Corporation
 - d. Municipality of Anchorage
7. Native Village of Eklutna
8. Talon Hangar Condominium Association
9. Aircraft Owners and Pilots Association, Alaska Chapter
10. Part 135 Operators
11. Fuel Operator – C2 Aviation
12. Chugiak Volunteer Fire Station 34

Agency Representatives

13. Local
 - a. Municipality of Anchorage Merrill Field
 - b. Municipality of Anchorage Parks and Recreation Department
 - c. Municipality of Anchorage Police Department
14. State
 - a. Alaska Department of Transportation and Public Facilities
 - b. Alaska Department of Public Safety Alaska State Troopers
 - c. Office of the Governor Division of Governmental Coordination
 - d. Alaska Department of Natural Resources
 - e. Alaska Department of Environmental Conservation
 - f. Alaska Department of Fish and Game

15. Federal

- a. Federal Aviation Administration
- b. Department of Defense
- c. United States Forest Service
- d. Environmental Protection Agency
- e. National Marine Fisheries Service
- f. Bureau of Land Management
- g. Bureau of Indian Affairs
- h. United States Army Corps of Engineers

Other Potentially Affected Stakeholders

- 16. Chugiak Community Council
- 17. Eagle River Chamber of Commerce
- 18. Alaska Native Tribal Health Consortium
- 19. State Legislators and Federal Congressional Delegation

4. PUBLIC INVOLVEMENT STRATEGIES

A description of proposed public involvement strategies is listed below; Agnew::Beck Consulting will work with other members of our team, DOT&PF, and the SAG to identify the right combination of tools to encourage stakeholder participation in the planning process and to develop recommendations that meet stakeholder needs and plan objectives. Our team will keep a comprehensive, detailed record of all stakeholder engagement, to include:

- A complete list of contacts with key information for each contact including name, affiliation and position, email, phone, mailing address, and connection to the project (e.g., SAG member).
- Dates and location of all in-person engagements.
- Dates of mass electronic correspondence including emails and social media postings.
- Dates and details of all mass hard copy mailings.
- Meeting summaries and results from public outreach.

Outreach and promotion tasks may include the use of creative tools such as a reader board at the airport entrance to advertise and encourage participation in public meetings. If desired, alternative outreach strategies could be added to the scope including using audience response technology at public meetings for prioritizing and collecting feedback on concepts and strategies and drafting newsletters and e-newsletters to communicate with stakeholders.

1. **Stakeholder Advisory Group** – as an early public involvement step, the project team will establish a SAG to help guide the planning effort. The SAG will be comprised of pilots, major landowners, managers, and other key stakeholders. The group will review various findings and recommendations from the planning effort, provide input, and generally serve in an advisory role to the project team. The SAG will also offer guidance and input into the public involvement effort and help identify, shape, and share outreach opportunities such as public meetings and online forums. The project team will convene the SAG for up to four meetings for the AMP effort.
2. **User Group Meetings and Public Meetings** – the project team will schedule, advertise, and document results for up to four user group meetings and four public meetings, including one in-person charette to review layout alternatives. The contractor will coordinate with team members and DOT&PF to determine the appropriate time and setting for each meeting, taking care not to conflict with existing events. The purpose of these meetings is to facilitate stakeholder input through the presentation of emerging findings and guiding questions. The project team will coordinate efforts to prepare meeting materials, conduct outreach, develop visual aids, lead presentations, provide comment sheets, and prepare a written summary of each meeting. If needed per COVID-19 health guidelines, some or all meetings can be conducted virtually.
3. **Legislative Response Support** – the project team will document legislator comments, questions, concerns and any related responses provided by project team members, including DOT&PF.

4. **Key Stakeholder Interviews** – the project team will conduct interviews with a representative group of key stakeholders as determined in partnership with DOT&PF and the SAG. Interviewing representative stakeholders provides useful context and helps identify preliminary issues, opportunities, and priorities. Key informant interviews are also a useful way to collect background information, check that quantitative data reflects reality, explore preliminary ideas in greater depth, and to engage and recruit plan supporters and implementers.
5. **Stakeholder Survey** – the project team will prepare a draft and final stakeholder survey to assess stakeholder support for draft layout alternatives. The project team will analyze and provide a draft and final written summary of survey results. The team will also present a summary of survey results at the public charette.
6. **Meeting Announcements** – the project team will prepare and advertise four public meeting announcements.
7. **Meeting PowerPoint Presentations and Poster Boards** – the project team will prepare meeting presentation slides and poster boards as needed for each SAG (4) and public meeting (4). The presentation slides, poster boards, and other relevant meeting materials will include project information that will help guide meeting discussions.
8. **Social Media** – the project team will work with DOT&PF to develop relevant updates regarding the planning process, upcoming meetings, and project milestones for sharing on appropriate social media outlets. Outreach and information-sharing through Facebook and other social media outlets can quickly spread the word about upcoming events, share interesting research findings, and inform the public of each step in the process.
9. **Project Webpage** – the project team will work with DOT&PF to prepare content for a DOT&PF-hosted project-specific webpage that will be referenced on all outreach materials. The webpage will include a summary of project purpose, information on upcoming opportunities to get involved, the project schedule, copies of flyers or draft products, a comment portal, team contact information, and other relevant materials. The webpage will be updated at least quarterly.
10. **Flyers** – the project team will create informational flyers with a summary of the project purpose, timeline, project webpage, and contact information. A template flyer will be created and adapted up to four times to announce specific opportunities for the public to engage in the planning process.
11. **Brochure** – the project team will prepare an 11” by 17” double sided brochure (8.5” x 11” when folded) summarizing updated Airport Master Plan recommendations and general airport safety information. This brochure will be available as a public outreach tool after project completion.

5. POTENTIAL INTERVIEW/STAKEHOLDER QUESTIONS

The following is a list of potential questions to guide conversations during interviews and with the SAG and other stakeholders. This is a preliminary list for DOT&PF Project Team consideration. To effectively gather input from specific groups, our team will work with the DOT&PF Project Team and the SAG to modify these questions accordingly.

General

Today

1. **Use** – How do you use the airport today? Hangar/tie down? Aircraft, number, and model? How long have you been a tenant at the airport? What do you see as the airport’s most important functions and uses?
2. **Strengths** – What are the strengths or positive attributes of the airport? What do you like most? What features or facilities would you like to preserve?
3. **Challenges** – What are the challenges or negative characteristics of the airport? What do you dislike? How is the airport not meeting your needs?
4. **Safety hazards** – Are there safety hazards at the airport?

Future

5. **Vision** – Looking ahead, 20 years from now, what does your ideal Birchwood Airport look like? Is it the same? Different? How is it different?
6. **Anticipated Needs** – What future needs do you anticipate for the airport and surrounding area? What changes, if any, are needed to:
 - Improve functionality?
 - Accommodate new and/or expansion/reduction of existing uses?
 - Improve security and safety?
 - Improve the parking area and entrance?
 - Improve airport access?
7. **Recommendations** – What specific actions would improve the airport for your and other user needs?

Land Use

1. What data, plans, and reports can you share with our team to help inform the land use assessment?
 - What are your short and long-term goals and strategies for lands adjacent to the airport? What specific projects do you have planned over the next five to ten years?
2. What land use conflicts exist today (if any)?
3. If, through this planning process, stakeholders express the need for airport expansion, what is the ideal location and use for that expansion?

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6. PUBLIC INVOLVEMENT SCHEDULE AND MILESTONES

The following table depicts the proposed PIP schedule for the Birchwood AMP and generally follows the overall project timeline, beginning in summer 2020 and concluding in spring 2023.

Year	Quarter	Overall Project Schedule	Public Involvement Milestones
2020	Jun	<ul style="list-style-type: none"> Launch project 	<ul style="list-style-type: none"> Draft and finalize Public Involvement Plan and schedule Identify stakeholders
	Jul, Aug, Sep	<ul style="list-style-type: none"> Collect background information via field surveys, site inspections, inventories, and aerial photography Identify priority issues Conduct airspace analysis and a draft Socioeconomic Evaluation 	<ul style="list-style-type: none"> Create outreach tools such as a project website and flyer Send Stakeholder Advisory Group invites and confirm composition and participation Conduct interviews to collect and identify emerging stakeholder needs, priorities, and comments or questions
	Oct, Nov, Dec	<ul style="list-style-type: none"> Final socioeconomic evaluation Prepare draft and final Aviation Activity Forecast 	<ul style="list-style-type: none"> Provide ongoing updates via social media and the project website
2021	Jan, Feb, Mar	<ul style="list-style-type: none"> Draft Airport Property Plan Record of Survey (ROS) Prepare draft and final Facility Standards Requirements Prepare Financial Assessment and maintenance cost generation Prepare draft Conditions and Needs Assessment 	<ul style="list-style-type: none"> SAG meeting #1 Public meeting #1 Provide ongoing updates via social media and the project website Share emerging draft content and collect feedback from the stakeholder advisory group and the public
	Apr, May, Jun	<ul style="list-style-type: none"> Final Airport Property Plan ROS Final Conditions and Needs Assessment Draft Land Use Assessment and Economic Development Report 	<ul style="list-style-type: none"> Provide ongoing updates via social media and the project website
	Jul, Aug, Sep	<ul style="list-style-type: none"> Draft Environmental Overview and develop preliminary alternatives 	<ul style="list-style-type: none"> Provide ongoing updates via social media and the project website
	Oct, Nov, Dec	<ul style="list-style-type: none"> Draft Financial Plan and Capital Improvement Program 	<ul style="list-style-type: none"> SAG meeting #2 Public meeting #2 Provide ongoing updates via social media and the project website Launch Stakeholder Survey
	Jan, Feb, Mar		<ul style="list-style-type: none"> Develop Draft and Final Stakeholder Survey Analysis Provide ongoing updates via social media and the project website
Apr, May, Jun	<ul style="list-style-type: none"> Draft Public-Private Partnership Analysis 		
Oct, Nov, Dec	<ul style="list-style-type: none"> Finalize Land Use Assessment Finalize Public-Private Partnership Analysis 	<ul style="list-style-type: none"> Public charrette/workshop (meeting #3) SAG meeting #3 	

			<ul style="list-style-type: none"> • Provide ongoing updates via social media and the project website • Public comment period ends
2023	Jan, Feb, Mar	<ul style="list-style-type: none"> • <i>Prepare final draft Alternatives and Recommendations Report</i> 	<ul style="list-style-type: none"> • Provide ongoing updates via social media and the project website
	Apr, May, June	<ul style="list-style-type: none"> • <i>Prepare draft Airport Layout Plan</i> • <i>Draft Airport Master Plan Update released for public review</i> 	<ul style="list-style-type: none"> • SAG meeting #4 • Public meeting #4 • Public comment period starts and ends • Provide ongoing updates via social media and the project website
	July, Aug	<ul style="list-style-type: none"> • <i>Finalize Airport Master Plan Update</i> • <i>Finalize Airport Layout Plan</i> 	<ul style="list-style-type: none"> • Announce the release of the final plans via social media and the project website

Heather A. Campfield

Subject: FW: Birchwood Airport Master Plan Update: SAG Meeting #1, Feb 9, 2021; 1:30-4:30 PM
Attachments: 02-09-2021_Birchwood AMP_SAG Meeting #1_Draft Agenda.pdf

From: Shelly Wade <shelly@agnewbeck.com>
Sent: Monday, January 25, 2021 3:46 PM
To: Shelly Wade <shelly@agnewbeck.com>
Cc: Wuttke-Campoamor, Jessica L (DOT) <jessica.wuttke-campoamor@alaska.gov>
Subject: Birchwood Airport Master Plan Update: SAG Meeting #1, Feb 9, 2021; 1:30-4:30 PM

Good afternoon, Birchwood Airport Master Plan Stakeholder Advisory Group –

Happy New Year to you and yours! We are writing today to share that we have identified a date and time for our **first Stakeholder Advisory Group meeting**. We have also identified a date and time for our **first public meeting**.

- **This first SAG meeting is scheduled for Tuesday, February 9th, 1:30 – 4:30 PM (see attached draft agenda). Our preliminary meeting objectives include:**
 - Review the project and purpose.
 - Share what we've learned so far.
 - Gather input from the SAG on emerging themes and findings.
 - Prepare for Public Meeting #1.
- **The first public meeting is scheduled for Thursday, March 4th, 5:00 – 8:00 PM (with two opportunities for residents and others to join – stay tuned for more on that).**

We had hoped to have this meeting in person, but continued COVID-19 guidelines and related meeting restrictions, including those under [Municipality of Anchorage Emergency Order-17](#), limit indoor gatherings like our Airport Master Plan SAG and public meetings – **health and safety first!**

Our first meeting will be held virtually, using online meeting technology (called “Zoom”) that our team has used to conduct similar (and successful!) planning meetings across Alaska (before and throughout the pandemic). To help facilitate your connection to the meeting on February 9th, we are providing video and audio options (see attached draft agenda), and we will be sure to send out meeting materials well before the meeting for anyone that is unable to video screenshare.

Following this email, I will send an electronic invite for the first SAG meeting and will include the agenda. As a reminder, please review the **“Birchwood Airport Master Plan (AMP) SAG Participation Protocol”** below, also shared in our November correspondence.

For the February 9th meeting, we ask that only one individual from each entity participate. Again, this will help our team facilitate productive, more in-depth conversations on Master Plan topics.

Over the coming weeks, we will share additional materials for our first SAG meeting and details on the March 4th public meeting. Until then, please email me directly with your comments, questions or concerns.

All the best,

Shelly

Shelly Wade, AICP – Birchwood Airport Master Plan Update, Public Involvement Lead

Dena'inaq etnen'aq' gheshtnu ch'q'u yeshdu. (Dena'ina) I live and work on the land of the Dena'ina. (English)

Translation by J. Isaak and S. Shaginoff-Stuart

- **Birchwood AMP SAG Participation Protocol** – For every meeting, we will aim to create a structured agenda with clear objectives. To best meet those objectives, and to provide each SAG Member with ample opportunity to contribute to SAG discussions, we kindly request each of you **identify and share contact information for one individual that will serve as the primary representative for your entity/group**. Primary representatives will participate in SAG meetings and will act as our main connect for SAG and related project communications. Recognizing that primary reps may not always be available, we also ask that you **provide contact information for up to two alternates** that may participate should your primary be unavailable. Please send primary and alternate contact information to Shelly Wade, Project Public Involvement Lead, shelly@agnewbeck.com.

From: Shelly Wade

Sent: Tuesday, November 10, 2020 12:59 PM

To: Shelly Wade <shelly@agnewbeck.com>

Cc: Wuttke-Campoamor, Jessica L (DOT) <jessica.wuttke-campoamor@alaska.gov>

Subject: 11/10/2020: Birchwood Airport Master Plan, SAG Member Info & Resources

Dear Birchwood Airport Master Plan (AMP) Update Stakeholder Advisory Group (SAG) Members –

We hope this message finds you and yours safe and healthy. Thank you to everyone we have connected with in the early stages of the Birchwood AMP Update process. We are writing today to share the following project updates and resources:

1. SAG Membership, Roles/Responsibilities & Meeting Schedule/Participation Protocol

- a. Membership – We are excited to have the key stakeholder entities listed below as invited members of the project stakeholder advisory group.
 - Alaska Department of Transportation & Public Facilities (DOT&PF)
 - Alaska Railroad
 - Birchwood Airport Association
 - Birchwood Civil Air Patrol
 - Birchwood Community Council
 - Birchwood Recreation and Shooting Park
 - Eklutna Native Corporation
 - Native Village of Eklutna
 - Talon Hangar Condominium Association
- b. Roles – Below, please find a brief description of the SAG, followed by a list of primary roles and responsibilities.

The project *Public Involvement Plan* directs the project team to establish and work with a stakeholder advisory group comprised of pilots, major landowners, managers, and other key stakeholders to collect data and gather input on plan findings and recommendations. The SAG will also provide feedback on how to effectively and efficiently engage their constituents and other stakeholders not represented by the SAG.

Birchwood AMP Update: SAG Roles & Responsibilities

- Act in an advisory capacity, providing input on all project activities and products.
- Help with recruitment, engagement, and outreach for site visits, user group meetings, and public meetings.
- Participate in key informant interviews and user group meetings.
- Provide guidance on public involvement tools and suggest community and other stakeholder activities/events for garnering input.
- Seek to identify areas of agreement and common ground solutions that serve the needs of all parties with a stake in the future of the airport.
- Work productively with other advisory members, project staff, and partners even when experiences and opinions may differ.

2. Introductory Project Flyer & Webpage

- a. Introductory Flyer – Attached and [linked here](#), please find a flyer that describes the project purpose, lead (DOT&PF), ways to get involved and learn more, timeline, and questions that highlight what we hope to learn from stakeholders at this stage in the planning process. We strongly encourage you to share the flyer with your constituents, and anyone else that may have an interest in the future of the Birchwood Airport.
- b. [Webpage](#) – The project webpage includes information similar to the flyer and more, including access to relevant project documents (e.g., 2005 Master Plan) and a place to submit comments to the project team. Check it out and please share it widely: <http://dot.alaska.gov/creg/birchwoodamp/>.

3. Meeting Schedule and Participation Protocol

- a. Schedule – As shared with many of you, we anticipate three rounds of project meetings, including three SAG and three public meetings. To best utilize SAG Member knowledge and input, we will hold each SAG meeting prior to the public meetings. A tentative schedule and focus for the three rounds of meetings is outlined below:
 - *MORE INFO COMING SOON: January 2021 (SAG Meeting); February 2021 (Public Meeting) – Potential Focus: Project Introduction & Conditions/Needs Assessment*
 - Between July and September 2021: SAG and Public Meetings – *Potential Focus: Draft Alternatives*
 - Between October and December 2021: SAG and Public Meetings – *Potential Focus: Draft Recommendations*
- b. Participation Protocol – For every meeting, we will aim to create a structured agenda with clear objectives. To best meet those objectives, and to provide each SAG Member with ample opportunity to contribute to SAG discussions, we kindly request each of you **identify and share contact information for one individual that will serve as the primary representative for your entity/group**. Primary representatives will participate in SAG meetings and will act as our main connect for SAG and related project communications. Recognizing that primary reps may not always be available, we also ask that you **provide contact information for up to two alternates** that may participate should your primary be unavailable. Please send primary and alternate contact information to Shelly Wade, Project Public Involvement Lead, shelly@agnewbeck.com.

Later this month, we will be back in touch with more information on the proposed January SAG meeting. In the interim, please send your comments, questions or concerns to **DOT&PF Project Manager, Jessica Wuttke-Campoamor**, Jessica.wuttke-campoamor@alaska.gov, 907-269-0519.

Very sincerely,

Shelly Wade, AICP
Birchwood AMP Update Public Involvement Lead
shelly@agnewbeck.com
907-242-5326

**Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan (AMP) Update:
 Stakeholder Advisory Group Meeting #1**



February 9th, 2021; 1:30 – 4:30 pm

How to Connect

- To join for video, screenshare and audio:
 - <https://agnewbeck.zoom.us/j/88912311673?pwd=OW1yQ1Y5OXFYRXZpbWR0RVhjTnBodz09>
- To join by audio only:
 - Call-in number: 1-669-900-9128
 - Meeting ID: 889 1231 1673#
 - Passcode: 2222#

Objectives

- Review the project and purpose.
- Share what we've learned so far.
- Gather input from the SAG on emerging themes and findings.
- Prepare for Public Meeting #1.

DRAFT Agenda

Time	Item
1:30 – 1:50 pm	Welcome & Introductions <ul style="list-style-type: none"> • Who's in the Room? • Land Acknowledgement • Birchwood AMP Purpose & Schedule • Meeting Purpose & Guidelines
1:50 – 3:00 pm	What have we learned so far? <ul style="list-style-type: none"> • Assessment of Birchwood Airport Conditions and Needs (including highlights from inventory) • Identification of Issues (including feedback from stakeholder interviews) • Results from Initial Forecasts
3:00 – 3:30 pm	How will the Airport Master Plan address the financial sustainability of the airport? <ul style="list-style-type: none"> • Assessment of Current Management Model – DOT&PF • Research and Analysis of 3rd Party Management Options – Public-Private Partnerships
3:30 – 3:40 pm	Break
3:40 – 4:10 pm	Identify Frequently Asked Questions for the Public Meeting #1
4:10 – 4:30 pm	Next Steps and Wrap Up <ul style="list-style-type: none"> • Reminder of project timeline • Link to project webpage • Next steps to prepare for Public Meeting #1

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Stakeholder Advisory Group Meeting #1

Prepared for Alaska Department of Transportation &
Public Facilities

*Presented and facilitated by HDL Engineering Consultants &
Agnew::Beck Consulting*

February 9, 2021; 1:30 – 4:30 PM



1:30-1:50 pm

Welcome & Introductions

Who's in the Room?



Land Acknowledgement

*Dena'inaq ełnen'aaq'
gheshtnu ch'q'u yeshdu.* (Dena'ina)

Translation by J. Isaak and S. Shaginoff-Stuart

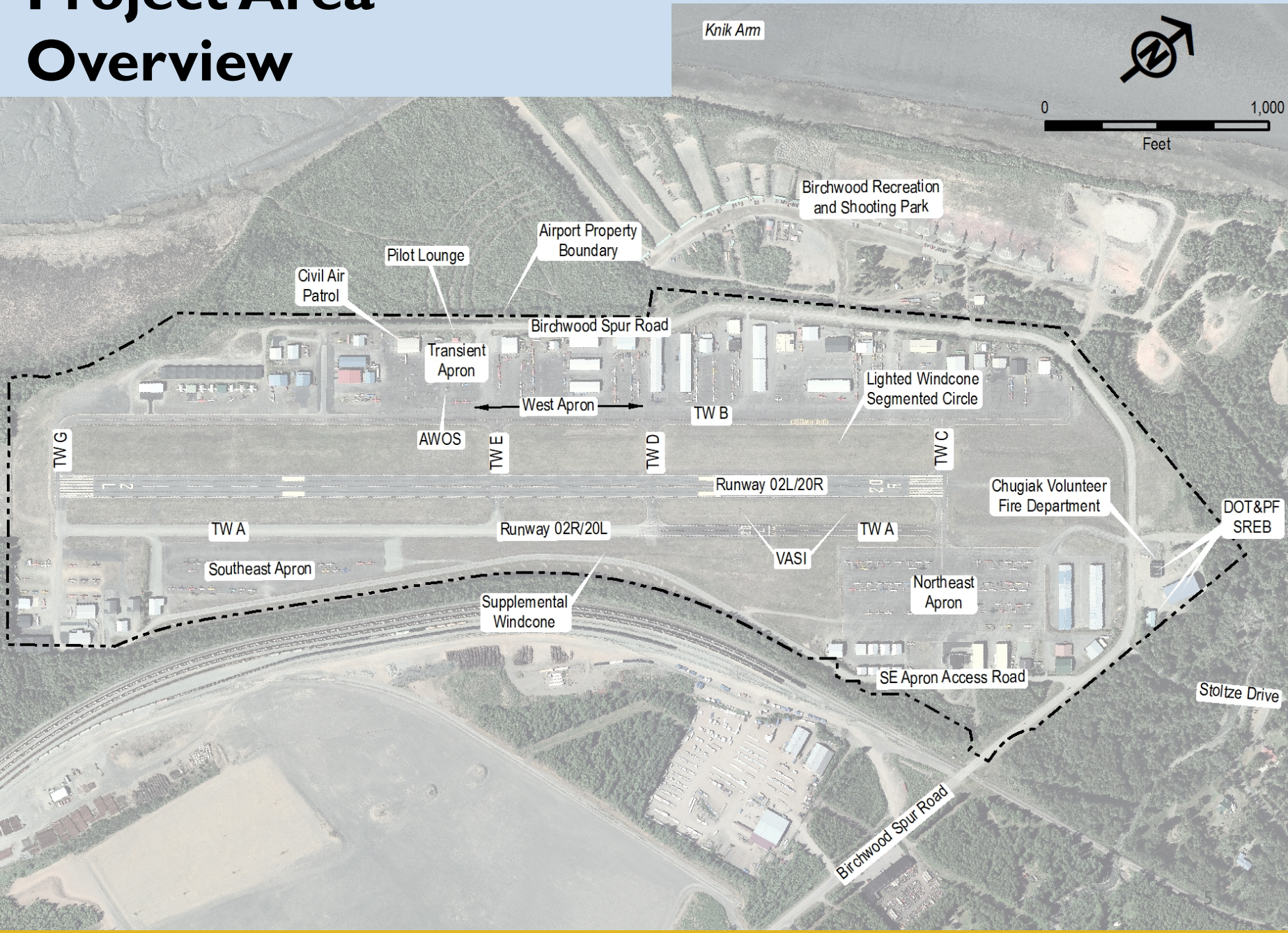
*I live and work on the
land of the Dena'ina.* (English)

A Land Acknowledgement is a formal statement that recognizes and respects Indigenous Peoples as traditional stewards of this land and the enduring relationship that exists between Indigenous Peoples and their traditional territories.

<http://convention.myacpa.org/nashville2020/inclusion/land-acknowledgement/>

For more information:
<https://nativegov.org/a-guide-to-indigenous-land-acknowledgment/>

Project Area Overview



Project Purpose

To determine how the airport can best serve the future interests and needs of the flying public, aviation community, Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders.



Project Schedule

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings:

- **winter 2021**
- **summer 2021**
- **fall 2021**

Meeting Purpose

- Review the project and purpose.
- Share what we've learned so far.
- Collect input from the SAG on emerging themes and findings.
- Prepare for Public Meeting #1.

General Meeting Guidelines

- Be respectful.
- Be positive and solutions oriented.
- Be clear and concise.
- Be specific.
- Avoid jargon and acronyms.
- Think creatively and strategically.

Online & Telephonic Meeting Guidelines

Please:

1. Follow Shelly's lead as the designated facilitator.
 - Throughout the meeting, SAG Members will have several opportunities to comment or ask questions.
2. Mute your microphone when you are not talking.
3. If you have joined by video, don't forget – everyone can see you 😊.
4. We will do introductions, but please repeat your name when it is your turn to comment or ask a question.
5. Please limit use of the Zoom chat space, unless prompted by a guiding question, or you're having a technical issue.

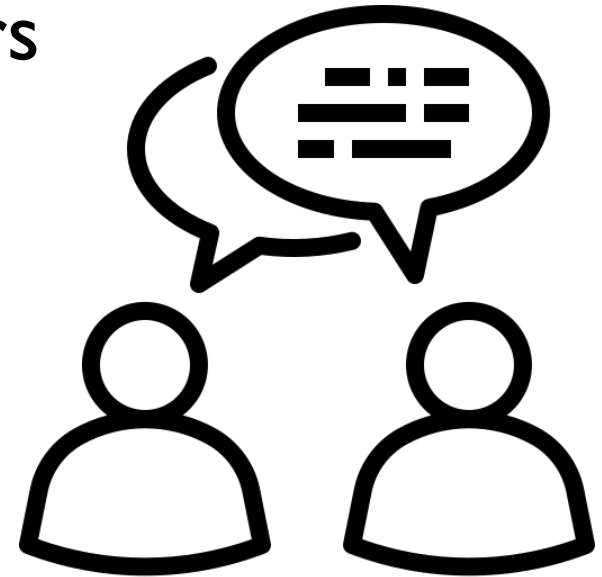
1:50 – 3:00 pm

What have we learned so far?

Interview Highlights: What we Heard

Conducted 35 interviews with:

- Pilots and other airport users
- Hangar owners
- Nearby business owners
- Business trade groups
- Flight associations
- Adjacent landowners



Interviews: Vision for the Airport

Stakeholders generally like the way the airport is today.

- Most stakeholders believe the **conditions will not change much** in the next 20 years to warrant significant changes to the airport.
- **Stakeholders**, especially pilots, **desire minimal change** to the existing airport.
- The **biggest concerns** are the airport moving to controlled airspace and any **changes that would negatively impact the current culture and familiarity of the existing airport**.

Interviews: What Stakeholders Value

Stakeholders want to preserve most aspects of the airport.

- Stakeholders have a **strong connection** to the airport.
- Airport users most appreciate the **easy access** to the airport and **uncontrolled airspace**.
- Users enjoy the **community feel**, and **accessibility to new, younger pilots**.
- Users appreciate the **low fees** and fear raising fees could price pilots out.

Interviews: What Stakeholders Value

*“We are **extremely lucky to have a public use airport in our community**, with a good runway. The **airport adds a lot to the community**, and many of the flight schools in Anchorage use Birchwood for training.”*

*“I live close by – easy choice for me. There are a couple mechanics there that I like working with. It’s a **non-towered airport with very few snow days that close me out**. (They) do a good job of keeping surfaces clear.”*

*“I like that it is **uncontrolled** and there are **enough services on the field that I can get my needs taken care of**.”*

Interviews: Areas of Improvement

Little to No On-Site Management

- When there is an operations/management issue, there is no **DOT&PF presence onsite**. It is unclear who the manager is and how to reach them.

Locked Gate

- The idea of **adding a locked gate has mixed support**. Some believe there needs to be more security to stop fuel theft, others think it would be an annoyance.

Keeping up with Growth

- Many pilots asked for more **tie-downs, electric outlets near the tie-downs** and **hangar space**.
- Some pilots want **more designated parking** while others said they can park at their tie-down.
- Pilots asked for a **new taxiway** between E and G.

*Also mentioned, but not within DOT&PF purview – **improve restroom facility***

Interviews: Areas of Improvement



“We have talked about the need to put in another taxiway between runway and taxiway halfway between E and G. There is a lot more traffic at the south end now that it is more built out. That would help not only us but all tenants to the south.”

Areas for Improvement

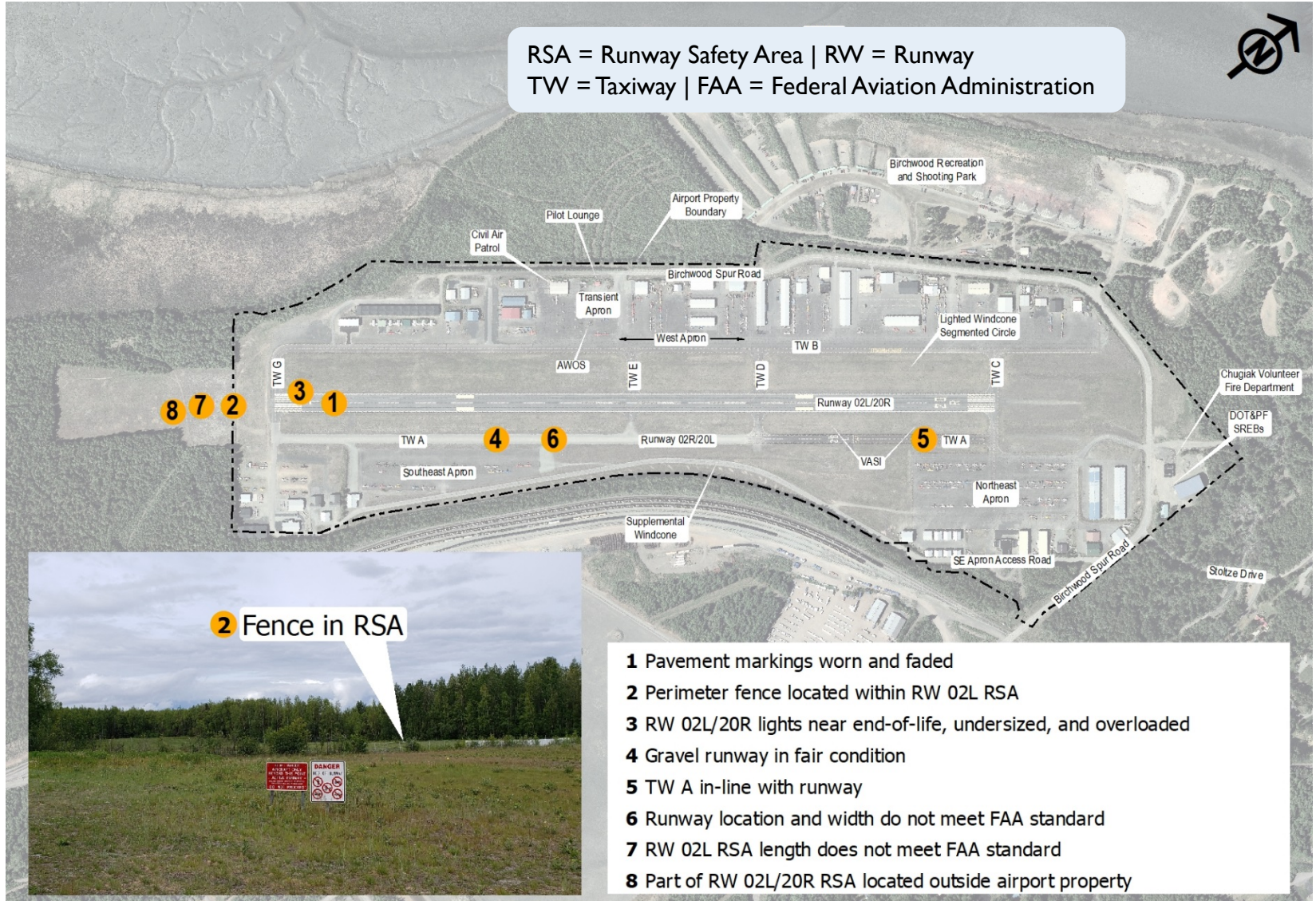
Airspace & Approaches

- Approach airspace is limited by JBER Special Use Restricted Area
- RW 02L/20R published instrument approach desired

JBER = Joint Base Elmendorf Richardson
RW = Runway

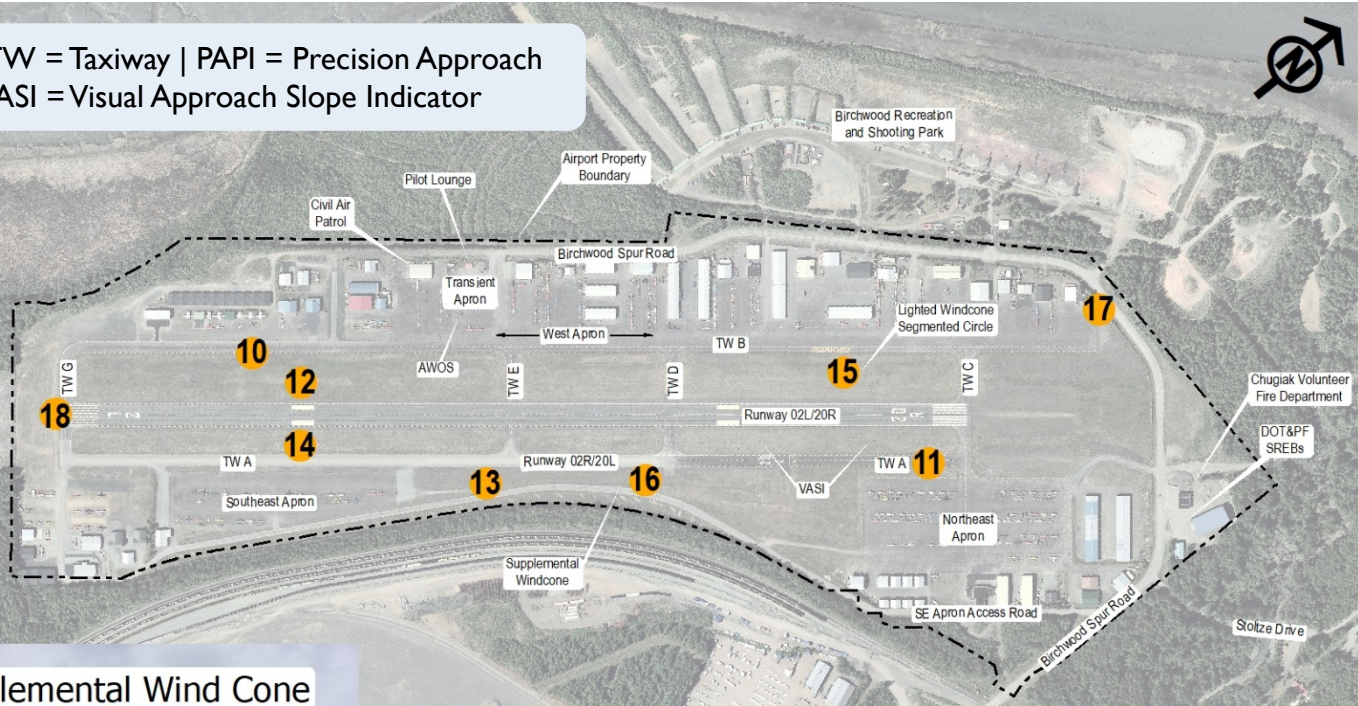
Areas for Improvement

Runways, RSAs, & RPZs



Areas for Improvement Taxiways & Visual Aids

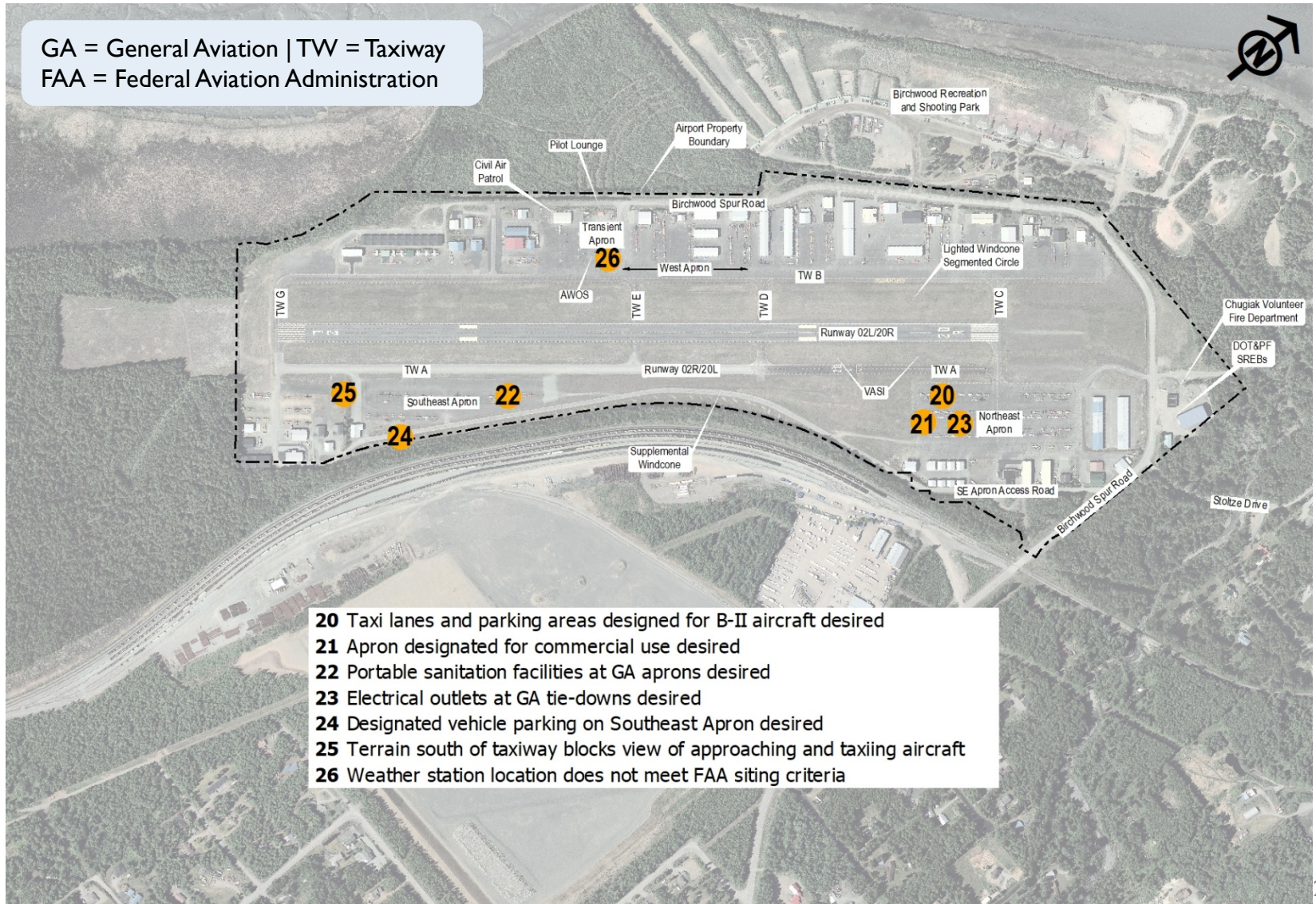
RW = Runway | TW = Taxiway | PAPI = Precision Approach Path Indicator | VASI = Visual Approach Slope Indicator



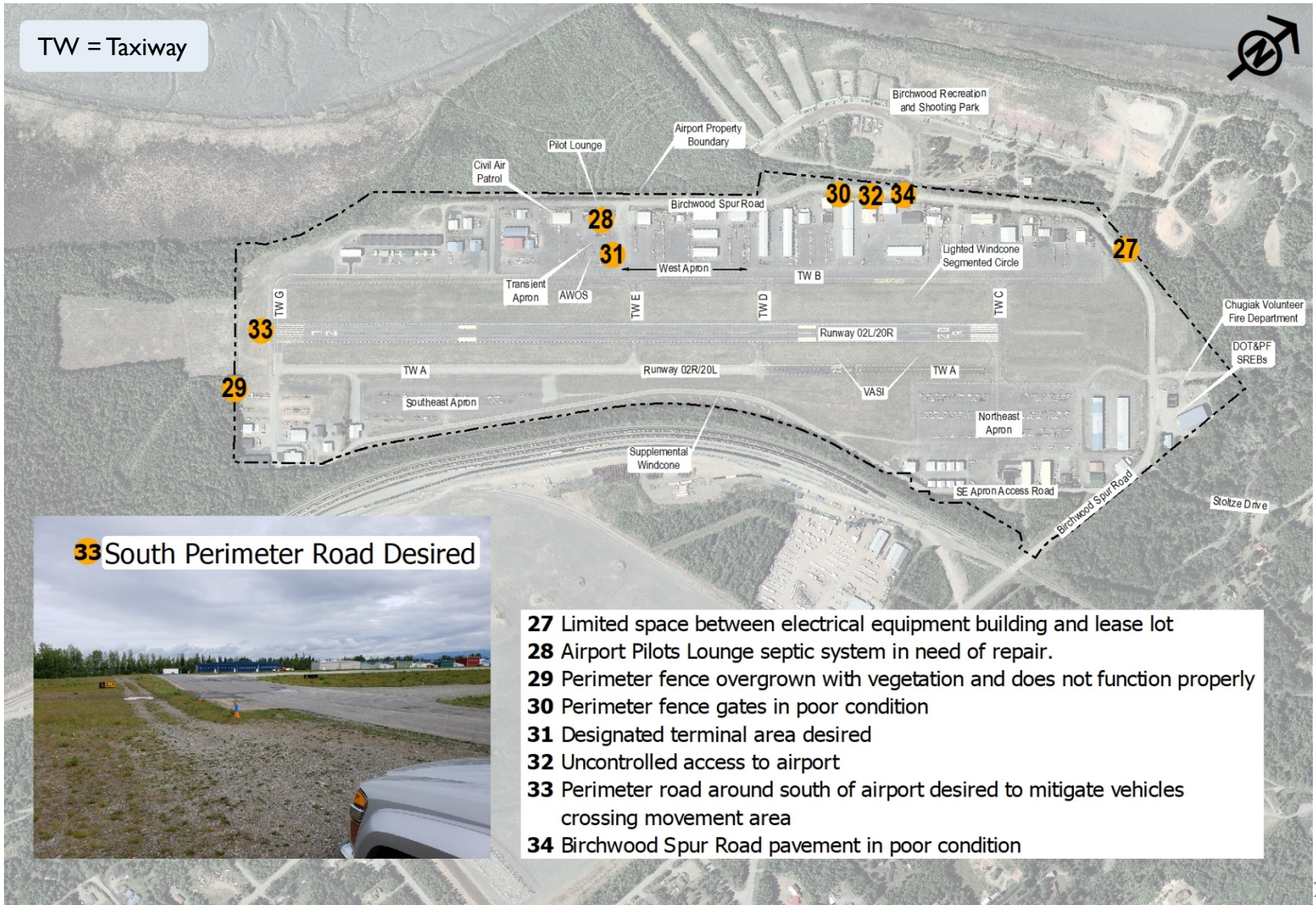
- 10** Lighting system near end-of-life, undersized, and overloaded
- 11** TW A pavement in poor condition
- 12** Connecting taxiway needed between TW A/B and RW 02L/20R
- 13** Parallel taxiway needed east of RW 02R/20L
- 14** Connecting taxiway needed north of Southeast Apron
- 15** Primary wind cone at end-of-life
- 16** Supplemental wind cone in poor condition and not properly sited
- 17** L-282 constant current regulators are single phase
- 18** RW 2L approach lights (PAPI/VASI) desired

Areas for Improvement

Aprons & Weather Equipment



Areas for Improvement Facilities & Access



Areas for Improvement

Safety, Airport Maintenance, & Airport Management

RW = Runway

- Pilots operating without broadcasting intentions
- **Simultaneous operations occur occasionally on runways**
- Trees obstruct clear approach to RW 02R
- More frequent and prompt snow removal on RW 02L/20R desired
- **Snow removal operations create snow piles and berms on lease lots and tie-downs**
- Airport users using Transient Apron without paying fee
- **On-site airport manager desired**
- Off-leash dog walking occurring on airport property
- **Increased non-airport traffic and theft reported in recent years**

Areas for Improvement

Land Use & Planning

GA = General Aviation

- Main runway extension desired
- **Separation of GA and commercial operations** with designated aprons desired
- **Better enforcement of vehicle and aircraft moving violations** desired
- **Concerns about management and maintenance with possible public-private partnership**
- Designated helicopter landing area separate from runways desired
- Civil Air Patrol glider activity ties up runway for long periods
- Concerns about access changes at the shooting range and Birchwood Spur Road
- **Additional lease and tie-down space** desired

Recap of Big Themes: Areas for Improvement

- No lease lots or hangar space available and nowhere on airport property to expand
- Anxiety about the public-private partnership
- Need for an onsite airport manager
- Gravel ski strip important
 - Recognize that configuration needs to be improved for additional safety and eligibility for FAA funding
- RSA issues prior to 02L and beyond 20R
- Unauthorized vehicle and pedestrian access presents safety hazards

Results from Initial Forecasts

- The Aviation Activity Forecast for operations is **based on observed and recorded aviation activity.**
- Aviation activity data was **recorded using a General Audio Recording Device (G.A.R.D.)*** between July 21 and August 16, 2020, and September 2 and October 2, 2020.
- **No changes to current use have been identified or forecasted.**

*The G.A.R.D. records radio transmissions and operations through radar surveillance based on active aircraft transponders and cross-references transponders with the FAA's Automatic Dependent Surveillance-Broadcast (ADS-B) registry to identify the make and model of the aircraft.

3:00 – 3:30 pm

How will the Airport Master Plan address the financial sustainability of the airport?

Financial Plan

- The financial plan will address projected growth, funding needs and sources, and any proposed changes to lease rates or user fees.
- Birchwood's operating costs will be benchmarked against two other airports in the region to compare costs for similar levels of service.
- The plan will provide a cash flow forecast and a sensitivity analysis to evaluate sustainability.

Potential Public/Private Partnership



Today the airport is operated and managed by the Alaska Department of Transportation & Public Facilities (DOT&PF).



Third party private management is being considered as part of this Master Plan Update.

Our Scope of Work

Potential Public/Private Partnership Exploration

1. Build from the **Financial Plan** component of the AMP which will:
 - Address projected growth, funding needs and sources, and any proposed changes to lease rates or user fees.
 - Identify gaps in revenue and provide a foundation for how to fill those gaps (a financial model or proforma).
2. Determine **possible management options** for a **possible public-private partnership** (“3P”) between DOT&PF any other 3rd party interest.
3. Compare management options and prepare a detailed **Strengths, Weaknesses, Opportunities and Threats** and **feasibility analysis of a privately managed airport**. This analysis will:
 - Consider financial and other information about each management option as it relates to the AMP Vision and Goals.

Interviews: Potential Public/Private Ownership

- Airport users are frustrated with a **lack of communication from DOT&PF.**
- Users are interested in more attentive management but **concerned third party or private sector manager may increase fees.**

*“Currently, we do not have anyone we can go to if we want to see change at this airport. If something goes wrong, **we feel like we get the run around** from DOT&PF. There is no process or allowance.”*

“Cost is a huge issue – **don’t price us out of flying.** We want this to be a place where young people can come in and fly. If you make it cost a fortune, they won’t come in. Almost every place where DOT&PF handed over management to other entity, it results in higher/expensive fees – Palmer, Wasilla. Prices doubled in a year or two. People can’t afford that.”



3:30 – 3:40 pm

Break

3:40 – 4:10 pm

**Identify Frequently Asked Questions for
the Public Meeting #1**

Questions

- What questions do SAG members have that we have not yet addressed?
- What sort of questions should we anticipate at the public meeting?

4:10 – 4:30 pm

Next Steps and Wrap Up

Birchwood AMP: Our Timeline

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings:

- **winter 2021**
- **summer 2021**
- **fall 2021**

Immediate Next Step

Thursday, March 4th Public Meeting

- SAG feedback on proposed structure, agenda and participation
- How can we have a successful first public meeting?

Learn More & Contact Us

<http://www.dot.state.ak.us/creg/birchwoodamp/>

Jessica Wuttke-Campoamor, DOT&PF Project Manager

Email: jessica.wuttke-campoamor@alaska.gov

Phone: 907-269-0519

Shelly Wade, Public Involvement Lead

Email: shelly@agnewbeck.com

Phone: 907-242-5326

Alaska Department of Transportation and Public Facilities

Birchwood Airport Master Plan (AMP) Update:

Stakeholder Advisory Group (SAG) Meeting #1 – NOTES

February 9th, 2021; 1:30 – 4:30 pm



Participants

- Alaska Department of Transportation & Public Facilities (DOT&PF): Jessica Wuttke-Campoamor (Birchwood AMP Project Manager), Shawn Gardner (Anchorage Area Planner)
- Alaska Railroad: Brian Lindamood (unable to attend; no alternate identified)
- Birchwood Airport Association: Lars Gleitsmann
- Birchwood Civil Air Patrol: Wally Parks
- Birchwood Community Council: Val Jokela
- Birchwood Recreation & Shooting Park: Melissa Himes
- Eklutna Real Estate Services LLC/Eklutna, Inc.: Greg McDonald
- Native Village of Eklutna: Aaron Leggett, Carrie Brophil
- Talon Hangar Association: Dennis Serie
- Project Consultants:
 - HDL Engineering Consultants: Mark Swenson (Consultant Project Manager), Heather Campfield
 - Agnew::Beck Consulting: Shelly Wade (Public Involvement Lead), Molly Mylius, Aubrey Wieber

NOTE: Summary of Discussion by Guiding Slide (note: minor technical updates were made to the slides, including an update to the base map in slides 19-22)

Project Overview – Slides 5-7

- The purpose of this meeting is to share what we have learned so far, to get SAG member feedback on emerging themes and findings and to share preliminary information on the March 4th public meeting.
- The Birchwood Airport boundaries are restricted by land owned by Eklutna Inc., Alaska Railroad, and Birchwood Recreation & Shooting Park.
- The master planning process started in Summer 2020 with an inspection of the facilities and airspace. The project team also started a series of stakeholder interviews to learn from airport users, businesses, and adjacent landowners how they use the airport, what they like, how they would improve it, and what their future plans are regarding lands surrounding the airport.
 - The information gleaned so far informs next steps in the planning process.
 - The first of three public meetings is scheduled for March 4th.
 - Second SAG and public meetings will be in the summer, and third meetings in the fall.
 - The estimated completion date for the Birchwood AMP Update Summer 2022.

What We've Learned So Far – Slides 12-17

- HDL Engineering Consultants and Agnew::Beck Consulting conducted 35 interviews with stakeholders including pilots, hangar owners, nearby businesses, business trade groups, adjacent landowners, and flight associations.
 - Most interviewees said they like how the airport operates today and do not expect significant changes in the next 20 years.
 - The biggest concern is growing the airport, moving to controlled airspace, and losing the community feel the airport has today.
 - Suggested areas for improvement were having an on-site manager for the airport, adding a locked gate (though some also stated they do not want this), and keeping up with the growth by adding new

tie-downs, electric outlets, and hangar space. Some asked for more designated parking and a new taxiway between E and G.

Areas for Improvement – Slides 18-25

- NOTE: Need to revise the base map for future project maps. Map in slides is dated imagery. Area shown as “monofil” is Birchwood Recreation and Shooting Park property. Slides 19-22 were updated after the meeting.
- Airspace & Approaches
 - Approach airspace is limited because of JBER Special Use Restricted Area. Most frequent airport users are familiar with this and can navigate it, but it could be confusing to new users. The project team can have conversations with the Air Force to see if they are willing to move some of the restricted airspace.
 - Some want published instrument approaches, though it was not something frequently asked for. The approaches are something Federal Aviation Administration (FAA) has unilateral control over.
- Runways, Runway Safety Areas (RSAs), & Runway Protection Zones (RPZ)
 - The fence on the southwest side creates a hazard.
 - There is a need for surface improvement on the gravel runway, but potential issue with FAA funding eligibility due to current runway configuration.
 - The RSA length does not meet FAA standards.
- Taxiways & Visual Aids
 - The lights need to get upgraded. The FAA knows this.
 - Pilots want a new taxiway between E and G.
 - The “supplemental” wind cone put up by users has started falling apart. It would be good to put a new/permanent one up.
 - Precision Approach Path Indicator (PAPI) or Visual Approach Slope Indicator (VASI) is wanted on the 02L side.
- Aprons & Weather Equipment
 - Vehicle parking is desired.
 - Pilots want electric outlets at tie-downs.
 - Permanent, well maintained public restroom facilities are desired.
 - Some want an apron designated for commercial use.
 - There is a hill south of the southern taxiway between the Southeast Apron and Taxiway A that blocks the view on approach that some have asked to have removed.
 - Taxi lanes and parking areas designated for B-II aircraft are desired.
- Facilities & Access
 - The bathroom at the pilots’ lounge is maintained by the Birchwood Airport Association; this is not a DOT&PF or FAA facility/responsibility. The Birchwood Airport Association does not currently have the funds to upgrade this facility but has been working on it.
 - Some stakeholders want a controlled access gate, some do not.
 - Some stakeholders want a terminal built, some do not.
 - Some want a south perimeter road with user access, some do not.
- Safety, Airport Maintenance & Airport Management
 - Stakeholders are overall appreciative of snow removal operations.
 - Some interviewees want an on-site manager, some say the cost of an on-site manager would outweigh the benefits. SAG members noted different experiences and approaches to contacting the DOT&PF airport management. Overall, users desire manager contact information be more prominently displayed, as it is currently unclear who to call when there are problems or concerns.

- Land Use & Planning
 - One stakeholder interviewed wants an extended runway.
 - Some want a separation of commercial and general aviation use.
 - Stakeholders want better enforcement of vehicle and aircraft moving violations.
 - Some are concerned about a potential public-private partnership.
 - Users desire more hangar space, which would require the airport to lease new land.
 - The gravel ski strip is important, but the configuration needs to be improved to be safer and eligible for FAA funding.

Results from Initial Forecasts – Slide 26

- The state installed a General Audio Recording Device (GARD) to track how many planes have taken off and landed between July 21 and August 12, and September 2 and October 2.
 - That device found the airport is primarily used by small aircraft.
 - There are no changes to current use identified or forecasted.

Financial Plan – Slide 28

- The financial plan is intended to address projected growth, funding needs and sources, and any proposed changes to lease rates or use fees.
- This plan will benchmark Birchwood Airport’s operating costs against other airports in the region that provide similar service.
- The plan will provide a cash flow forecast based on the technical data and stakeholder input. We will then evaluate financial sustainability and look at a potential public/private partnership.

Potential Public/Private Partnership – Slides 29-32

- This component of the AMP is an opportunity to identify and explore potential management options with a third-party interest. Nothing has been decided.
- The intent is to see if a public-private partnership would better meet user needs over the next 20 years.
- Part of this analysis will assess the strengths, weaknesses, opportunities, and threats of potential third-party managers.
- Stakeholders are concerned that a third-party manager would raise rates and price out some existing and future users.
- Whether the airport would still get Airport Improvement Program and FAA funding under third-party management is something that is being investigated. Loss of such funds would result in loss of interest in securing a third-party manager.
- SAG members desire continued DOT&PF management, with increased communication and transparency between the agency and airport user groups.

Additional Questions/Topics to Consider

- Could the railroad on the east side be moved to allow for airport expansion?
- Could we change the flight approach pattern? The current pattern was set up for ultralight aircraft and helicopters on the mountain side. Ultralights are not currently used at the airport.
- Could there be a designated landing space for helicopters?

Heather A. Campfield

Subject: FW: 10/12/21 Birchwood AMP Update: SAG Mtg #2 - Agenda & Connect Info
Attachments: 10-12-2021_Birchwood AMP_SAG Meeting #2_Agenda.pdf

HEATHER CAMPFIELD, IAP²
Environmental Services Manager
o: 907.746.5230 | c: 907.229.5646
www.HDLalaska.com



f in

From: Shelly Wade <shelly@agnewbeck.com>
Sent: Tuesday, October 5, 2021 12:03 PM
To: Shelly Wade <shelly@agnewbeck.com>
Subject: 10/12/21 Birchwood AMP Update: SAG Mtg #2 - Agenda & Connect Info

Good afternoon and Happy Fall, Birchwood AMP Update Stakeholder Advisory Group Members – Attached and below, please find our agenda and connect information for next Tuesday afternoon’s SAG meeting. Later this week, we will send links to related materials, including:

- Frequently Asked Questions (FAQs)
- Financial Analysis
- Aviation Activity Forecast

I will also share our meeting flyer for **Virtual Public Meeting #2, slated for Wednesday, October 27th, 6:00 – 8:00 PM.** We are also doing public notices in local newspapers, Facebook posts, e-blasts to our contact list (over 200 people), and plan to have an electronic reader board advertising the meeting. We’ll also look forward to your help getting the word out!

Much like the position we were in last spring with COVID-19, the recent rise in cases in Anchorage and across the state necessitate this second public meeting be held virtually. State staff and other partners have been directed to work from home. Community participation, with ample opportunities to ask questions and make comments during the meeting (and to hear each other), will be critical for this second meeting where the project team will present proposed alternatives for the airport layout. We have some ideas for how to make the meeting welcoming and interactive for all, using the virtual platform. We look forward to getting the SAG’s thoughts on our proposed approach.

More coming from us later this week. In the interim, please call or email with any comments, questions, or concerns.

Very respectfully,
Shelly

Shelly Wade, AICP
907.242.5326 Cell (call or text) | shelly@agnewbeck.com

Dena'inaq e'nen'aq' gheshtnu ch'q'u yeshdu. (Dena'ina) *I live and work on the land of the Dena'ina. (English)*
Translation by J. Isaak and S. Shaginoff-Stuart

-----Original Appointment-----

From: Shelly Wade
Sent: Friday, June 25, 2021 5:02 PM
To: Shelly Wade; Aubrey Wieber; Wuttke-Campoamor, Jessica L (DOT); Gardner, Shawn C (DOT); Swenson, Mark R (DOT sponsored); Heather A. Campfield; Tor Anderzen (tanderzen@hdlalaska.com); aleggett@anchagemuseum.org; abe@helio-alaska.com; lindamoodb@akrr.com; cbrophi@eklutna.org; boretideservices@gmail.com; jeffnbanks@icloud.com; 143474@akwg.cap.gov; kfoster@eklutnainc.com; larsgleitsmann@gmail.com;

lars@betteraircraftfabric.com; marcl@eklutna.org; robstapleton@alaska.net; ryan.marlow@alaska.gov; valkur@mtaonline.net; sawa@mtaonline.net; jonathan.linguist@faa.gov; admin@brspclub.com; Wallace, Carley Ann E (FAA); Zechariah Meyer

Subject: Birchwood AMP Update: Stakeholder Advisory Group Mtg #2

When: Tuesday, October 12, 2021 1:30 PM-4:00 PM (UTC-09:00) Alaska.

Where: please see invite & attached agenda for details

Agenda – see attached.

How to Connect

- To join for video, screenshare and audio:
 - Click here: <https://agnewbeck.zoom.us/j/85867518489?pwd=V3ZqdJtZDRzaXlyZmZkTTBrQnlSQ09>
- To join for audio only:
 - Dial: 1-888-475-4499 (Toll Free)
 - Meeting ID: 858 6751 8489#
 - Passcode: 282522#

Objectives

- Review the project and purpose.
- Update and gather SAG input on financial analysis, land use assessment, forecast and alternatives.
- Prepare for Virtual Public Meeting #2 (10/27/21; 6:00 – 8:00 PM) and next steps.

**Alaska Department of Transportation & Public Facilities
 Birchwood Airport Master Plan (AMP) Update
 Stakeholder Advisory Group (SAG) Meeting #2 (virtual)**



October 12th, 2021; 1:30 – 4:00 pm

How to Connect

- To join for video, screenshare and audio:
 - Click here: <https://agnewbeck.zoom.us/j/85867518489?pwd=V3ZqdJtZDRzaXIyZmZkTTBrQnlSQTO9>
- To join for audio only:
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Objectives

- Review the project and purpose.
- Update and gather SAG input on financial analysis, land use assessment, forecast and alternatives.
- Prepare for Virtual Public Meeting #2 (10/27/21; 6:00 – 8:00 PM) and next steps.

Agenda

Time	Item
1:30 – 1:40 pm	Welcome & Introductions <ul style="list-style-type: none"> • Land acknowledgement • Birchwood AMP purpose and schedule • Meeting purpose and guidelines
1:40 – 2:00 pm	Financial Analysis <ul style="list-style-type: none"> • How does the money work? What are Birchwood Airport’s revenue and expenses? • How do Birchwood Airport finances and operations compare to similar AK airports?
2:00 – 2:15 pm	Land Use Assessment <ul style="list-style-type: none"> • What are the intended future land uses for the Birchwood Airport and adjacent lands?
2:15 – 2:35 pm	FAA Framework & Context <ul style="list-style-type: none"> • How do federal policies and criteria impact the Birchwood today and future operations?
2:35 – 3:50 pm	Aviation Forecast & Alternatives <ul style="list-style-type: none"> • What is the historic use, and current and anticipated future demands at the Birchwood Airport? • What options are being considered to best preserve interests and meet needs at the Birchwood Airport?
3:50 – 4:00 pm	Next Steps & Wrap Up <ul style="list-style-type: none"> • Virtual Public Meeting #2 – Wednesday, October 27, 2021; 6:00 – 8:00 PM • Other ideas for getting community input on the alternatives (e.g., surveying levels of support) • Public/Private Partnership Analysis

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Stakeholder Advisory Group Meeting #2

Prepared for Alaska Department of Transportation &
Public Facilities

*Presented and facilitated by HDL Engineering Consultants &
Agnew::Beck Consulting*

October 12, 2021; 1:30 – 4:00 PM



1:30-1:40 pm

Welcome & Introductions

Who's in the Room?



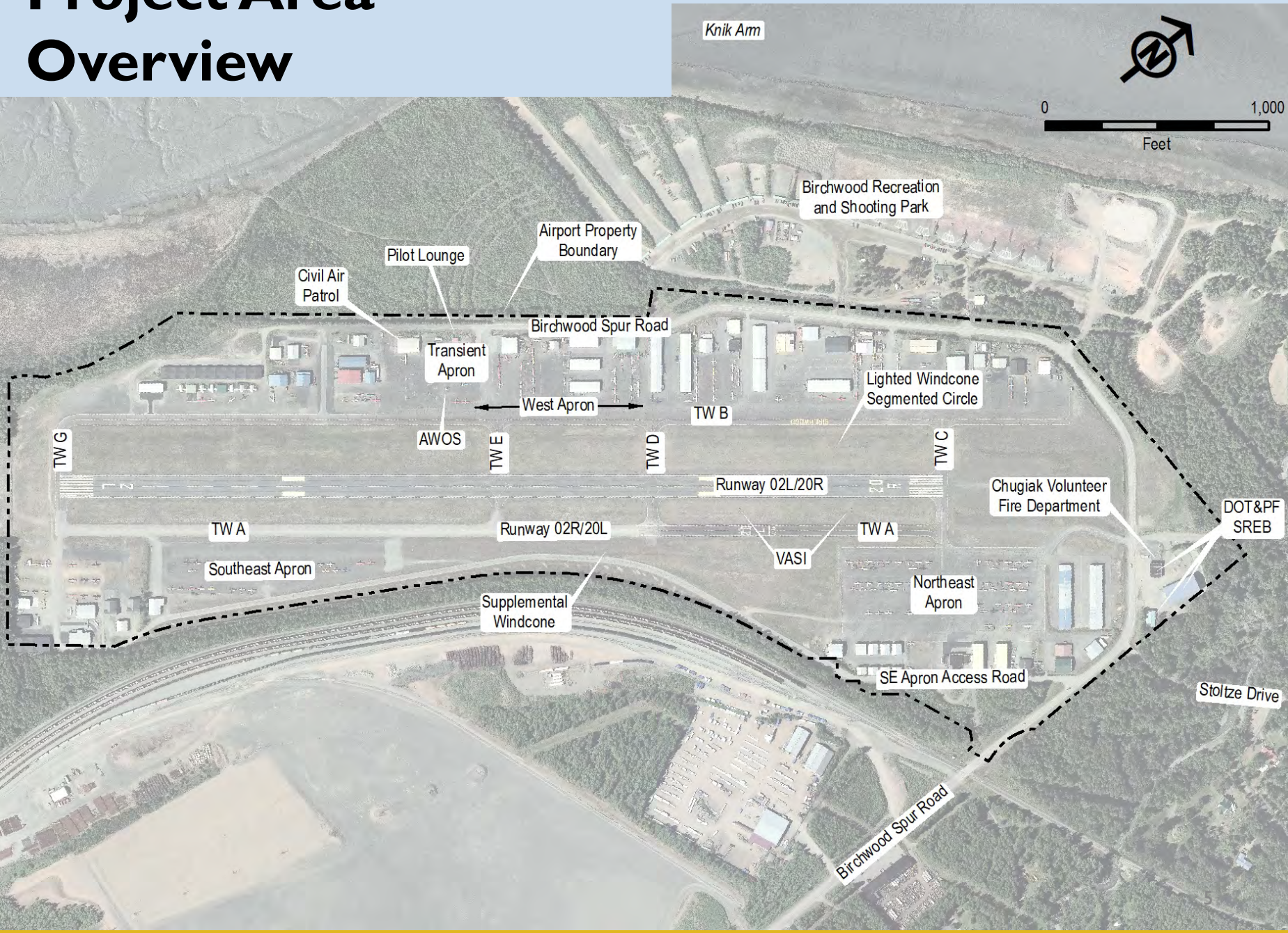
Land Acknowledgement

*Dena'inaq ełnen'aq'
gheshtnu ch'q'u yeshdu. (Dena'ina)*

Translation by J. Isaak and S. Shaginoff-Stuart

*I live and work on the
land of the Dena'ina. (English)*

Project Area Overview



Land Ownership



Project Purpose

To determine how the airport can best serve the future interests and needs of the flying public, aviation community, Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders.



Project Schedule

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings

Progress Since March 2021

- Aviation Activity Forecast
- Financial Assessment
- Land Use Assessment
- Frequently Asked Questions

Meeting Purpose

- Review the project and purpose.
- Update and gather SAG input on financial analysis, land use assessment, forecast and alternatives.
- Prepare for Public Meeting #2.

General Meeting Guidelines

- Be respectful.
- Be positive and solutions oriented.
- Be clear and concise.
- Be specific.
- Avoid jargon and acronyms.
- Think creatively and strategically.

Online & Telephonic Meeting Guidelines

Please:

1. Follow Shelly's lead as the designated facilitator.
 - Throughout the meeting, SAG Members will have several opportunities to comment or ask questions.
2. Mute your microphone when you are not talking.
3. If you have joined by video, don't forget – everyone can see you 😊.
4. We will do introductions, but please repeat your name when it is your turn to comment or ask a question.
5. Please limit use of the Zoom chat space, unless prompted by a guiding question, or you're having a technical issue.

1:40 – 2:00 pm

Financial Assessment

Where does Birchwood Airport revenue go?

- All profit from DOT&PF airports go to a general aviation fund.
- This money funds maintenance and operations for all DOT&PF airports.
- DOT&PF is required to provide access to all Alaska communities, so it prioritizes maintenance in communities off the road system.

Financial Assessment

- Northern Economics, Inc. prepared a comprehensive financial assessment of the Birchwood Airport.
- The assessment used data from 2015-2020.
- The assessment includes revenue, expenses and a comparison to two similar airports.

Birchwood Airport's Revenue and Expenses

The Birchwood Airport has had an operating profit over the last six years.

Table 2.1 Birchwood Airport Revenues, Expenses, and Operating Profits, \$, FY 2015–2020

Fiscal Year	Revenue	Expenses	Operating Profit
2015	208,165.98	66,793.98	141,372.00
2016	201,024.25	57,423.97	143,600.28
2017	200,555.79	134,124.85	66,430.94
2018	243,716.10	99,907.24	143,808.86
2019	258,990.50	97,672.78	161,317.72
2020	273,832.14	147,209.04	126,623.10

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Top Revenue Sources

FY2020 Revenue:

- 70% came from lease fees or “land use.”
- 25% came from tie-downs and parking.
- Fees and fuel permits make up the remaining 5%.

Top Revenue Sources

Revenue grew 36.5% from FY 2017 to FY 2020.

Table 2.2 Birchwood Airport Revenue Detail, \$, FY 2015–2020

Fiscal Year	Assigned Aircraft Tie-down/Transient Parking	Fuel Dispensing Permit	Interest/Late Fees	Application/Process Fees	Land Use	Total Revenue
2015						208,165.98
2016						201,024.25
2017	50,937.19	2,895.35	260.73	1,050.00	145,412.52	200,555.79
2018	68,718.00	4,721.14	243.28	4,225.00	165,808.68	243,716.10
2019	68,756.16	10,982.53	396.59	3,775.00	175,080.22	258,990.50
2020	68,723.00	5,137.15	212.52	8,025.00	191,734.47	273,832.14

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Top Expenses

- The Birchwood Airport's most significant expenses in FY 2020 were facilities and capital improvements.
- Historically, services were the largest expenses.

Table 2.3 Birchwood Airport Expense Detail, \$, FY 2015–2020

Fiscal Year	Personal Services	Services	Commodities	Capital Outlay	Facilities	Total Expenses
2015	24,630.88	6,289.18	35,873.92			66,793.98
2016	26,887.86	5,296.41	25,239.70			57,423.97
2017	74,387.00	51,310.18	8,427.67			134,124.85
2018	45,629.06	42,344.99	11,933.19			99,907.24
2019	42,399.96	46,883.01	8,389.81			97,672.78
2020	27,708.92	10,715.40	5,429.71	25,207.05	78,147.96	147,209.04

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Benchmarking

Northern Economics, Inc. compared the Birchwood Airport with similar facilities in Wasilla and Soldotna



Benchmarking

- Wasilla has four times as many operations but about half the based aircraft.
- Soldotna has about twice as many operations but half the based aircraft.

Table 4.2 Estimated Operations and Based Aircraft at Birchwood, Soldotna, and Wasilla Airports, 2020

Airport	Total Operations	Based Aircraft
Birchwood	10,259	308
Soldotna	21,100	169
Wasilla	42,660	168

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Benchmarking

Birchwood Airport's operating expenses are lower than the city-owned comparable facilities, largely due to a lack of on-site staff.

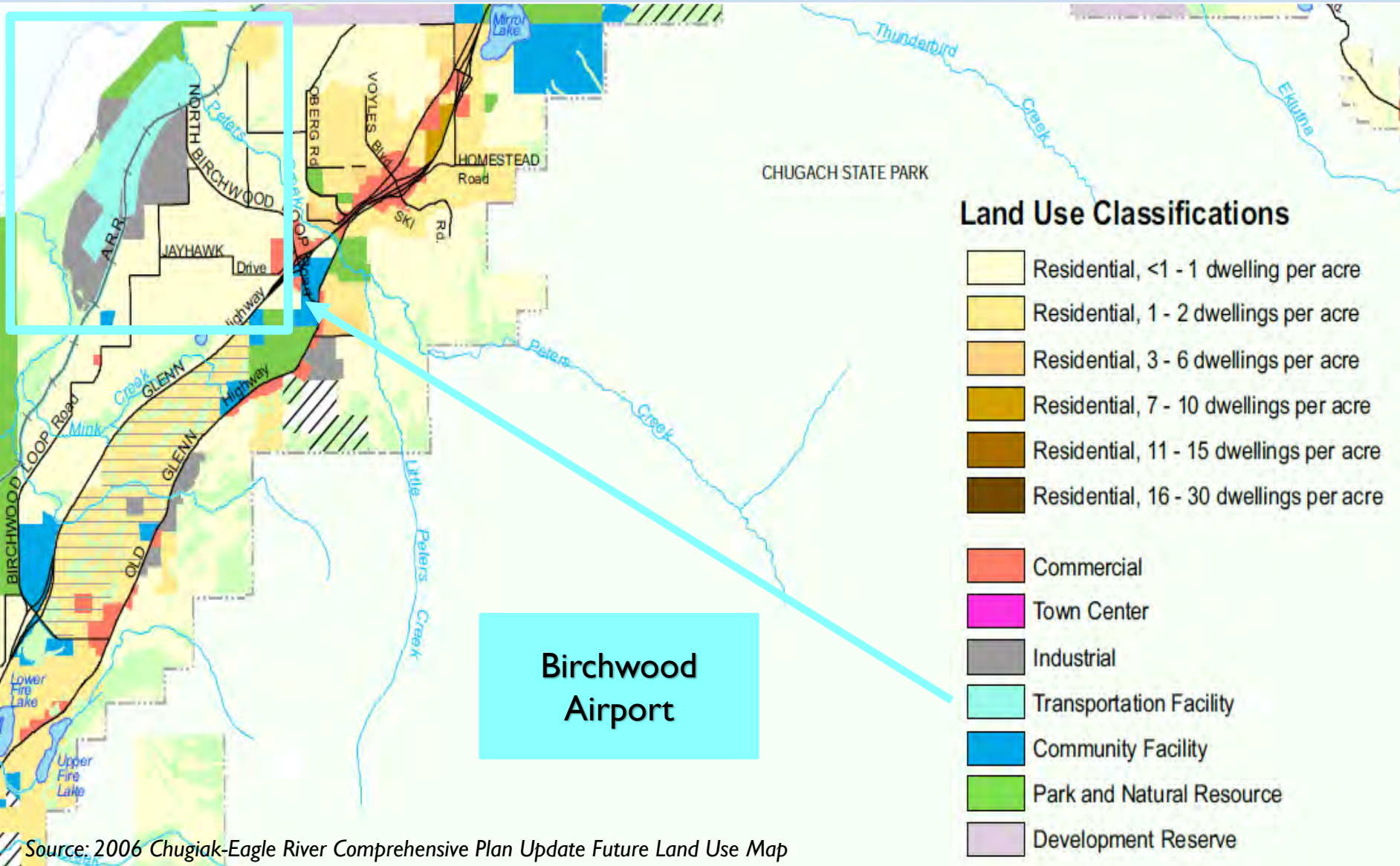
Total 2020 Operating Expenses		
Birchwood Airport	Soldotna Airport	Wasilla Airport
\$147,209	\$149,848	\$214,392

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

2:00 – 2:10 pm

Land Use Assessment

Future Land Use

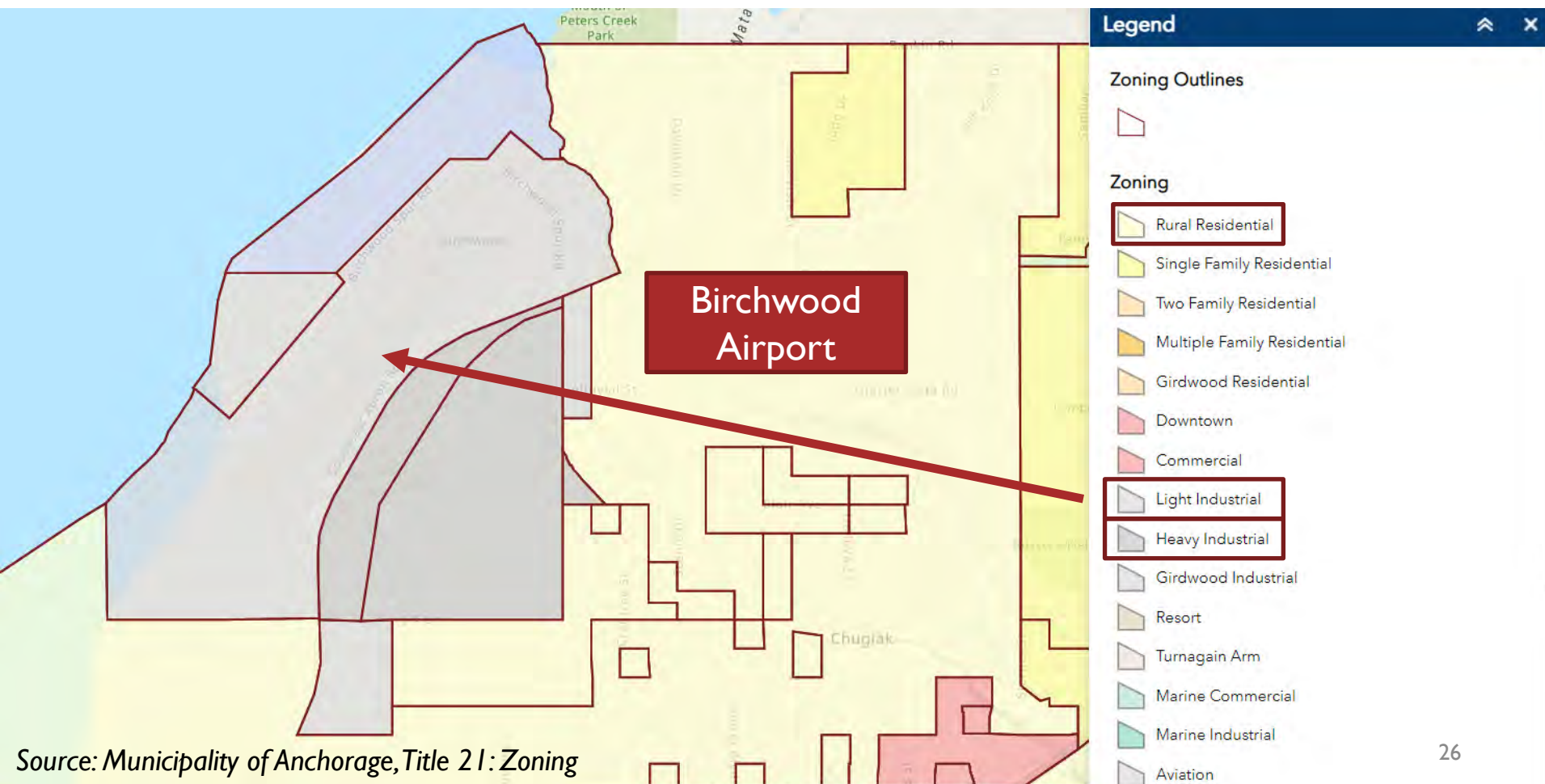


Future Land Use

- Past and current versions of future land use maps continually show the Birchwood Airport and surrounding areas as predominantly transportation, industrial, recreation, and low density residential.
- Adjacent landowners reported no plans that conflict with airport operations.

Existing Zoning

The Birchwood Airport is zoned as “light industrial.” Adjacent land is mostly industrial and low-density residential.



Birchwood Airport Inventory

- In 2020, 308 aircraft were based at the airport.
- The airport includes 67 lease lots and 119 tie-downs.
 - Lease lots and tie-downs are generally all occupied.

Adjacent Lands

- Eklutna, Inc. is the largest nearby landowner, owning several parcels to the north and south.
- The Alaska Railroad owns 174 acres to the east.
- The Birchwood Recreation Shooting Park sits on 72 acres to the west.

Expansion Opportunities



LEGEND

- STATE OF ALASKA
- MUNICIPALITY OF ANCHORAGE
- MUNICIPAL AND STATE PARKS
- ALASKA RAILROAD
- EKLUTNA, INC
- PRIVATE

Expansion Opportunities

- The Airport is framed by Cook Inlet to the west, the railroad to the east and Peter's Creek to the north.
- The most feasible expansion would be through acquisition of Eklutna, Inc. land to the south.
 - **IMPORTANT:** The Eklutna Tribe would assess any Eklutna, Inc. lands for cultural and archaeological assets prior to selling.

2:15 – 2:35 pm

FAA Framework & Context

FAA roles during planning process

The recommendations contained in an airport master plan represent the views, policies and development plans of the airport sponsor and do not necessarily represent the views of the FAA.

FAA advises on standards, eligibility/requirements for projects, sound planning practices, and other matters as needed.

Ultimately, FAA:

- Accepts the overall master plan
- Approves the forecast and critical aircraft determination
- Conditionally approves the Airport Layout Plan (ALP)

FAA acceptance/approval of the above does not constitute a commitment to participate in any development depicted in the plan, nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public law.

Airport Improvement Program

Historically, \$214M annual avg (within Alaska)

- Approximately \$8.3M at BCV in past 10 years

Projects to preserve/enhance airport safety, capacity, security, and environmental concerns.

A few requirements for AIP projects:

- Eligible for AIP program
- Justified by civil aeronautical demand (e.g., critical aircraft)
- Meet FAA standards
- Depicted on approved ALP

Needs within the system exceed available funds.

2:35 – 3:50

Aviation Forecast & Alternatives

Results from Aviation Activity Forecast

- The Aviation Activity Forecast for operations is **based on observed and recorded aviation activity.**
- Aviation activity data was **recorded using a General Audio Recording Device (G.A.R.D.)*** between July 21 and August 16, 2020, and September 2 and October 2, 2020.
- **FAA Approval – September 15, 2021**

**The G.A.R.D. records radio transmissions and operations through radar surveillance based on active aircraft transponders and cross-references transponders with the FAA's Automatic Dependent Surveillance-Broadcast (ADS-B) registry to identify the make and model of the aircraft.*

Results from Aviation Activity Forecast

- Critical Aircraft A-I (small) (Cessna 172/182).
- No changes to current uses have been forecasted.
- 80% are training operations.

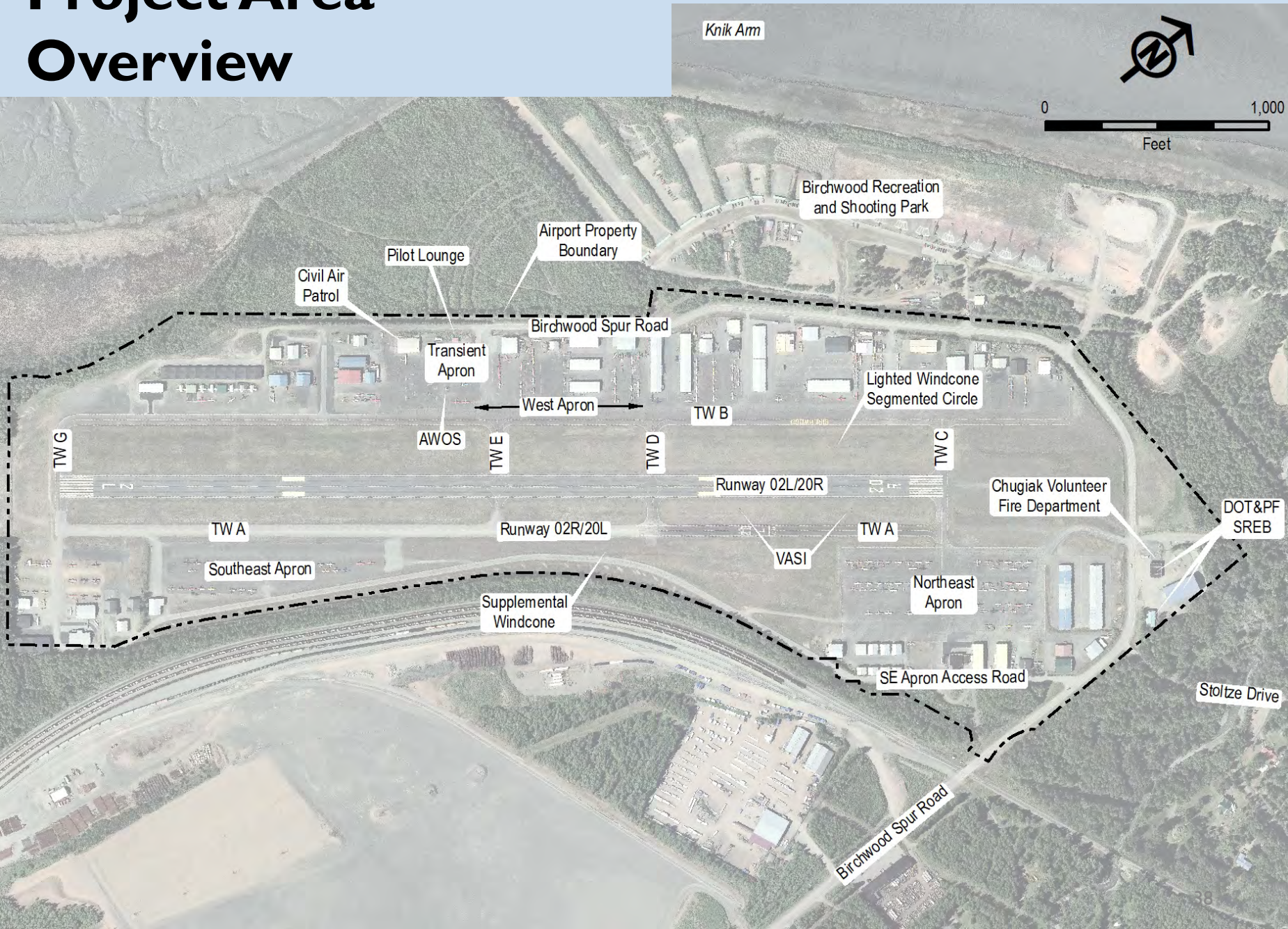
	Current (2020)	Forecasted (2040)
Total Airport Operations and Training Operations	~67,000	~76,300
Tie-downs	119	157
Lease lots	67	92

Development of Alternatives

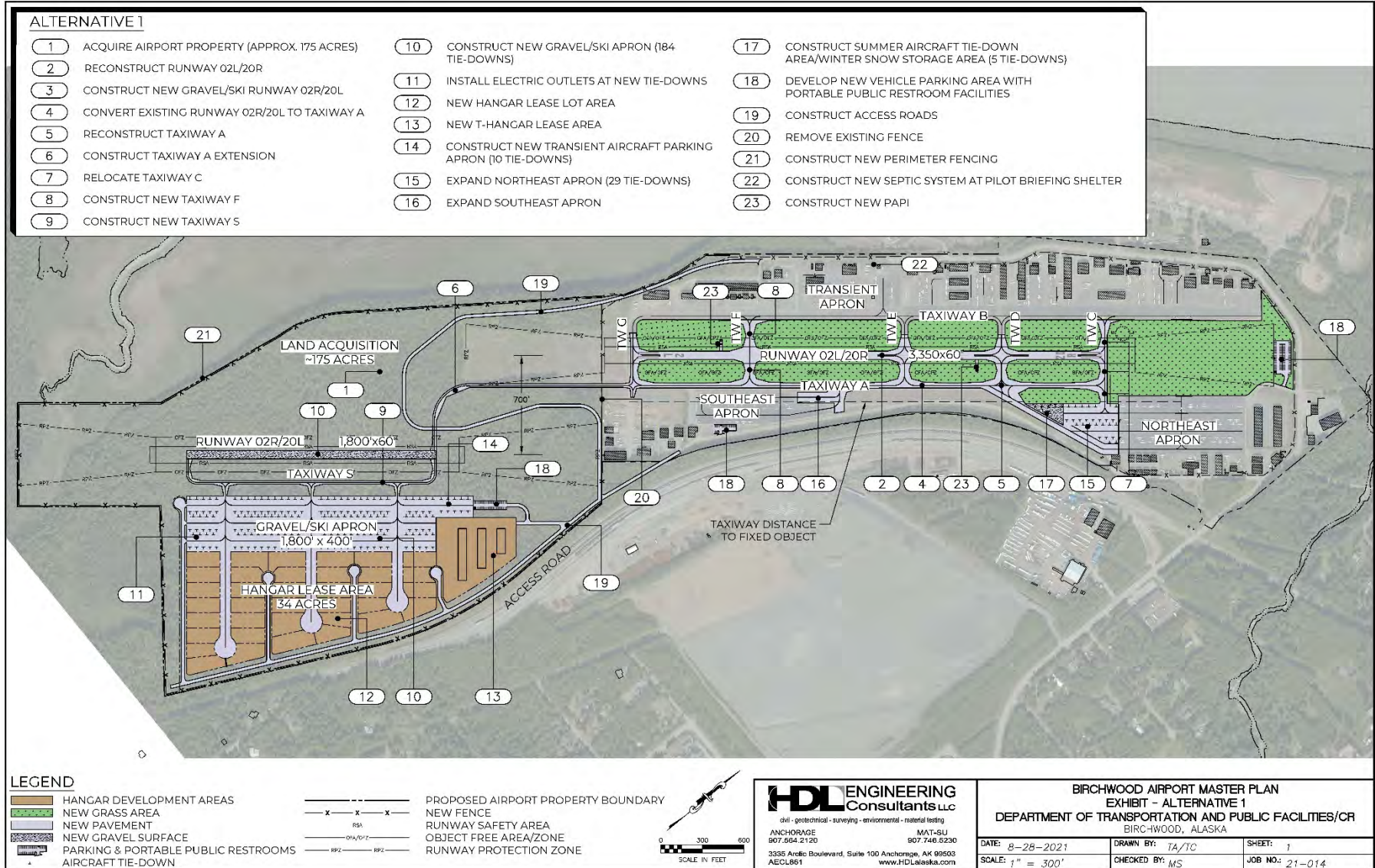
Three potential Alternatives have been developed. Alternatives are based on:

- Critical aircraft.
- Facility requirements identified during interviews and inventory.
- Future gravel/ski strip location.
- Forecasted need for more tie-down permits and lease lots.

Project Area Overview



Proposed Alternative One



ALTERNATIVE 1

- | | | |
|--|--|---|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 175 ACRES) | 10 CONSTRUCT NEW GRAVEL/SKI APRON (184 TIE-DOWNS) | 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS) |
| 2 RECONSTRUCT RUNWAY 02L/20R | 11 INSTALL ELECTRIC OUTLETS AT NEW TIE-DOWNS | 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES |
| 3 CONSTRUCT NEW GRAVEL/SKI RUNWAY 02R/20L | 12 NEW HANGAR LEASE LOT AREA | 19 CONSTRUCT ACCESS ROADS |
| 4 CONVERT EXISTING RUNWAY 02R/20L TO TAXIWAY A | 13 NEW T-HANGAR LEASE AREA | 20 REMOVE EXISTING FENCE |
| 5 RECONSTRUCT TAXIWAY A | 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) | 21 CONSTRUCT NEW PERIMETER FENCING |
| 6 CONSTRUCT TAXIWAY A EXTENSION | 15 EXPAND NORTHEAST APRON (29 TIE-DOWNS) | 22 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER |
| 7 RELOCATE TAXIWAY C | 16 EXPAND SOUTHEAST APRON | 23 CONSTRUCT NEW PAPI |
| 8 CONSTRUCT NEW TAXIWAY F | | |
| 9 CONSTRUCT NEW TAXIWAY S | | |

LEGEND

- | | |
|-------------------------------------|------------------------------------|
| HANGAR DEVELOPMENT AREAS | PROPOSED AIRPORT PROPERTY BOUNDARY |
| NEW GRASS AREA | NEW FENCE |
| NEW PAVEMENT | RUNWAY SAFETY AREA |
| NEW GRAVEL SURFACE | OBJECT FREE AREA/ZONE |
| PARKING & PORTABLE PUBLIC RESTROOMS | RUNWAY PROTECTION ZONE |
| AIRCRAFT TIE-DOWN | |

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 AECL861

WAT-SLU 907.746.8230
 www.HDLalaska.com

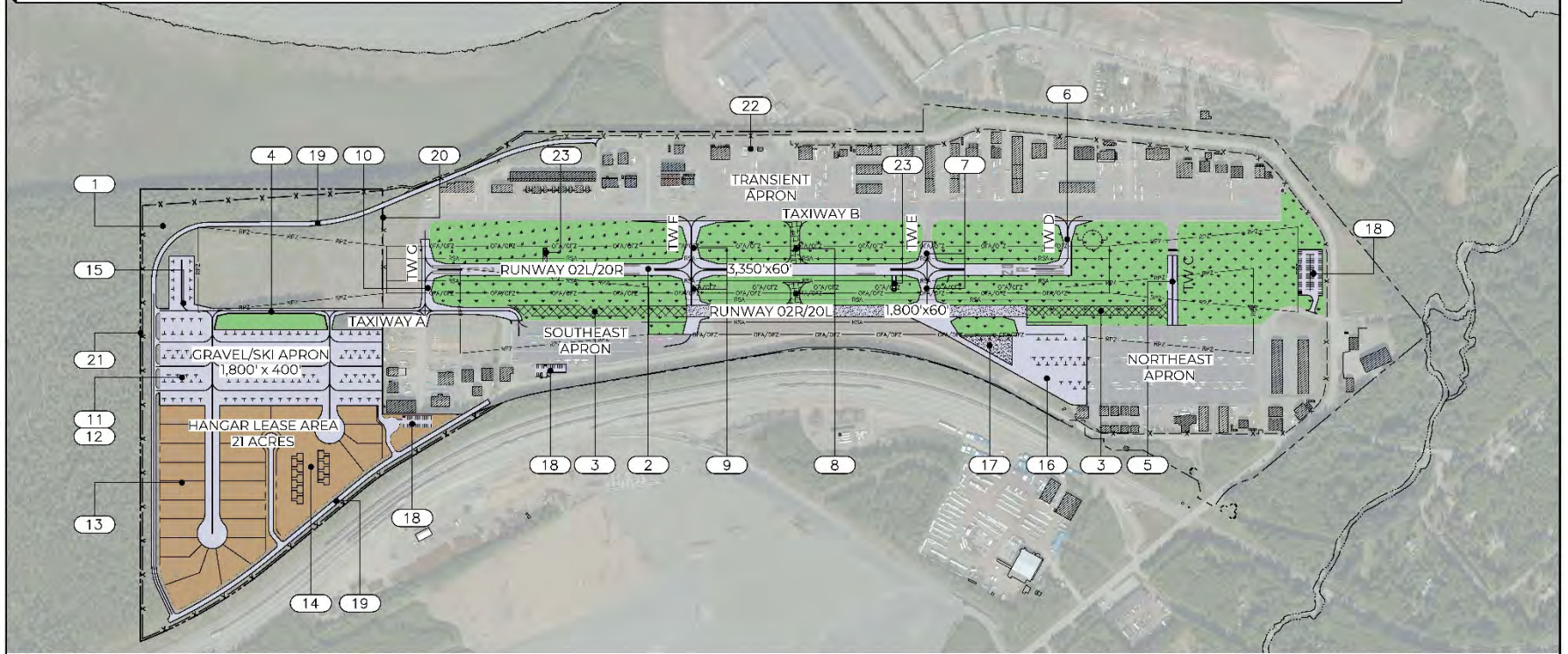
BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 1
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 8-28-2021	DRAWN BY: TA/TC	SHEET: 1
SCALE: 1" = 300'	CHECKED BY: MS	JOB NO.: 21-014

Proposed Alternative Two

ALTERNATIVE 2

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) 2 RECONSTRUCT RUNWAY 02L/20R 3 REMOVE TAXIWAY A SEGMENTS 4 CONSTRUCT TAXIWAY A EXTENSION 5 RECONSTRUCT TAXIWAY C 6 CONSTRUCT NEW TAXIWAY D 7 RECONSTRUCT EXISTING TAXIWAY D AND RENAME TO TAXIWAY E 8 REMOVE EXISTING TAXIWAY E 9 CONSTRUCT NEW TAXIWAY F | <ul style="list-style-type: none"> 10 RECONSTRUCT EXISTING TAXIWAY G 11 CONSTRUCT NEW GRAVEL/SKI APRON (122 TIE-DOWNS) 12 INSTALL ELECTRICAL OUTLETS AT NEW TIE-DOWN SPACES 13 NEW HANGAR LEASE LOT AREA 14 NEW T-HANGAR LEASE LOT AREA 15 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) 16 EXPAND NORTHEAST APRON (25 TIE-DOWNS) 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS) | <ul style="list-style-type: none"> 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES 19 CONSTRUCT ACCESS ROADS 20 REMOVE EXISTING FENCING 21 CONSTRUCT NEW PERIMETER FENCING 22 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER 23 CONSTRUCT NEW PAPI |
|---|---|--|



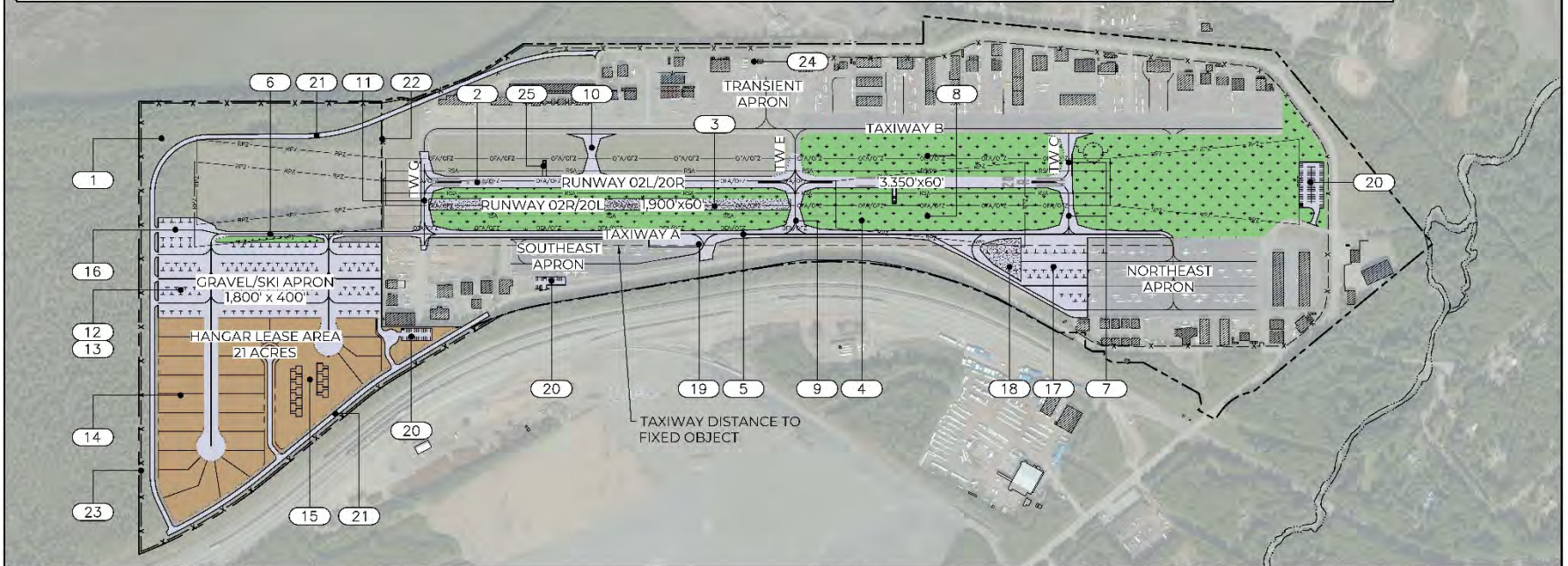
<p>LEGEND</p> <ul style="list-style-type: none"> HANGAR DEVELOPMENT AREAS NEW GRASS AREA NEW PAVEMENT NEW GRAVEL SURFACE PARKING & PORTABLE PUBLIC RESTROOMS AIRCRAFT TIE-DOWN 	<ul style="list-style-type: none"> PROPOSED AIRPORT PROPERTY BOUNDARY NEW FENCE RUNWAY SAFETY AREA OBJECT FREE AREA/ZONE RUNWAY PROTECTION ZONE 	<div style="text-align: center;"> <p>SCALE: IN FEET</p> </div> <div style="text-align: center;"> <p>HDL ENGINEERING Consultants LLC</p> <p>div - geotechnical - surveying - environmental - material testing</p> <p>ANCHORAGE 907.564.2120 MAT-SU 907.746.5230</p> <p>3335 Arctic Boulevard, Suite 100 Anchorage, AK 99503 AECU1961 www.HDLalaska.com</p> </div>
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<p>BIRCHWOOD AIRPORT MASTER PLAN EXHIBIT - ALTERNATIVE 2 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR BIRCHWOOD, ALASKA</p>	<p>DATE: 9-20-2021 SCALE: 1" = 250'</p>
<p>DRAWN BY: TA/TC CHECKED BY: MS</p>	<p>SHEET: 2 JOB NO.: 20-014</p>

Proposed Alternative Three

ALTERNATIVE 3

- | | | |
|--|--|---|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | 9 EXTEND EXISTING TAXIWAY E | 18 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS) |
| 2 RECONSTRUCT RUNWAY 02L/20R | 10 CONSTRUCT NEW TAXIWAY F | 19 CONNECT TAXIWAY A TO THE NORTH EDGE OF THE SOUTHEAST APRON |
| 3 CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02R/20L | 11 RECONSTRUCT EXISTING TAXIWAY G | 20 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES |
| 4 REMOVE EXISTING RUNWAY 02R/20L | 12 CONSTRUCT NEW GRAVEL/SKI APRON (118 TIE-DOWNS) | 21 CONSTRUCT ACCESS ROADS |
| 5 RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION | 13 INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES | 22 REMOVE EXISTING FENCE |
| 6 CONSTRUCT TAXIWAY A EXTENSION | 14 CONSTRUCT NEW HANGAR LEASE AREA | 23 CONSTRUCT NEW PERIMETER FENCING |
| 7 RELOCATE AND RECONSTRUCT TAXIWAY C | 15 CONSTRUCT NEW T-HANGAR LEASE AREA | 24 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER |
| 8 REMOVE EXISTING TAXIWAY D | 16 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) | 25 CONSTRUCT NEW PAPI |
| | 17 EXPAND NORTHEAST APRON (30 TIE-DOWNS) | |



LEGEND

- | | |
|-------------------------------------|------------------------------------|
| HANGAR DEVELOPMENT AREAS | PROPOSED AIRPORT PROPERTY BOUNDARY |
| NEW GRASS AREA | NEW FENCE |
| NEW PAVEMENT | RUNWAY SAFETY AREA |
| NEW GRAVEL SURFACE | OBJECT FREE AREA/ZONE |
| PARKING & PORTABLE PUBLIC RESTROOMS | RUNWAY PROTECTION ZONE |
| AIRCRAFT TIE-DOWN | |



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 AECL961 www.HDLalaska.com

BIRCHWOOD AIRPORT MASTER PLAN
 EXHIBIT - ALTERNATIVE 3
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 9-20-2021	DRAWN BY: TA/TC	SHEET: 3
SCALE: 1" = 250'	CHECKED BY: MS	JOB NO.: 21-014

3:50 – 4:00 pm

Next Steps and Wrap Up

Birchwood AMP: Our Timeline

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings

Immediate Next Step

Wednesday, October 27th Public Meeting

- SAG feedback on proposed structure, agenda and participation
- How can we have a successful second public meeting?
- Post-Public Meeting survey

Learn More & Contact Us

<http://www.dot.state.ak.us/creg/birchwoodamp/>

Jessica Wuttke-Campoamor, DOT&PF Project Manager

Email: jessica.wuttke-campoamor@alaska.gov

Phone: 907-269-0519

Shelly Wade, Public Involvement Lead

Email: shelly@agnewbeck.com

Phone: 907-242-5326

Alaska Department of Transportation and Public Facilities

Birchwood Airport Master Plan (AMP) Update:

Stakeholder Advisory Group (SAG) Meeting #2 – NOTES



October 12, 2021; 1:30 – 4:00 pm

Participants

- Alaska Department of Transportation & Public Facilities (DOT&PF): Jessica Wuttke-Campoamor (Birchwood AMP Project Manager), Shawn Gardner (Anchorage Area Planner)
- Federal Aviation Association: Jonathan Linquist, Carley Wallace
- Aircraft Owners and Pilots Association: Rob Stapleton
- Birchwood Airport Association: Lars Gleitsmann, Abe Harman, Della Swartz
- Birchwood Community Council: Val Jokela
- Eklutna Real Estate Services LLC/Eklutna, Inc.: Ron Pollock
- Talon Hangar Association: Dennis Serie, Mike Morelli
- Airport users: Jeff Banks (glider pilot), David Swartz (hangar owner)
- Project Consultants:
 - HDL Engineering Consultants: Mark Swenson (Consultant Project Manager), Heather Campfield
 - Agnew::Beck Consulting: Shelly Wade (Public Involvement, Land Use and 3P Lead), Aubrey Wieber

Project Overview – **Slides 5-12**

- We are here to determine how to best serve the needs and interests of the aviation community, Alaska Department of Transportation and Public Facilities and other stakeholders, including adjacent landowners.
- We are on track to finish this project in Summer 2022. We will start drafting a plan in early 2022 and will hold a third SAG and Public Meeting.
- Since we last met, we have completed an Aviation Activity Forecast, a Financial Assessment, a Land Use Assessment and Frequently Asked Questions.
- We would like SAG members' feedback on the latest progress and advice for our upcoming Public Meeting.

Financial Assessment – **Slides 13-22**

- This product was completed by Northern Economics, Inc., in close partnership with DOT&PF.
 - We internally have some unanswered questions from the Financial Assessment.
- All profits from all DOT&PF airports go into a general aviation fund, that funds maintenance and operations for all DOT&PF airports, with an emphasis on access to communities off the road system.
- This full report is on the project website.
- The airport is and has been profitable.
 - Revenue grew 36.5% from 2017-2020.
 - 70% comes from lease fees, 25% come from tie-downs and parking and 5% comes from fees and fuel permits.
- Expenses have ranged over the years, but were higher in 2020, with more than \$100,000 in “Capital Outlay and Facilities.” We are still learning what this is.
- Birchwood had 10,259 operations in 2020, but that number is misleading, as it does not include “touch-and-go landings”. The airport is still getting higher use than that number would reflect. With touch-and-go landings, it is about 67,000 operations per year.

Discussion

- **Lars Gleitsmann:** In Birchwood, the operations are mainly private aircraft and training aircraft. When the weather is good, you often have four planes in the area doing touch and goes. That is somewhat similar in Wasilla and Soldotna, but you also have a lot of commercial use in those facilities.
 - **The project team will consider adding touch-and-go operations to the presentation.**
 - **The project team will try to get a better breakdown of costs going forward.**
- **David Swartz:** The airport is much more active than the 10,000-landing figure would imply. It is likely that these do not include touch-and-go landings. Birchwood is a lot busier than Wasilla is, and these numbers do not indicate that.
- **Jeff Banks:** Could you include more airports in the benchmarking exercise?
 - **Mark Swenson:** We looked at comparable airports where the way the airport is managed is closest with Birchwood. They did review Palmer information but decided to not include it.
- **Jeff Banks:** I am concerned about how much is being spent on cutting grass in the infield. It only gets cut once or twice per year. That needs to be included in the expense. It creates visibility issues.
 - **Mark Swenson:** We can pass that information along.
 - **David Swartz:** It would be good to get a better sense of how grass cutting is accounted for.
 - **Mark Swenson:** We are limited by how well DOT keeps data.
 - **Lars Gleitsmann:** I have never heard of anyone complain about grass in the infield in 25 years.

Land Use Assessment – Slides 23-30

- Land use plans for the airport and surrounding lands continually state the land should be maintained for existing uses.
- The 67 lease lots and 119 tie-downs are generally all occupied. We have repeatedly heard that pilots would like additional lease lots and tie-downs.
 - **Lars Gleitsmann:** There was a repaving and the number of tie-downs were lower after. How is that reflected in these numbers?
 - **Mark Swenson:** I do not know how many tie-downs were there before paving. There are additional tie-downs on lease lots, but these are DOT tie-downs.
- We have talked with adjacent landowners to see how their future plans could impact the airport and its users.
- There are specific features (Cook Inlet, railroad) that make expansion in most areas difficult. The most feasible area for expansion is on Eklutna, Inc. land to the south.
 - This does not mean Eklutna, Inc. is trying to sell this land. This is just the most realistic option for expansion.
 - **Jeff Banks:** Have there been any noise complaints? Is there any thought of noise mitigation?
 - **Shelly Wade:** We have not received any direct commentary on this.
 - **Val Jokela:** The most I have heard in Community Council meetings is that everyone supports current operations. They would not support the airport going to commercial operations.

FAA Framework and Context – Slides 31-33

- FAA's goal is to follow the local airport's plan.
- FAA policy does dictate how federal funds can be used.
- The FAA conditionally approves the Airport Layout Plan.
 - Approval does not guarantee funding for any specific project.
- FAA funds get dedicated through the Airport Improvement Program.

- Historically, \$214 million gets spent annually in Alaska.
- Birchwood generally earns \$150,000 in funds.
- Needs within the system can exceed available funds.
- Money is mostly going into pavement and infrastructure right around the runways, as well as safety things like fencing to keep wildlife out.
- For FAA to fund improvements, it needs to be eligible and justified by non-government demand.
 - **Rob Stapleton:** Have you seen new environmental regulations that might affect the Birchwood Airport?
 - **Jonathan Linquist:** Not that I am familiar with at the federal level. At the state level, there is an emphasis on soil contaminants, but that is largely about firefighting aircraft and is likely not an issue for Birchwood.
 - **Rob Stapleton:** There is a push for electric everything in some states. It wouldn't surprise me if there is a push for electric aircraft, and so it might benefit the airport to do some electrification.
 - **Jonathan Linquist:** I have heard of that push in other states. That isn't really an environmental driver, but rather it's driven by new technology.

Aviation Forecast & Alternatives – Slides 34-44

- 80% of activity is made up of training operations.
- No changes in type of use are forecasted.
- We are forecasting additional tie-downs and lease lots.
- **Lars Gleitsmann:** The recording device was in use during the rainiest part of the year, so there is less aviation activity. If the recording had been in late June and early July, it would have seen maybe three or four times the activity.
- **Abe Harman:** There is a lot of aircraft at the airport that is not ADS-B (Automatic Dependent Surveillance-Broadcast) aircraft. Was there a way to account for that?
 - **Mark Swenson:** I believe this did pick them up, and it would have been able to pick it up based on radio frequency. It was a fairly small number.
 - **Jessica Wuttke-Campoamor:** Yes, if the pilot called out their tail number on the radio or turned their lights on, it would account for that.
 - **Lars Gleitsmann:** Alaska also has a surprisingly high number of aircraft without radio.
- We have prepared three alternatives, which are mostly centered around treatment of the gravel ski strip location.
- We understand everyone appreciates the ski strip, but in the FAA's eyes, it has some issues. It is in the middle of Taxiway A.
- All alternatives are in line with critical aircraft needs, which is a requirement for FAA funding, so that means bringing runways and taxiways in line with critical aircraft needs.
- All alternatives will address the need for new apron spacing.
- Due to the volume of comments we received on parking and toilet facilities during stakeholder outreach, we have included those things in the alternatives.

Alternative One

- This includes a new gravel runway that meets the 700-foot separation requirement.
- To do this, we need to acquire Eklutna land to the south.
- This reconstructs Runway 02L/20R to shorten it and make it narrow, which aligns with critical aircraft needs.
- This includes a reconstruction of Taxiway A and moving the gravel runway.

- This relocates Taxiway C to provide access to the threshold of 20R.
- This constructs new Taxiway F.
- There is a new Taxiway S, parallel to the ski strip.
- This includes new lease lots in the southeast corner, along with transient parking.
- The northeast apron includes extending tie-downs as much as is possible.
- This configuration retains an area that can be used for tie-downs in the summer but would be used for snow removal storage in the winter.
- This alternative tries to fit the access road to the south of the airport.
- This includes a fixed pilot briefing structure.
- It removes the fence from the south side of the airport and includes a new fence further to the south.
- This is the “Cadillac” version of the alternatives.
- Pros: This meets FAA requirements for runway separation, removes in-line taxiways to improve airport safety, allows for expansion of leasable lands and apron space, could allow for separate traffic patterns for simultaneous operations and removes apron and hangar areas from within RPZs.
- Cons: This requires FAA headquarters approval to improve or move the ski strip.
 - Simultaneous operations could be a bad idea.
 - **Jonathan Linquist:** If you permit simultaneous operations, it increases the capacity of the airport system itself. If you keep the configuration as such where there is just one runway, it does not increase the capacity of the airport.
 - **Rob Stapleton:** What about traffic patterns this looks like a formula for collisions and communications issues...

Alternative Two

- The main difference for Alternative Two is the inline taxiways are being removed and the gravel ski strip is staying in the same place.
- There would not be a parallel taxiway on the east side.
- We would still need to acquire land for future development, such as more tie-downs and lease lots.
- This includes the reconstruction and relocation of several taxiways.
- A lot of the changes are like what is proposed in Alternative One.
- Pros: This alternative improves safety and allows for growth and maintains the current runway operations.
- Cons: This does not meet FAA separation requirements (this might not be a deal breaker for FAA funding), future runway improvements would not be AIP eligible, this would not have a taxiway on the east side of the airport. Additionally, the runway placement could create a confusing sight picture for pilots who are unfamiliar with the airport.
 - **Jonathan Linquist:** The multiple different types of surfaces is really unique to Alaska, so it is confusing for FAA headquarters in the Lower 48. However, I have been told that if we have a type of aircraft at the airport that requires a different material, that could be eligible. They would not review this until the project is proposed.

Alternative Three

- This configuration is like what you see in Wasilla and Palmer.
- It is like the other alternatives in that it allows for future lease lot expansions.
- It provides vehicle parking spaces at the different aprons.
- The main change is it would improve Taxiway E, construct Taxiway F and relocate Taxiway C. It would relocate Taxiway A 40 feet to the east.

- This option provides a gravel ski strip and taxiways on both sides of the runway.
- Pros: Removes in-line taxiways to improve safety, allows for growth, gives clear visuals to pilots and provides parallel taxiways on each side.
- Cons: It doesn't meet FAA parallel runway requirements and requires FAA approval.
 - This isn't necessarily a deal breaker for FAA funding.

Discussion

- **Rob Stapleton:** Alternatives One and Two seemed to have some safety issues in terms of the patterns. I am having some issues with the southeast area right next to the railroad tracks. Mostly, I am just concerned with the flight patterns.
 - **Mark Swenson:** I agree. The patterns would be a change and difficult. It could create conflict for floatplanes coming off nearby lakes.
- **David Swartz:** Alternative Three is the best.
- **Abe Harman:** Alternative Three is most practical.
 - **David Swartz:** I am curious about the north end on Alternatives one and two if there is room for an instrument approach?
 - **Mark Swenson:** It would change the threshold on that side. The idea of an instrument approach has come up minorly, but not loudly. We are curious how important that is.
 - **David Swartz:** For practice purposes, it is a good runway, and could be good to practice instrument approaches, but isn't a huge deal.
 - **David Swartz:** I wonder about runway overruns ending up with airplanes interacting with vehicles. This hasn't been a problem, but it does sometimes come up.
 - **Mark Swenson:** These alternatives would allow for more room.
- **Jeff Banks:** The runway is kind of skinny for long-winged gliders. If it was going right to grass or old asphalt, that would be fine, but it is going into runway lights, and I don't know what that spacing would be.
 - **Mark Swenson:** Usually lights are 10 feet beyond the edge of the runway. If additional width on the runways is desired, that could be brought up during plan design.
 - **Jeff Banks:** We don't use lights during the summer months. Maybe they could be capped from April to October, which would allow for gliders to come in and not clip the lights with the wings.
 - **Mark Swenson:** There could be precedent for that, but I am not aware of it.
 - **Jonathan Linquist:** I also am not aware of that happening. How often do you operate?
 - **Jeff Banks:** In the summer, there is one guy who operates daily.
 - **Jonathan Linquist:** The threshold to consider a specific type of aircraft is 500 operations per year.
 - **Jeff Banks:** There might be 250 operations.
- **Lars Gleitsmann:** I am appalled by the runway narrowing and shortening and trying to pitch it as a safety benefit. The width of runways is a huge safety feature. It helps planes from crashing. The FAA is making runways always smaller and narrower, and it's an abomination to me. The length and width of these runways has been a huge safety feature for teaching how to fly tail-dragger planes.
 - The glider operations have always been a positive element at the Birchwood Airport and narrowing the runway would make that unsafe.

- If we moved further to the east, we likely would start to get noise complaints from neighbors. Right now, only ultralight planes are flying over the east. Other planes are flying in over the ocean.
- **Mark: Swenson:** Everyone is frustrated with not being able to keep the runways wide. These are only in the event of a reconstruction project. These are not proposed imminent changes. These are unfortunately the reality of FAA funding.
- **Denny Serie:** On Alternative Three, when you are using straight skis, you go straight from the ski strip to ski parking. If you move the ski strip, you have to get on a taxiway. Starting in January, that would make it difficult for straight skis.
- **Abe Harman:** All three plans show pretty major expansions to the south. Are we also going to evaluate any scenarios of not changing the layout and what the implications of that would be? The current layout works well.
 - **Mark Swenson:** There is a “do nothing” alternative that will be considered as part of the Master Plan. If the FAA determines the separation between runways isn’t a big dealbreaker, that is big. But, if you do leave it exactly how it is, you will never get FAA funding for maintenance on the gravel ski strip.
- **Abe Harman:** Alternative Two doesn’t address moving the taxiway to the far east boundary.

Next Steps and Wrap Up – Slides 45-48

- Please share these slides with your representative groups.
- Please attend the second public meeting on October 27, which we want to be an interactive discussion.
- We want everyone to be able to share comments, whether written or verbal.
- This meeting will be virtual.
- After the second public meeting, we will have a survey to understand levels of support for the different alternatives.

From: [Shelly Wade](#)
To: [Shelly Wade](#)
Cc: [Miles, Philana C \(DOT\)](#)
Subject: Materials for 12/14 Birchwood Airport Master Plan Update: Stakeholder Advisory Group (SAG) Meeting #3 - VIRTUAL
Attachments: [image001.png](#)
[12-14-22 Birchwood AMP_SAG Mtg #3 Agenda.pdf](#)
[12-14-22 BCV_SAGMtg#3 GuidingSlides.pdf](#)
[12-14-22 BCVAirportLayoutAlternatives_forSAGReview.pdf](#)
Importance: High

Good morning, everyone –

We hope this message finds you safe and warm. Attached, please find materials for today's (Wed, 12/14) Birchwood SAG meeting. Virtual connect info is below and on the agenda.

See you online at 3:00 today!

Best,

Shelly

Shelly Wade, AICP

907.242.5326 Cell (call or text) | shelly@agnewbeck.com

Dena'inaq eñen'aq' gheshtnu ch'q'u yeshdu. (Dena'ina) *I live and work on the land of the Dena'ina. (English)*

Translation by J. Isaak and S. Shaginoff-Stuart



From: Shelly Wade

Subject: Birchwood Airport Master Plan Update: Stakeholder Advisory Group (SAG) Meeting #3 - VIRTUAL

When: Wednesday, December 14, 2022 3:00 PM-5:00 PM (UTC-09:00) Alaska.

Where: <https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>

Importance: High

Join Zoom Meeting

<https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>

Meeting ID: 857 9493 1121

Passcode: 124920

One tap mobile

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+13462487799,,85794931121#,,,,*124920# US (Houston)

Dial by your location

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+1 669 444 9171 US

+1 669 900 9128 US (San Jose)

+1 719 359 4580 US

+1 253 205 0468 US

+1 309 205 3325 US

+1 312 626 6799 US (Chicago)

+1 360 209 5623 US

+1 386 347 5053 US

+1 507 473 4847 US

+1 564 217 2000 US

+1 646 558 8656 US (New York)

+1 646 931 3860 US

+1 689 278 1000 US

+1 301 715 8592 US (Washington DC)

+1 305 224 1968 US

888 475 4499 US Toll-free

833 548 0276 US Toll-free

833 548 0282 US Toll-free

877 853 5257 US Toll-free

Meeting ID: 857 9493 1121

Passcode: 124920

Join by Skype for Business

<https://agnewbeck.zoom.us/skype/85794931121>

**Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan Update
 Stakeholder Advisory Group (SAG) Meeting #3 – December 14, 2022**



How to Connect

- To join for video, screenshare and audio:
 - Click here:
 - <https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxRelkQZlJQYUUh1a2FDdz09>
- To join for audio only:
 - Dial: 1-888-475-4499 (Toll Free)
 - Meeting ID: 857 9493 1121#
 - Passcode: 124920#

Objectives

Share and get SAG input on:

- Stakeholder feedback on draft airport layout alternatives.
- Revised airport layout alternatives that respond to stakeholder feedback.
- Planning process, schedule, and next steps.

Agenda

Item	Timing
3:00 – 3:30 p.m.	Welcome & Introductions <ul style="list-style-type: none"> • Land Acknowledgement • Process & Schedule – what are we doing today and what happens next (and when)
3:30 – 4:45 p.m.	Discussion: Draft Layout Alternatives <ul style="list-style-type: none"> • Summary of Stakeholder Feedback – November 12th Workshop and others • Revised Layout Alternatives 2 – 4: <ul style="list-style-type: none"> ○ How stakeholder input has been addressed (or not), other considerations
4:45 – 5:00 p.m.	Wrap-Up <ul style="list-style-type: none"> • Key Takeaways & Next Steps • Closing Comments & Questions

Summary of Project Milestones/Public Involvement

Year	Quarter	Overall Project Schedule	Public Involvement Milestones
2022	Oct, Nov, Dec	<ul style="list-style-type: none"> • Finalize Land Use Assessment • Finalize Public-Private Partnership Analysis 	<ul style="list-style-type: none"> • Public charrette/workshop (meeting #3) • SAG meeting #3 • Provide ongoing updates via social media and the project website • Public comment period ends
2023	Jan, Feb, Mar	<ul style="list-style-type: none"> • Prepare final draft Alternatives and Recommendations Report 	<ul style="list-style-type: none"> • Provide ongoing updates via social media and the project website
	Apr, May, June	<ul style="list-style-type: none"> • Prepare draft Airport Layout Plan • Draft Airport Master Plan Update released for public review 	<ul style="list-style-type: none"> • SAG meeting #4 • Public meeting #4 • Public comment period starts and ends • Provide ongoing updates via social media and the project website
	July, Aug	<ul style="list-style-type: none"> • Finalize Airport Master Plan Update • Finalize Airport Layout Plan 	<ul style="list-style-type: none"> • Announce the release of the final plans via social media and the project website

Stakeholder Advisory Group (SAG)

The SAG is providing feedback on the planning process and draft deliverables:

DOT&PF	Aircraft Owners & Pilots Association	Alaska Railroad	Birchwood Airport Association
Birchwood Civil Air Patrol	Birchwood Community Council	Birchwood Recreation & Shooting Park	Eklutna, Inc.
NOTE: The SAG is not a voting or decision-making body.	Native Village of Eklutna	Talon Hangar Condominium Association, Inc.	

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Stakeholder Advisory Group Meeting #3

Prepared for Alaska Department of Transportation &
Public Facilities

*Presented and facilitated by HDL Engineering Consultants &
Agnew::Beck Consulting*

December 14, 2022; 3:00 – 5:00 PM (virtual)



Land Acknowledgement

*Dena'inaq ełnen'aq'
gheshtnu ch'q'u yeshdu. (Dena'ina)*

Translation by J. Isaak and S. Shaginoff-Stuart

*I live and work on the
land of the Dena'ina. (English)*

Stakeholder Advisory Group (SAG)

The SAG is providing feedback on the planning process and draft deliverables:

DOT&PF

Aircraft Owners
& Pilots
Association

Alaska Railroad

Birchwood
Airport
Association

Birchwood Civil
Air Patrol

Birchwood
Community
Council

Birchwood
Recreation &
Shooting Park

Eklutna, Inc.

NOTE: The SAG is not a voting or decision-making body.

Native Village of
Eklutna

Talon Hangar
Condominium
Association, Inc.

Project Schedule

Summer 2020

Reconnaissance	Current Conditions, Uses, Issues and Needs
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Fall 2020-2021

Assessment	Airport Facilities, Airspace, Finances, Partnerships, Projected Use
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Fall 2022/Winter 2023

Draft Plan Development, Release + Review	Preliminary Airport Master Plan Update, Layout, Aeronautical Survey
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Spring/Summer 2023

Plan Refinement + Finalization	FINAL Airport Master Plan Update, Layout, Aeronautical Survey
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Community involvement

occurs throughout, including interviews, stakeholder working group meetings, and **three public meetings.**



Summary of Project Milestones/Public Involvement

Year	Quarter	Overall Project Schedule	Public Involvement Milestones
2022	Oct, Nov, Dec	<ul style="list-style-type: none"> Finalize Land Use Assessment Finalize Public-Private Partnership Analysis 	<ul style="list-style-type: none"> Public charrette/workshop (meeting #3) SAG meeting #3 Provide ongoing updates via social media and the project website Public comment period ends
	2023	Jan, Feb, Mar	<ul style="list-style-type: none"> Prepare final draft Alternatives and Recommendations Report
	Apr, May, June	<ul style="list-style-type: none"> Prepare draft Airport Layout Plan Draft Airport Master Plan Update released for public review 	<ul style="list-style-type: none"> SAG meeting #4 Public meeting #4 Public comment period starts and ends Provide ongoing updates via social media and the project website
	July, Aug	<ul style="list-style-type: none"> Finalize Airport Master Plan Update Finalize Airport Layout Plan 	<ul style="list-style-type: none"> Announce the release of the final plans via social media and the project website

Progress Since October 2021

- Second Stakeholder Advisory Group and Public Meetings (Fall 2021)
- Airport Stakeholder Survey (Spring 2022)
- Project Received Additional Funding Based on Public Involvement (Summer 2022)
- DOT Decision to Plan for Existing Runway Length & Width (Summer 2022)
- Public-Private Partnership Summary

What's Changed with the Alternatives (November to December 2022)

Alternative 1:

- No changes

Alternative 2:

- Renamed Runway 02R/20L to Runway 02S/20S.
- Added ski-plane turnarounds at each threshold of Runway 02S/20S.
- Showed removed sections of Taxiway A as maintained grass area for emergency glider landing operations.
- Relocated Taxiway D to intersect threshold of Runway 20S.
- Showed PAPI's installed on northeast side of main Runway 02L/20R to keep emergency glider landing area clear of visual aids.
- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD.
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Ensured that access is maintained around southwest side of new airport property for adjacent landowners and trail users.
- Re-aligned the access road to the Southeast Apron to be outside of the OFA/OFZ of Runway 02S/20S.
- Installed a supplemental wind cone on east side of airport.

What's Changed with the Alternatives (November to December 2022)

Alternative 3:

- Renamed Runway 02S/20L to Runway 02S/20S.
- Added ski-plane turnarounds at each threshold of Runway 02S/20S.
- Showed PAPI's installed on northeast side of main Runway 02L/20R to keep emergency glider landing area north of gravel runway clear of visual aids.
- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD.
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Ensured that access is maintained around southwest side of new airport property for adjacent landowners and trail users.
- Installed a supplemental wind cone on southeast side of airport.

Alternative 4:

- Renamed Runway 02R/20L to Runway 02S/20S.
- Showed PAPI's installed on northeast side of main Runway 02L/20R to keep emergency glider landing area on east side of 02R/20L.
- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD.
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Installed a supplemental wind cone on southeast side of airport

Evaluation of Alternatives

Currently evaluating alternatives based on the following criteria:

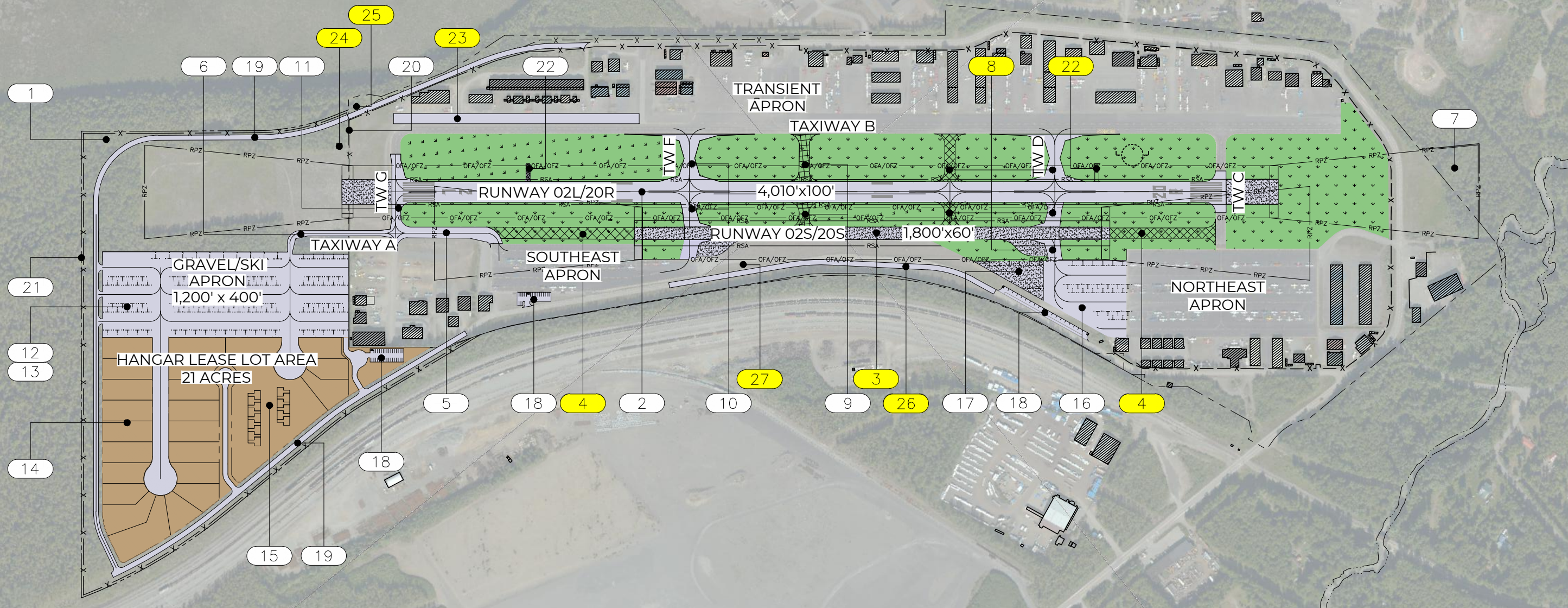
- Safety
- Environmental Impacts
- Airspace and Obstructions
- Land Use
- Meeting Demand for Additional Lease Lots
- Revenue Generation
- Maintenance Cost
- Capital Cost

Summary of Project Milestones/Public Involvement

Year	Quarter	Overall Project Schedule	Public Involvement Milestones
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	Apr, May, June	<ul style="list-style-type: none"> Prepare draft Airport Layout Plan Draft Airport Master Plan Update released for public review 	<ul style="list-style-type: none"> SAG meeting #4 Public meeting #4 Public comment period starts and ends Provide ongoing updates via social media and the project website
	July, Aug	<ul style="list-style-type: none"> Finalize Airport Master Plan Update Finalize Airport Layout Plan 	<ul style="list-style-type: none"> Announce the release of the final plans via social media and the project website

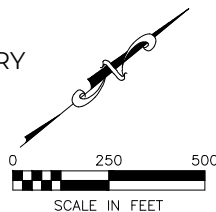
ALTERNATIVE 2

- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES)
- 2 RECONSTRUCT RUNWAY 02L/20R
- 3 RECONSTRUCT RUNWAY 02R/20L WITH SKI-PLANE TURNAROUNDS AND RENAME 02S/20S
- 4 REMOVE TAXIWAY A SEGMENTS; RE-GRADE AREA FOR EMERGENCY GLIDER LANDING OPERATIONS
- 5 RECONSTRUCT TAXIWAY A
- 6 CONSTRUCT TAXIWAY A EXTENSION
- 7 ACQUIRE AIRPORT PROPERTY (APPROX. 1.2 ACRES)
- 8 REMOVE EXISTING TAXIWAY D & CONSTRUCT NEW TAXIWAY D
- 9 REMOVE EXISTING TAXIWAY E
- 10 CONSTRUCT NEW TAXIWAY F
- 11 RECONSTRUCT EXISTING TAXIWAY G
- 12 CONSTRUCT NEW GRAVEL/SKI APRON (94 SMALL TIE-DOWNS; 10 LARGE TIE-DOWNS; 14 TRANSIENT TIE-DOWNS)
- 13 INSTALL ELECTRICAL OUTLETS AT NEW TIE-DOWN SPACES
- 14 NEW HANGAR LEASE LOT AREA
- 15 NEW T-HANGAR LEASE LOT AREA
- 16 EXPAND NORTHEAST APRON (25 SMALL TIE-DOWNS)
- 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (8 SMALL TIE-DOWNS)
- 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES
- 19 CONSTRUCT ACCESS ROADS
- 20 REMOVE EXISTING FENCING
- 21 CONSTRUCT NEW PERIMETER FENCING
- 22 INSTALL NEW PAPI
- 23 PAVE TAXIWAY SHOULDER/APRON AREA TO LEASE LINES TO REDUCE FOD
- 24 RELOCATE WEATHER STATION
- 25 PROVIDE UNRESTRICTED ACCESS TO NEIGHBORING PROPERTY AND TRAIL SYSTEM
- 26 RE-ALIGN ACCESS ROAD OUTSIDE OF OFA/OFZ
- 27 INSTALL SUPPLEMENTAL WIND CONE



LEGEND

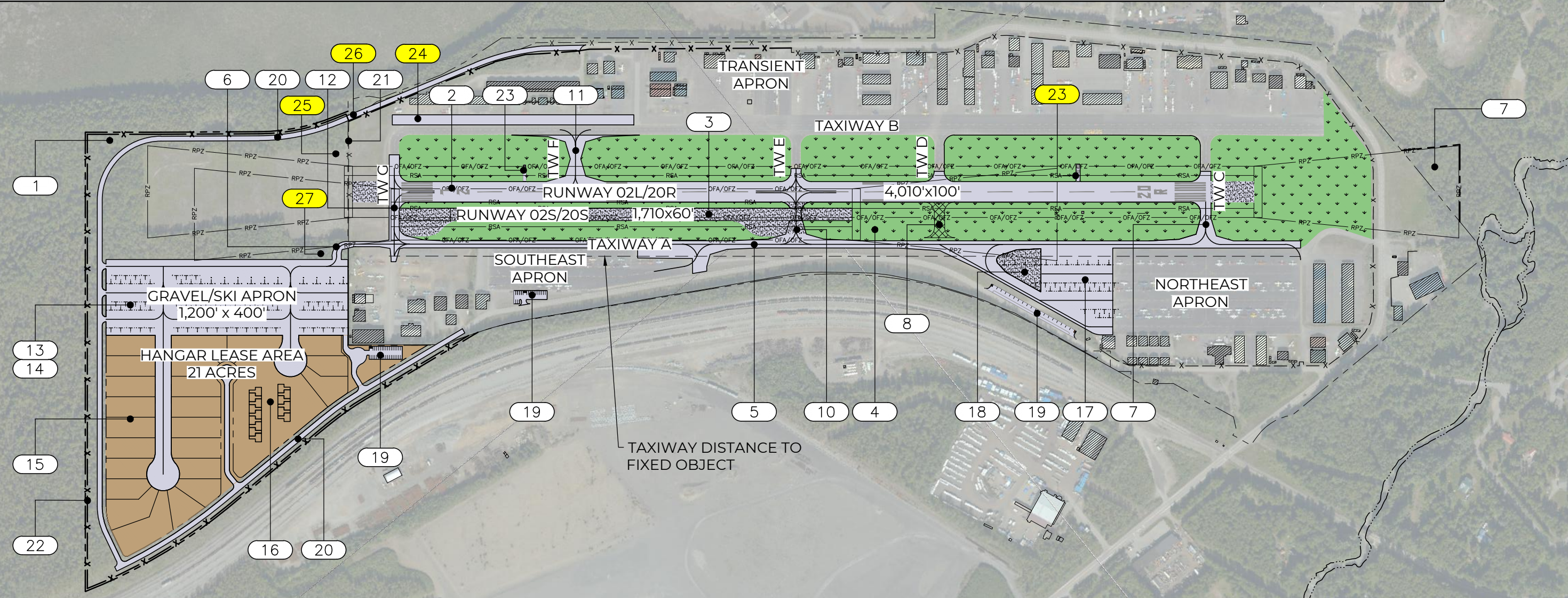
- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- NEW GRAVEL SURFACE
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE
- CHANGES COMPARED TO 11-7-2022
- X



BIRCHWOOD AIRPORT MASTER PLAN		
EXHIBIT - ALTERNATIVE 2		
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR		
BIRCHWOOD, ALASKA		
DATE: 12-14-2022	DRAWN BY: TA/TC	SHEET: 2
SCALE: 1" = 250'	CHECKED BY: MS	JOB NO.: 20-014

ALTERNATIVE 3

- | | | |
|---|---|---|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | 12 RECONSTRUCT EXISTING TAXIWAY G | 22 CONSTRUCT NEW PERIMETER FENCING |
| 2 RECONSTRUCT RUNWAY 02L/20R | 13 CONSTRUCT NEW APRON (62 SMALL TIE-DOWNS; 10 LARGE TIE-DOWNS; 14 TRANSIENT TIE-DOWNS) | 23 INSTALL NEW PAPI |
| 3 CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02S/20S WITH SKI-PLANE TURNAROUNDS | 14 INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES | 24 PAVE TAXIWAY SHOULDER/ APRON AREA TO LEASE LINES TO REDUCE FOD |
| 4 REMOVE EXISTING RUNWAY 02R/20L | 15 CONSTRUCT NEW HANGAR LEASE AREA | 25 RELOCATE WEATHER STATION |
| 5 RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION | 16 CONSTRUCT NEW T-HANGAR LEASE AREA | 26 PROVIDE UNRESTRICTED ACCESS FROM NEIGHBORING PROPERTY AND TRAIL SYSTEM |
| 6 CONSTRUCT TAXIWAY A EXTENSION | 17 EXPAND NORTHEAST APRON (29 SMALL TIE-DOWNS) | 27 INSTALL SUPPLEMENTAL WIND CONE |
| 7 ACQUIRE AIRPORT PROPERTY (APPROX. 1.2 ACRES) | 18 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 SMALL TIE-DOWNS) | |
| 8 RECONSTRUCT TAXIWAY C | 19 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES | |
| 9 REMOVE PORTION OF EXISTING TAXIWAY D | 20 CONSTRUCT ACCESS ROADS | |
| 10 RECONSTRUCT EXISTING TAXIWAY E | 21 REMOVE EXISTING FENCE | |
| 11 CONSTRUCT NEW TAXIWAY F | | |



LEGEND

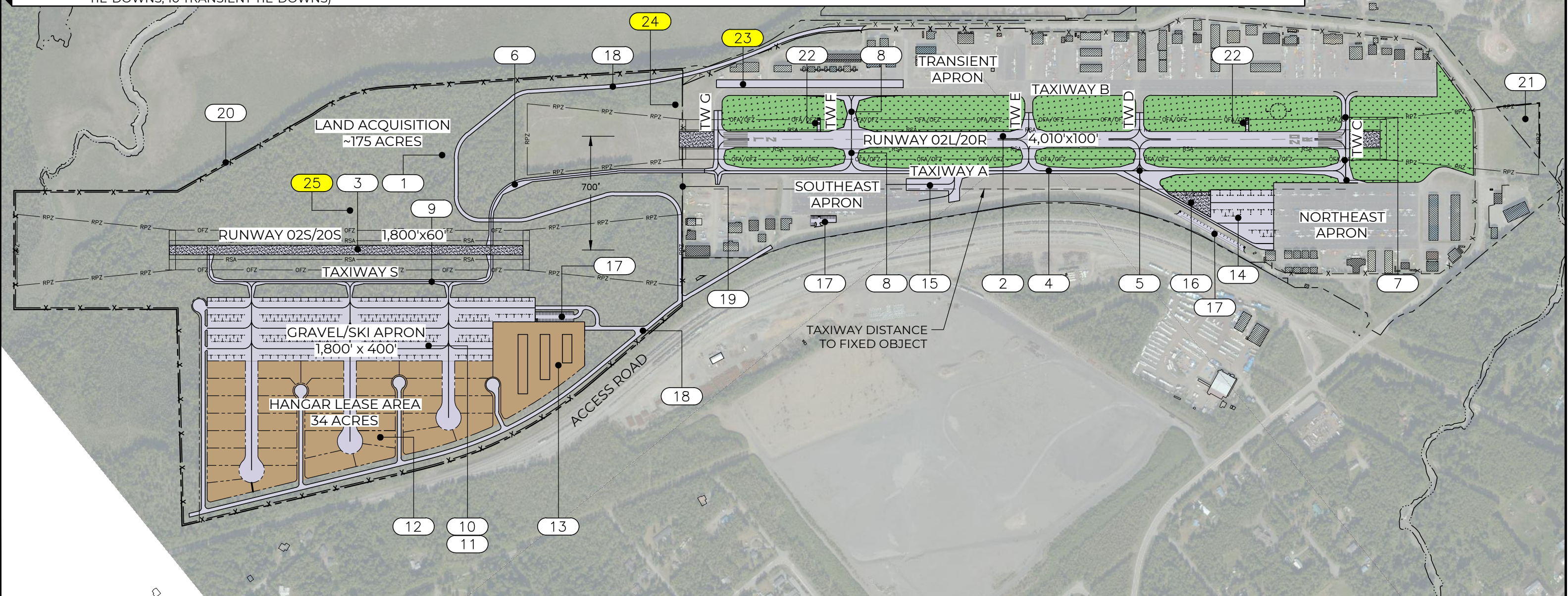
	HANGAR DEVELOPMENT AREAS		PROPOSED AIRPORT PROPERTY BOUNDARY
	NEW GRASS AREA		NEW FENCE
	NEW PAVEMENT		RUNWAY SAFETY AREA
	NEW GRAVEL SURFACE		OBJECT FREE AREA/ZONE
	PARKING & PORTABLE PUBLIC RESTROOMS		RUNWAY PROTECTION ZONE
	AIRCRAFT TIE-DOWN		CHANGES COMPARED TO 11-7-2022

**BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 3
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
BIRCHWOOD, ALASKA**

DATE: 12-12-2022	DRAWN BY: TA/TC	SHEET: 3
SCALE: 1" = 250'	CHECKED BY: MS	JOB NO.: 20-014

ALTERNATIVE 4

- | | | |
|--|--|---|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 175 ACRES) | 11 INSTALL ELECTRIC OUTLETS AT NEW TIE-DOWNS | 19 REMOVE EXISTING FENCE |
| 2 RECONSTRUCT RUNWAY 02L/20R | 12 NEW HANGAR LEASE LOT AREA | 20 CONSTRUCT NEW PERIMETER FENCING |
| 3 CONSTRUCT NEW GRAVEL/SKI RUNWAY 02S/20S | 13 NEW T-HANGAR LEASE AREA | 21 ACQUIRE AIRPORT PROPERTY (APPROX. 1.2 ACRES) |
| 4 REMOVE EXISTING RUNWAY 02R/20L | 14 EXPAND NORTHEAST APRON (11 SMALL TIE-DOWNS)
(10 LARGE TIE-DOWNS) | 22 CONSTRUCT NEW PAPI |
| 5 RECONSTRUCT TAXIWAY A | 15 EXPAND SOUTHEAST APRON | 23 PAVE TAXIWAY SHOULDER/APRON AREA TO LEASE LINES
TO REDUCE FOD |
| 6 CONSTRUCT TAXIWAY A EXTENSION | 16 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN
AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS) | 24 RELOCATE WEATHER STATION |
| 7 RECONSTRUCT TAXIWAY C | 17 DEVELOP NEW VEHICLE PARKING AREA WITH
PORTABLE PUBLIC RESTROOM FACILITIES | 25 INSTALL SUPPLEMENTAL WIND CONE |
| 8 CONSTRUCT NEW TAXIWAY F | 18 CONSTRUCT ACCESS ROADS | |
| 9 CONSTRUCT NEW TAXIWAY S | | |
| 10 CONSTRUCT NEW GRAVEL/SKI APRON (184 SMALL
TIE-DOWNS; 10 TRANSIENT TIE-DOWNS) | | |



LEGEND

- | | |
|-------------------------------------|------------------------------------|
| HANGAR DEVELOPMENT AREAS | PROPOSED AIRPORT PROPERTY BOUNDARY |
| NEW GRASS AREA | NEW FENCE |
| NEW PAVEMENT | RUNWAY SAFETY AREA |
| NEW GRAVEL SURFACE | OBJECT FREE AREA/ZONE |
| PARKING & PORTABLE PUBLIC RESTROOMS | RUNWAY PROTECTION ZONE |
| AIRCRAFT TIE-DOWN | CHANGES COMPARED TO 11-7-2022 |

BIRCHWOOD AIRPORT MASTER PLAN EXHIBIT - ALTERNATIVE 4 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR BIRCHWOOD, ALASKA		
DATE: 12-13-2022	DRAWN BY: TA/TC	SHEET: 4
SCALE: 1" = 300'	CHECKED BY: MS	JOB NO.: 20-014

Alaska Department of Transportation and Public Facilities Birchwood Airport Master Plan (AMP) Update:

Stakeholder Advisory Group (SAG) Meeting #3 – NOTES

December 14, 2022; 3:00 – 5:00 pm

Participants (see Guiding Slide 3 for full listing of SAG entities)



SAG Members

- Aircraft Owners and Pilots Association: Rob Stapleton
- Alaska Department of Transportation & Public Facilities (DOT&PF): Philana Miles (Birchwood AMP Project Manager), James Sowerwine (Right of Way Manager)
- Alaska Railroad Corporation: Brian Lindemood (absent)
- Birchwood Airport Association: Abe Harman
- Birchwood Community Council: Val Jokela
- Birchwood Recreation and Shooting Park: Jim Stoneking
- Civil Air Patrol: Wally Parks, Jeff Banks (also representing glider community)
- Eklutna, Inc.: Kyle Smith
- Native Village of Eklutna Carrie Brophil, Marc Lamoreaux
- Talon Hangar Association: Dennis Serie

Other Airport Users Present

- Alaska Mountain Soaring Association: Pete Brown

Other Invited Participants

- Federal Aviation Administration (FAA): Jonathan Lindquist and Carley Wallace (absent)

Project Consultants

- HDL Engineering Consultants: Mark Swenson (Consultant Project Manager), Heather Campfield, Erik Jordt
- Agnew::Beck Consulting: Shelly Wade (Public Involvement, Land Use and 3P Lead), Meg Friedenauer

Objectives

Share and get SAG input on:

- Stakeholder feedback on draft airport layout alternatives.
- Revised airport layout alternatives that respond to stakeholder feedback.
- Planning process, schedule, and next steps.

Project Schedule & Key Milestones (See Guiding Slides 4 – 6 for additional detail)

The revised schedule includes:

- Draft Plan Development, Release, and Review – Fall 2022 to Winter 2023 (currently happening). Includes the *Preliminary* Airport Master Plan Update, Layout and Aeronautical Survey and ongoing public outreach.
 - Finalize Land Use Assessment
 - Finalize Public-Private partnership analysis
 - Host public workshop #3
 - Host SAG meeting # 3
 - Provide ongoing updated via social media and on the project website

- Public comment period ends
- Plan Refinement and Finalization – Spring/Summer 2023. Includes the *Final* Airport Master Plan Update, Layout, and Aeronautical Survey.
 - Prepare final draft Alternatives and Recommendation Report
 - Provide ongoing updates via social media and the project website
 - Prepare draft Airport Layout Plan
 - Draft Airport Master Plan Update released for public review
 - Host SAG meeting #4 and public meeting #4
 - Public comment period
 - Ongoing updates via social media and the project website
 - Finalize Airport Master Plan Update
 - Finalize Airport Layout Plan
 - Announce the release of the final plans via social media and the project website

Progress Since October 2021:

- Second Stakeholder Advisory Group and Public Meetings (Fall 2021)
- Airport Stakeholder Survey (Spring 2022)
- Project Received Additional Funding Based on Public Involvement (Summer 2022)
- DOT Decision to Plan for Existing Runway Length & Width (Summer 2022)
- Public-Private Partnership Summary

What's Changed with the Alternatives, November to December 2022 (See Guiding Slides 7 and 8)

Each public comment received regarding the alternatives as presented at the November 12th workshop was logged and considered in the versions we are sharing today with the SAG. If a comment isn't addressed, we can discuss why that wasn't included in the revisions. The comments from the November 12th workshop are captured in the "Results Summary" and posted on the website. The entire public comment tracker will be shared with the SAG in late December 2022/early January 2023.

Key Points

- Highest level of support was for Alternative 2 with some adjustments. Checks most of the boxes/criteria that will be used to evaluate all alternatives (see below).
- Changing the 02R/20L designation was discussed at length at the open house. Each alternative proposes changing the designation to 02S/20S for the gravel runway and changing the main runway designation to 02S/20S to address issues of safety and confusion over the radio. The use of 'S' was chosen given it is what is used for the Wasilla and Palmer airports designation of 'S' for gravel runways.
- Land acquisition – the master plan will outline how land acquisition will be addressed. There is a potential meeting in January with DOT&PF, Eklutna, FAA, and the consultant team. The results from that discussion will be shared after the meeting.

Alternative 1 – See Slide 7

- No changes – maintaining the status quo. This is not a sustainable option for the State as FAA wants inline taxiways removed from the gravel runways.
- ***No Discussion.***

Alternative 2 – See Slide 7

Summary of changes

- Renamed Runway 02R/20L to Runway 02S/20S.
- Added ski-plane turnarounds at each threshold of Runway 02S/20S.
- Showed removed sections of Taxiway A as maintained grass area for emergency glider landing operations.
- Relocated Taxiway D to intersect threshold of Runway 20S.
- Showed PAPI's installed on northeast side of main Runway 02L./20R to keep emergency glider landing area clear of visual aids.
- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD (foreign object debris.)
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Ensured that access is maintained around southwest side of new airport property for adjacent landowners and trail users.
- Re-aligned the access road to the Southeast Apron to be outside of the OFA/OFZ of Runway 02S/20S.
- Installed a supplemental wind cone on east side of airport.

Discussion – Comments (from SAG/public) and Responses (from Consultant Team)

- **Comment** – emergency glider operations – the glider operators' preference was to relocate everything out of infield areas between main runways and Taxiway Bravo.
 - **Response** – the design would not maintain safe grades, but we tried to provide room on the other side and suggests airport maintenance maintain the grass as short as possible and remove all obstructions so the area in front of the gravel runway or beyond it could be used.
- **Comment** – the Southeast Apron is below grade.
 - **Response** – we can recommend that when the runway 02S/20S is redone, it will be brought up to grade be paved beyond that to create more room for emergency operations. Glider operators and others agree this option is a good solution.
- **Comment** – Can the existing road between the NW apron and SE apron be made into a taxiway or shared use?
 - **Response** – we talked to FAA about this and a shared use component like this would have to be designed to taxiway standards, but taxiway cannot fit in that area. We also talked with the AK Railroad about an option to develop the buffer between the railroad and the road and they were not receptive to that idea. We don't see an option or space for a shared use space in that area.
- **Comment** – Are there any creative ways to utilize space near NE apron to create more lease lots?
 - **Response** – we have posed that question to DOT&PF and awaiting an answer. If it's feasible, it will be included in the alternative.
- **Comment** – Is an “elephant ear” or turnaround possible to add to the main runway?
 - **Response** – there may be an area/space beyond Taxiway Charlie to the north – there is space there to do “run ups.” The area of concern from operators is on the Taxiway Gulf side with a turnout near Gulf and Bravo or make Gulf wider to alleviate congestion. We will work something up to try to address that issue.

- **Comment** – Runway renaming “S” seems confusing and users likely won’t use it but will call it “gravel.”
 - **Response** – about five people at the public meeting were interested in seeing that runway renamed from 02L and 02R. We will ask the FAA about using “G” instead of “S”, infers “glider” or “gravel.”
- **Comment** – Some of the alternatives includes expansion that could affect cultural resources on nearby property. Local Tribes are being consulted and are part of the SAG.
 - **Related Comment** – Native Village of Eklutna is OK with the Alternative 2 which maintains the wildlife corridor but would need more information about some of the cultural resources in nearby woods if more expansion was discussed.
- **Comment from Consulting Team** – Regarding item #7 (acquire airport property – 12 acres), that sliver of land is an aeronautical easement. We show it on the alternatives as acquiring the parcel because it’s assumed the ultimate plan or goal would be to have fee simple rights to the property. Does that work for DOT? (DOT had no comment.)
 - **Response from SAG Member** – Shooting Park is fine with it remaining an easement and mowed down to grass but routing a different way would require the shooting range to reroute the archery walkway.
 - **Response from Consulting Team** – We will plan on continue to show that as an aeronautical easement if agreeable to DOT. If DOT has conflict, consulting team will discuss with Shooting Park.
- **Comment** – Alternative 2 would require more plowing and where will the additional snow be stored?
 - **Response** – Each alternative has a discussion of snow storage areas.
- **Comment** – Regarding relocation of the weather station – has there been a survey in moving from the center of the airport to an end? The winds can change from one end of the airport to the other. Other users commented that pilots usually use the windsocks to gauge wind on approach and moving the weather station would not negatively impact use. Other users commented that it makes sense to move the weather station from the congested area. One of the advantages of moving it would be to allow for more tie-down space.
 - **Response** – We moved the weather station to remove it from a congested area and because there isn’t the required clearance around it right now. There has not been a weather survey done. The advantage of moving is that more space would open for potential tie-downs.
- **Comment** – Will the need for larger glider tiedowns be included?
 - **Response** – Yes, larger aircraft or glider tie-downs will be included. They are shown currently on the plan in the new apron on the southside, but a better spot would be on the expansion on the northeast apron; awaiting more discussion with FAA on this point. Consultants are hoping to include 10 spaces for larger aircraft, ideally pull-through spaces facing the mountains in the new apron area to accommodate more ski-type aircraft.
- Alternative 2 is likely going to be the recommended alternative by the contracting team; FAA and DOT&PF will consider that recommendation but make final decision.

Alternative 3 – Slide 8

- Renamed Runway 02S/20L to Runway 02S/20S.
- Added ski-plane turnarounds at each threshold of Runway 02S/20S.
- Showed PAPI’s installed on northeast side of main Runway 02L/20R to keep emergency glider landing area north of gravel runway clear of visual aids.

- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD.
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Ensured that access is maintained around southwest side of new airport property for adjacent landowners and trail users.
- Installed a supplemental wind cone on southeast side of airport.

Discussion – Comments (from SAG/public) and Responses (from Consultant Team)

- No discussion. This alternative did not receive support.

Alternative 4 – Slide 8

- Renamed Runway 02R/20L to Runway 02S/20S.
- Showed PAPI's installed on northeast side of main Runway 02L/20R to keep emergency glider landing area on east side of 02R/20L.
- Showed section of apron between southwest section of Taxiway B and lease lots as paved to reduce FOD.
- Relocated weather station from the Transient Apron to newly acquired land south of the airport.
- Installed a supplemental wind cone on southeast side of airport.
- This alternative has the most impact to land, cultural resources, wildlife, and several other challenges.

Discussion – Comments (from SAG/public) and Responses (from Consultant Team)

- In most public input and subsequent discussions – general agreement this alternative is not feasible and is not supported.

Next Steps

- The contracting team will work with DOT&PF to prepare the full draft plan, including continued evaluation of layout alternatives, incorporation of public and SAG comments, and ultimately, recommend or identify a preferred alternative. Evaluation criteria for the alternatives analysis:
 - Safety
 - Environmental Impacts
 - Airspace and Obstructions
 - Land Use
 - Meeting Demand for Additional Lease Lots
 - Revenue Generation
 - Maintenance Cost
 - Capital Cost
- The full draft master plan is slated for SAG and public review Spring 2023.

Heather A. Campfield

From: Shelly Wade <shelly@agnewbeck.com>
Sent: Thursday, December 29, 2022 7:16 AM
To: Shelly Wade
Cc: Miles, Philana C (DOT)
Subject: Follow-Up from 12/14/22 BCV Airport Master Plan Update: SAG Meeting #3
Attachments: 12-14-22_Birchwood AMP_SAG Mtg #3_Agenda.pdf; 12-14-22_BCV_SAGMtg#3_GuidingSlides.pdf; 12-14-22_BCVAirportLayoutAlternatives_forSAGReview.pdf; 12-14-22_BCV AMP_SAGMtg#3_Notes.pdf

Good morning, Birchwood Airport Master Plan SAG Members –

We hope this message finds you and your healthy, safe, and enjoying some holiday/down time with family and friends.

I am writing today to thank you for our productive December 14th meeting and to share the following:

- LINKED BELOW – 12/14/22 SAG Meeting Recording:
 - https://agnewbeck.zoom.us/rec/share/aWcTRVyPeAgX3ZnVpbrkjKv_7mupiQwXzQqbBwrMVgNJfDZ71dC-vGGPgljQff4.phQkVpouuwzlhxC
 - Passcode: %sj*0nCD
- ATTACHED – 12/14/22 SAG Meeting Agenda (previously shared), Guiding Slides (previously shared), Layout Alternatives (previously shared), and Notes (**NEW!**)

We are also updating the project website to include the 12/14/22 SAG materials and to share our next steps. As shared at our December meeting, the project team is continuing to evaluate the alternatives and preparing other components of the Draft Master Plan Update, slated for release in Spring 2023. We are also continuing to interview key stakeholders, including individuals that can provide input on the land acquisition section of the draft master plan.

We will look forward to reconnecting with you in the next few months (we have one more SAG meeting on the books!), but please call, text, or email anytime if you have any comments, questions, or concerns about the master planning process.

Finally, another huge thanks from our team to all of you for your dedication and commitment to the SAG and for your patience with the process. We look forward to working with you all in the new year.

Happy and Safe New Year!

Shelly

Shelly Wade, AICP

907.242.5326 Cell (call or text) | shelly@agnewbeck.com

Dena'inaq eñen'aq' gheshtnu ch'q'u yeshdu. (Dena'ina) *I live and work on the land of the Dena'ina. (English)*

Translation by J. Isaak and S. Shaginoff-Stuart

AGNEWBECK
Celebrating 20 years!

From: Shelly Wade
Sent: Wednesday, December 14, 2022 10:31 AM
To: Shelly Wade <shelly@agnewbeck.com>
Cc: Miles, Philana C (DOT) <philana.miles@alaska.gov>
Subject: Materials for 12/14 Birchwood Airport Master Plan Update: Stakeholder Advisory Group (SAG) Meeting #3 -

VIRTUAL

Importance: High

Good morning, everyone –

We hope this message finds you safe and warm. Attached, please find materials for today's (Wed, 12/14) Birchwood SAG meeting. Virtual connect info is below and on the agenda.

See you online at 3:00 today!

Best,
Shelly

Shelly Wade, AICP

907.242.5326 Cell (call or text) | shelly@agnewbeck.com

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Translation by J. Isaak and S. Shaginoff-Stuart



From: Shelly Wade

Subject: Birchwood Airport Master Plan Update: Stakeholder Advisory Group (SAG) Meeting #3 - VIRTUAL

When: Wednesday, December 14, 2022 3:00 PM-5:00 PM (UTC-09:00) Alaska.

Where: <https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>

Importance: High

Join Zoom Meeting

<https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>

Meeting ID: 857 9493 1121

Passcode: 124920

One tap mobile

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+13462487799,,85794931121#,,,,*124920# US (Houston)

Dial by your location

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+1 346 248 7799 US (Houston)

+1 669 444 9171 US

+1 669 900 9128 US (San Jose)

+1 719 359 4580 US

+1 253 205 0468 US

+1 309 205 3325 US

+1 312 626 6799 US (Chicago)

+1 360 209 5623 US

+1 386 347 5053 US

+1 507 473 4847 US

+1 564 217 2000 US

+1 646 558 8656 US (New York)

+1 646 931 3860 US

+1 689 278 1000 US

+1 301 715 8592 US (Washington DC)

+1 305 224 1968 US

888 475 4499 US Toll-free

833 548 0276 US Toll-free

833 548 0282 US Toll-free

877 853 5257 US Toll-free

Meeting ID: 857 9493 1121

Passcode: 124920

Join by Skype for Business

<https://agnewbeck.zoom.us/skype/85794931121>

From: [Shelly Wade](#)
To: [Shelly Wade](#)
Cc: [Miles, Philana C \(DOT\)](#)
Subject: Follow-Up from 12/14/22 BCV Airport Master Plan Update: SAG Meeting #3
Date: Thursday, December 29, 2022 7:16:06 AM
Attachments: [image001.png](#)
[12-14-22 Birchwood AMP SAG Mtg #3 Agenda.pdf](#)
[12-14-22 BCV SAGMtg#3 GuidingSlides.pdf](#)
[12-14-22 BCVAirportLayoutAlternatives_forSAGReview.pdf](#)
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Cc: Miles, Philana C (DOT) <philana.miles@alaska.gov>
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Importance: High

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Where: <https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>
Importance: High

Join Zoom Meeting

<https://agnewbeck.zoom.us/j/85794931121?pwd=YzN1UmhqdmxReldQZlJQYUh1a2FDdz09>

Meeting ID: 857 9493 1121

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+1 564 217 2000 US
+1 646 558 8656 US (New York)
+1 646 931 3860 US
+1 689 278 1000 US
+1 301 715 8592 US (Washington DC)
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888 475 4499 US Toll-free
833 548 0276 US Toll-free
833 548 0282 US Toll-free
877 853 5257 US Toll-free

Meeting ID: 857 9493 1121

Passcode: 124920

Join by Skype for Business

<https://agnewbeck.zoom.us/skype/85794931121>



Photo by Anna Bartholomew, DOT&PF

Join us for a public meeting to discuss the future of the Birchwood Airport!

Same meeting, two opportunities to join.

Select the time that works best for you.

Thursday
March 4,
2021

5:00 – 6:30 pm

6:45 – 8:15 pm

For video and audio:

- Connect using this link:
<https://agnewbeck.zoom.us/j/89957894404?pwd=ak9MKzd6b0lVelhjenlyQUlZeVZWdz09>
- Passcode: 2222

For audio only:

- Dial: 253-215-8782
- Meeting ID: 899 5789 4404 #
- Passcode: 2222 #

Persons with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD), 907- 269-0473. We are also able to offer, upon request, Alaska Native Language Translation.

About the Birchwood Airport Master Plan (AMP) Update

The Alaska Department of Transportation and Public Facilities (DOT&PF) is updating the Birchwood Airport Master Plan. The updated Airport Master Plan will outline **how the airport can best serve the future interests and needs of the flying public, aviation community, DOT&PF, and other stakeholders.**



About the March 4th Meeting

Join us for a virtual public meeting to learn about the Airport Master Plan Update and **talk with project staff about the airport's future needs.** We will share what we've learned so far, respond to your questions and get feedback on what you see as potential changes/needs for the airport and surrounding area.

We're listening! Email questions to Shelly in advance to have your question answered in our public meeting Q+A

Questions about the project?

Contact the DOT&PF Project Manager
Jessica Wuttke-Campoamor
Phone: 907-269-0519
Email: jessica.wuttke-campoamor@alaska.gov

Questions on how to connect to the meeting?

Contact the Project Public Involvement Lead
Shelly Wade
Phone: 907-242-5326
Email: shelly@agnewbeck.com

Visit the project webpage to learn more: <http://dot.alaska.gov/creg/birchwoodamp/>

ANCHORAGE DAILY NEWS

AFFIDAVIT OF PUBLICATION

Account #: 102401
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Cost: \$244.06

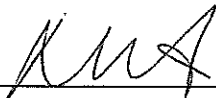
STATE OF ALASKA
THIRD JUDICIAL DISTRICT

Lisi Misa being first duly sworn on oath deposes and says that she is a representative of the Anchorage Daily News, a daily newspaper. That said newspaper has been approved by the Third Judicial Court, Anchorage, Alaska, and it now and has been published in the English language continually as a daily newspaper in Anchorage, Alaska, and it is now and during all said time was printed in an office maintained at the aforesaid place of publication of said newspaper. That the annexed is a copy of an advertisement as it was published in regular issues (and not in supplemental form) of said newspaper on

02/21/2021

and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is not in excess of the rate charged private individuals.

Signed



Subscribed and sworn to before me
this 7th day of April 2021.

Notary Public in and for
The State of Alaska.
Third Division
Anchorage, Alaska

MY COMMISSION EXPIRES



Notice of Public Meeting Alaska Department of Transportation & Public Facilities

Birchwood Airport Master Plan Update Project No. CFAPT00354/AIP 3-02-0034-008-2018

The Alaska Department of Transportation and Public Facilities (DOT&PF), with funding support from the Federal Aviation Administration (FAA), is updating the Birchwood Airport Master Plan. The updated Airport Master Plan will outline how the airport can best serve the future interests and needs of the flying public, aviation community, DOT&PF, and other stakeholders.

Join us for a virtual public meeting to learn about the airport master plan update and talk with project staff about the airport's future needs. We hope to learn how you use the airport and surrounding area, what you like most about the airport, and what you see as potential changes/needs for the airport and surrounding area.

Thursday, March 4, 2021
Same meeting, two opportunities to join:

5:00 p.m. – 6:30 p.m.

6:45 - 8:15 p.m.

**For video and audio:
Connect using this link:**

<https://agnewbeck.zoom.us/j/89957894404?pwd=ak9MKzd6b0lVelhJenlyQU1ZeVZWdz09>

Passcode: 2222

For audio only:

Dial: 253-215-8782

Meeting ID: 899 5789 4404 #

Passcode: 2222 #

For any questions on how to connect to the meeting, please email Shelly Wade, AICP, at shelly@agnewbeck.com. Have questions or comments about the project? Please contact the DOT&PF Project Manager, Jessica Wuttke-Campoamor at (907) 269-0519 or [Jessica.wuttke-campoamor@alaska.gov](mailto:jessica.wuttke-campoamor@alaska.gov).

Persons with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD), number 269-0473. We are also able to offer, upon request, Alaska Native Language Translation.

Pub: February 21, 2021

NOTARY PUBLIC
JADA L. NOWLING
STATE OF ALASKA
MY COMMISSION EXPIRES July 14, 2024

Proposed Reader Board Text for Birchwood Airport Master Plan Update, 2-24-21

Guidelines (from Jessica)

- It looks like 10 or 12 characters per line
- 3 lines per screen
- Up to 3 or maybe more screens per sequence
- Time of each display is adjustable

Proposed dates and times: 8 am – 6 pm starting this weekend (Saturday, January 27th)

If 10 characters:

B	I	R	C	H	W	O	O	D	
A	I	R	P	O	R	T			
P	L	A	N						

P	U	B	L	I	C				
M	E	E	T	I	N	G	#	I	
M	A	R	C	H		4	T	H	

D	E	T	A	I	L	S	@		
D	O	T	.	A	L	A	S	K	A
.	G	O	V						

If 12 characters:

B	I	R	C	H	W	O	O	D			
A	I	R	P	O	R	T					
M	A	S	T	E	R		P	L	A	N	

F	I	R	S	T		P	U	B	L	I	C
M	E	E	T	I	N	G					
V	I	R	T	U	A	L	L	Y		O	N

M	A	R	C	H		4					
V	I	S	I	T		D	O	T	.		
A	L	A	S	K	A	.	G	O	V		

**Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan Update
 Virtual Public Meeting #1 – March 4th, 2021**



Two Opportunities to Participate!

- **5:00 pm to 6:30 pm**
- or**
- **6:45 pm to 8:15 pm**

To join by video and audio, connect using this link:

- <https://agnewbeck.zoom.us/j/89957894404?pwd=ak9MKzd6b0lVelhJenlyQU1ZeVZWdz09>
- Passcode: 2222

To join by audio only:

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- Meeting ID: 899 5789 4404 #
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Objectives

- Introduce the project and purpose.
- Share what we have learned so far.
- Collect input from the public.

Agenda

Item	Timing
Welcome & Introductions <ul style="list-style-type: none"> • Land Acknowledgement • About the Project Team • Birchwood AMP Purpose & Schedule • Interactive Polling Activities • Meeting Purpose 	15 minutes
What have we learned so far? <ul style="list-style-type: none"> • Interview Highlights • Areas for Improvement • Results from Initial Forecasts 	40 minutes
How will the Airport Master Plan address the financial sustainability of the airport? <ul style="list-style-type: none"> • Introduction of Public/Private Partnership Concept • Future Research and Analysis of 3rd Party Management Options 	10 minutes
Responses to Your Frequently Asked Questions	15 minutes
Next Steps and Wrap Up <ul style="list-style-type: none"> • Reminder of project timeline • Link to project webpage • How to submit further questions and comments 	10 minutes

Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan Update
 Virtual Public Meeting #1 – March 4th, 2021



Two Times:

- 5:00 pm to 6:30 pm Meeting
- 6:45 pm to 8:15 pm Meeting

Public Meeting #1: Attendee List & Poll Results

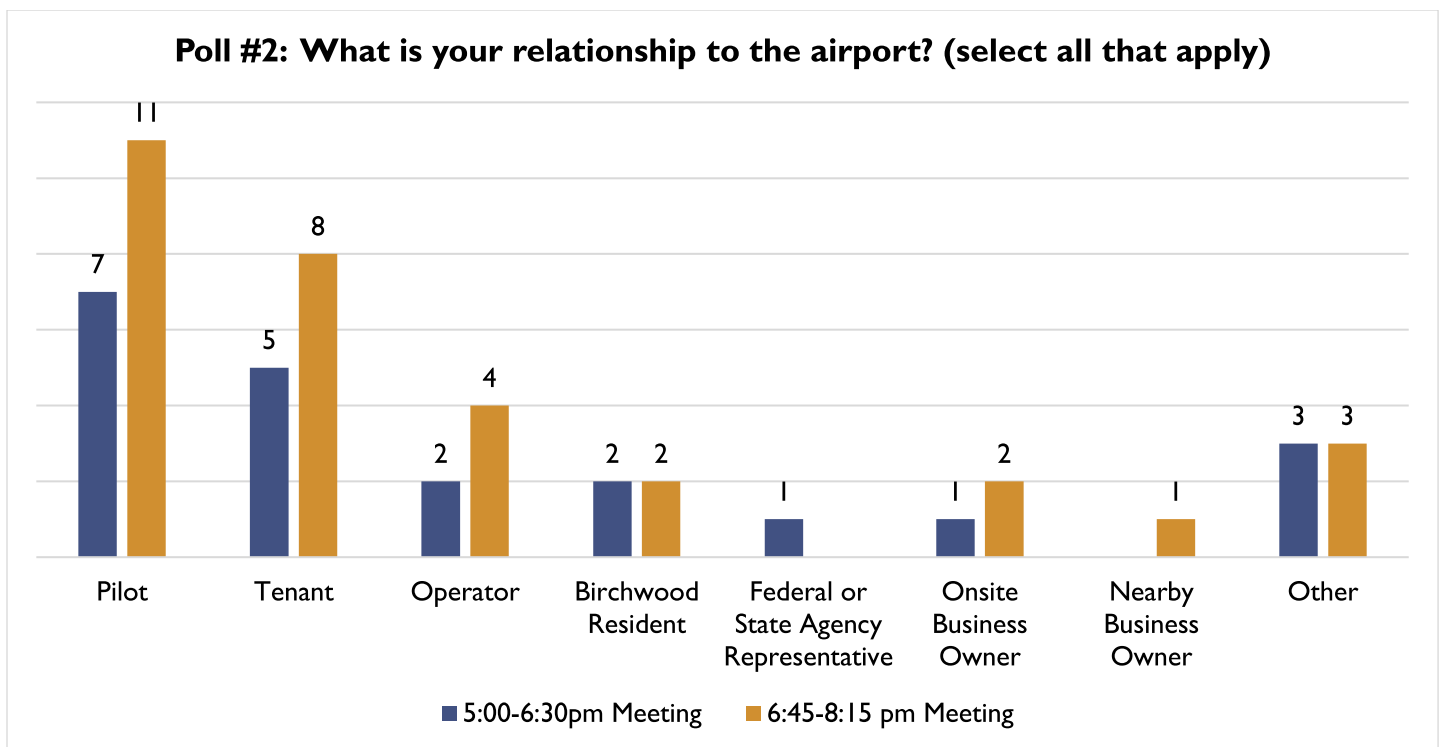
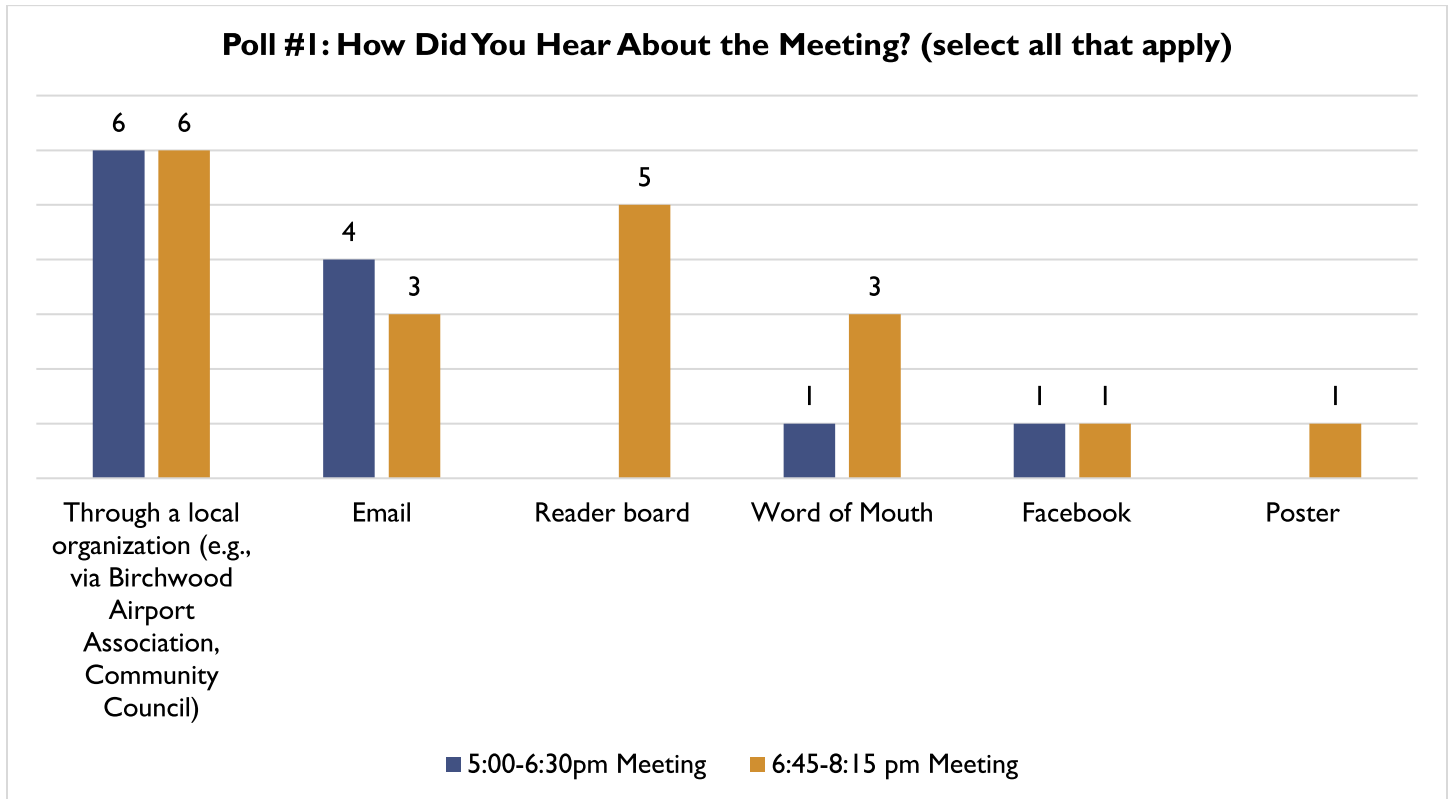
Attendance Summary

	5:30 – 6:30 pm Meeting	6:45 – 8:15 pm Meeting
	Phone attendee x 2 Abe Harman Dan Kendall David Baldwin Jane Dale Jay Laub Mike (no last name provided) Rep. Ken McCarty Robert Kelly Robert Stapleton Robin Dern Steve Constantine Steve Pogany Tiffany Lund Tom George Val Jokela	Phone attendee x 4 Abe Harman Catherine Shuman Dan Kendall Della Swartz Jane Dale Jay Laub John Abrams Lambert De Gavere Lars Gleitsmann Marty Armentrout Mark DeVries Nicholas Oppegard Rich Young Robert Kelly Robert Stapleton Tom (no last name provided) Tom George Tom Prunty
Total number of attendees <i>(excludes panelists)</i>	17	22
Total unique attendees <i>(only counts attendees once even if they attended both sessions)</i>	32	

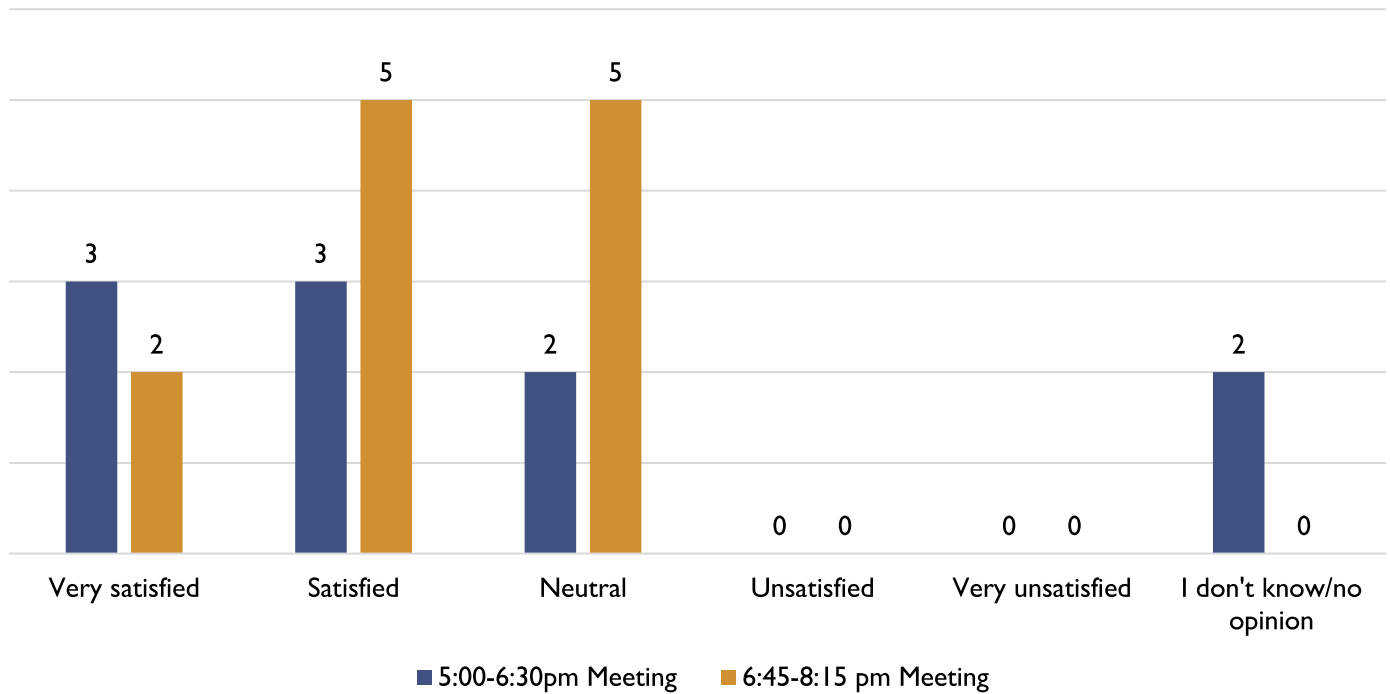
Poll Summary

Notes About the Poll Results

- Poll questions were optional; not all attendees responded to each poll.
- Attendees who called into the meeting via audio-only were not able to participate in the polls.
- Poll questions #1 and #2 were multiple choice; attendees could select more than one answer.
- Some attendees participated in both meetings, so there is some overlap in the results.



Poll #3: What is your overall level of satisfaction with the Birchwood Airport?



Poll #4: Looking ahead, 20 years from now, what does your ideal Birchwood Airport look like?

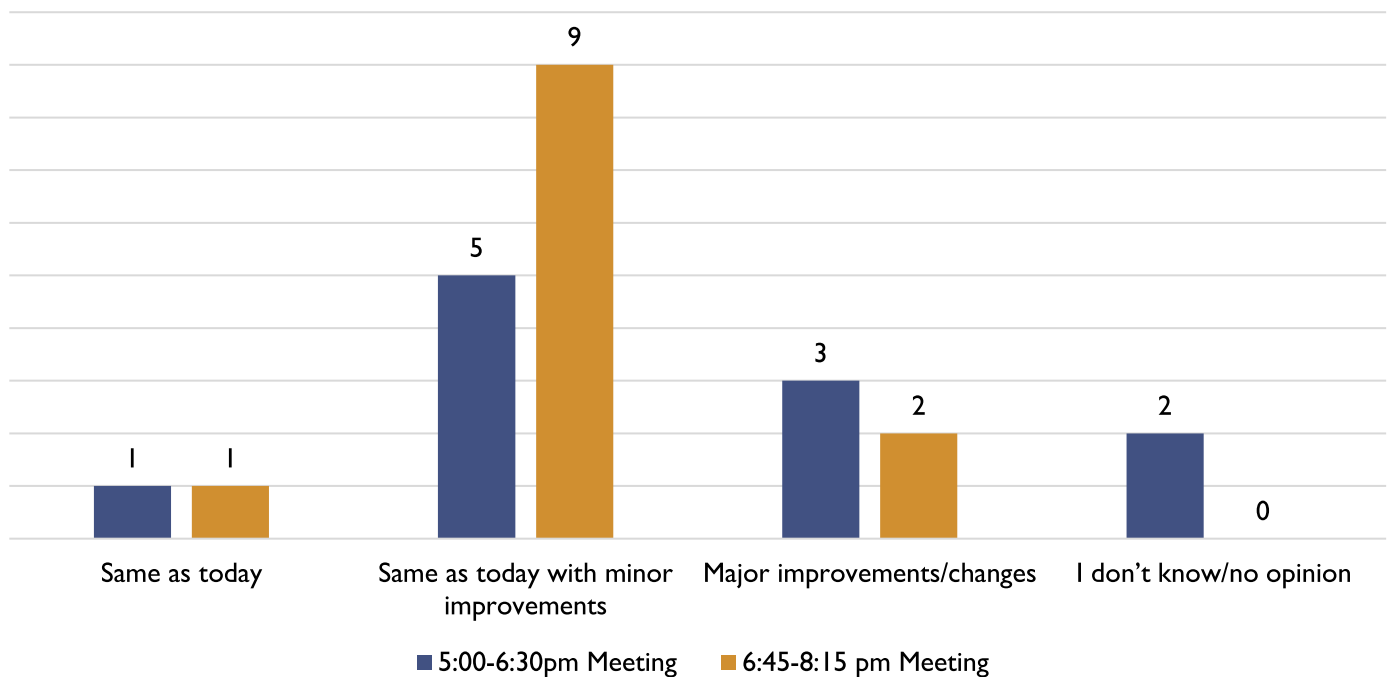


Photo by Anna Bartholomew, DOT&PF

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Public Meeting #1

Prepared for Alaska Department of Transportation & Public Facilities

Presented and facilitated by HDL Engineering Consultants & Agnew::Beck Consulting

March 4, 2021

Same meeting, two opportunities to join: 5:00-6:30 pm or 6:45-8:15 pm



15 minutes

Welcome & Introductions

Land Acknowledgement

*Dena'inaq ełnen'aaq'
gheshtnu ch'q'u yeshdu.* (Dena'ina)

Translation by J. Isaak and S. Shaginoff-Stuart

*I live and work on the
land of the Dena'ina.* (English)

A Land Acknowledgement is a formal statement that recognizes and respects Indigenous Peoples as traditional stewards of this land and the enduring relationship that exists between Indigenous Peoples and their traditional territories.

<http://convention.myacpa.org/nashville2020/inclusion/land-acknowledgement/>

For more information:

<https://nativegov.org/a-guide-to-indigenous-land-acknowledgment/>

About Our Team

The Alaska Department of Transportation and Public Facilities is leading the process with assistance from a consulting team:



About Our Presenters



Jessica Wuttke-Campoamor

DOT&PF Project Manager

jessica.wuttke-campoamor@alaska.gov

Shawn Gardner

DOT&PF Anchorage Area Planner

shawn.gardner@alaska.gov



Mark Swenson, P.E.

Civil/Environmental Engineer

mswenson@hdlalaska.com



Shelly Wade, AICP

Public Involvement Lead

shelly@agnewbeck.com

How to Provide Input During the Meeting

The **meeting** will be **recorded and posted** to the project website.

Use the **“Q+A”** function to submit comments or questions at any time throughout the meeting.

Our team will review and respond to your input during and following the meeting.

We will have **four interactive polls** throughout the meeting. Results will be posted on the project website.

During the meeting, the project team may **post helpful links or other information** that everyone can access.

All attendees will remain muted with videos off.

Project Purpose

To determine how the airport can best serve the future interests and needs of the flying public, aviation community, Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders.



Stakeholder Advisory Group

A Stakeholder Advisory Group is providing feedback on the planning process:

NOTE: This is not a voting or decision-making body.

DOT&PF

Alaska Railroad

Birchwood
Airport
Association

Birchwood Civil
Air Patrol

Birchwood
Community
Council

Birchwood
Recreation and
Shooting Park

Eklutna, Inc.

Native Village of
Eklutna

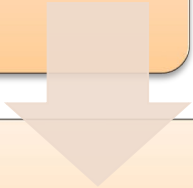
Talon Hangar
Condominium
Association, Inc.

SAG Roles and Responsibilities

Provide feedback on the planning process



Help engage their networks and community connections in the process



Provide input on plan findings and recommendations

Poll #1 – How did you hear about this meeting? (select all that apply)

- Email
- Facebook
- Newspaper public notice
- Project website
- Poster at airport
- Reader board at airport
- Through a local organization (e.g., via Birchwood Airport Association, Community Council)
- Word of mouth
- Other

Poll #2 – What is your relationship to the airport? (select all that apply)

- Pilot
- Operator
- Tenant
- Onsite business owner
- Nearby business owner
- Birchwood resident
- Adjacent landowner
- Federal or state agency representative
- Other

Poll #3 – What is your overall level of satisfaction with the Birchwood Airport?

- Very satisfied
- Satisfied
- Neutral
- Unsatisfied
- Very unsatisfied
- I don't know/no opinion

Project Area Overview



Project Schedule

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings:

- **winter 2021**
- **summer 2021**
- **fall 2021**

Meeting Purpose



- Review the project and purpose.
- Share what we've learned so far.
- Answer frequently asked questions.
- Get your input on changes and needs for the airport and surrounding area.

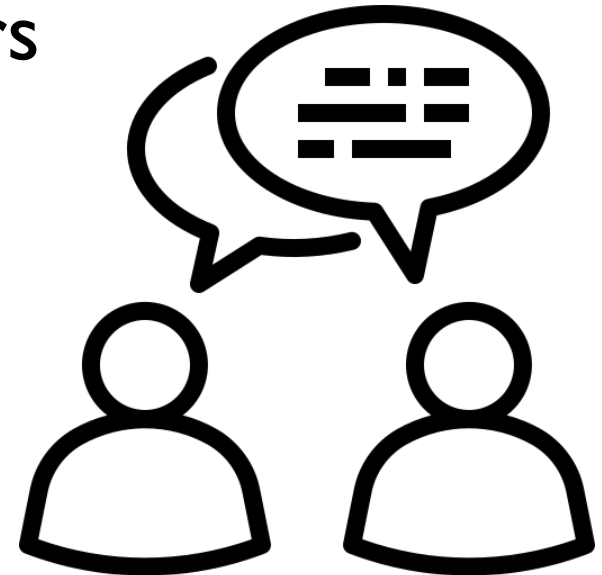
40 minutes

What have we learned so far?

Interview Highlights: What we Heard

Conducted **36 interviews** with:

- Pilots and other airport users
- Hangar owners
- Nearby business owners
- Business trade groups
- Flight associations
- Adjacent landowners



Interviews: Vision for the Airport

Stakeholders generally like the way the airport is today.

- Most stakeholders believe the **conditions will not change much** in the next 20 years to warrant significant changes to the airport.
- **Stakeholders**, especially pilots, **desire minimal change** to the existing airport.
- The **biggest concerns** are the airport moving to controlled airspace and any **changes that would negatively impact the current culture and familiarity of the existing airport.**

Poll #4 – Looking ahead, 20 years from now, what does your ideal Birchwood Airport look like?

- Same as today
- Same as today with minor improvements
- Major improvements/changes
- I don't know/no opinion



Interviews: What Stakeholders Value

Stakeholders want to preserve most aspects of the airport.

- Stakeholders have a **strong connection** to the airport.
- Airport users most appreciate the **easy access** to the airport and **uncontrolled airspace**.
- Users enjoy the **community feel**, and **accessibility to new, younger pilots**.
- Users appreciate the **low fees** and fear raising fees could price pilots out.

Interviews: What Stakeholders Value

*“We are **extremely lucky to have a public use airport in our community**, with a good runway. The **airport adds a lot to the community**, and many of the flight schools in Anchorage use Birchwood for training.”*

*“I live close by – easy choice for me. There are a couple mechanics there that I like working with. It’s a **non-towered airport with very few snow days that close me out**. (They) do a good job of keeping surfaces clear.”*

*“I like that it is **uncontrolled** and there are **enough services on the field that I can get my needs taken care of**.”*

Interviews: Areas of Improvement

Little to No On-Site Management

- When there is an operations/management issue, there is no **DOT&PF presence onsite**. It is unclear who the manager is and how to reach them.

Locked Gate

- The idea of **adding a locked gate has mixed support**. Some believe there needs to be more security to stop fuel theft, others think it would be an annoyance.

Keeping up with Growth

- Many pilots asked for more **tie-downs, electric outlets near the tie-downs and hangar space**.
- Some pilots want **more designated parking** while others said they can park at their tie-down.
- Pilots asked for a **new taxiway** between E and G.

*Also mentioned, but not within DOT&PF purview – **improve restroom facility***

Interviews: Areas of Improvement



“We have talked about the need to put in another taxiway between runway and taxiway halfway between E and G. There is a lot more traffic at the south end now that it is more built out. That would help not only us but all tenants to the south.”

Areas for Improvement

Airspace & Approaches

- Approach airspace is limited by JBER
Special Use
Restricted Area
- RW 02L/20R
published instrument
approach desired

JBER = Joint Base Elmendorf Richardson
RW = Runway

Areas for Improvement

Runways, RSAs, & RPZs

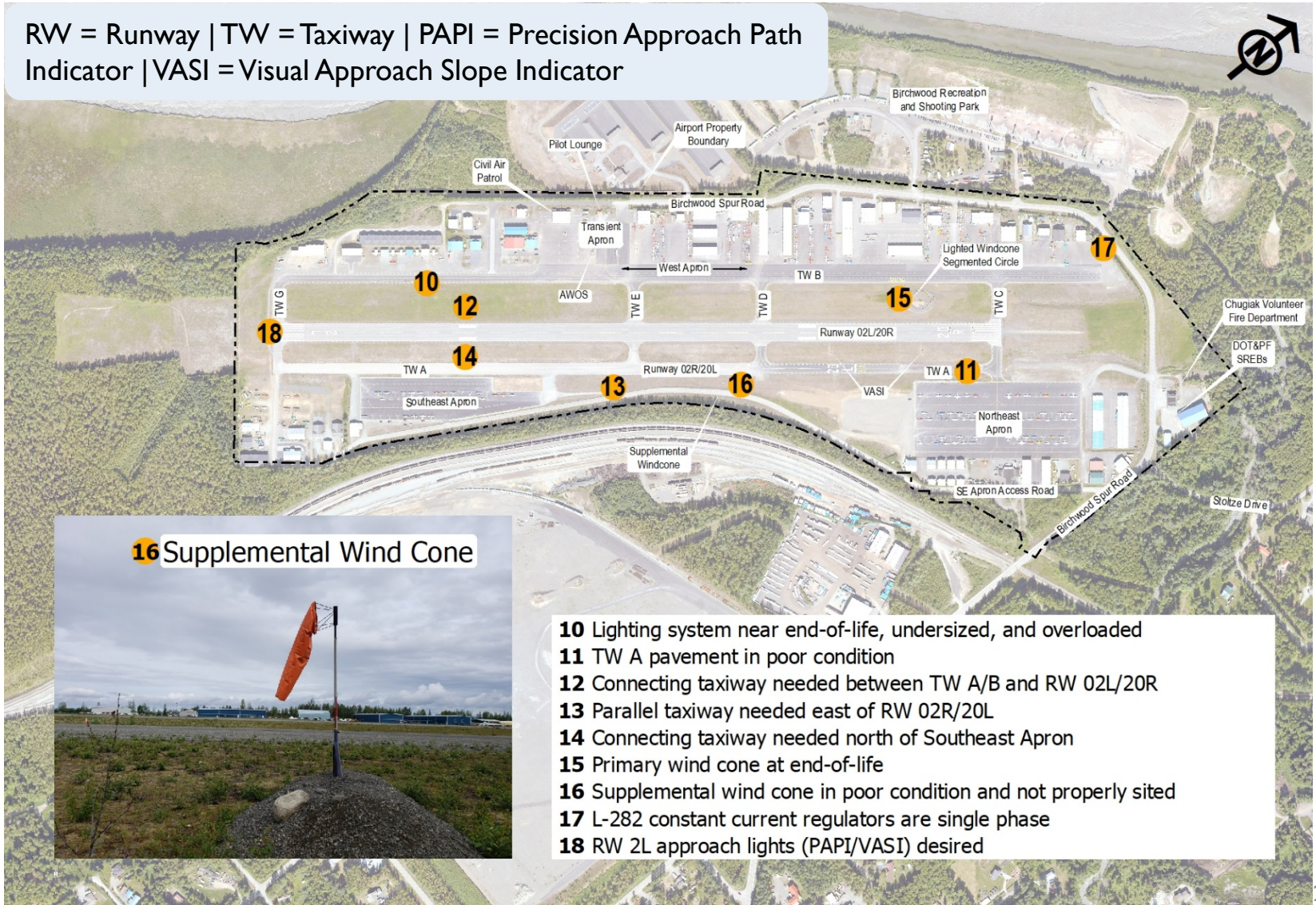
RSA = Runway Safety Area | RW = Runway
 TW = Taxiway | FAA = Federal Aviation Administration



- 1 Pavement markings worn and faded
- 2 Perimeter fence located within RW 02L RSA
- 3 RW 02L/20R lights near end-of-life, undersized, and overloaded
- 4 Gravel runway in fair condition
- 5 TW A in-line with runway
- 6 Runway location and width do not meet FAA standard
- 7 RW 02L RSA length does not meet FAA standard
- 8 Part of RW 02L/20R RSA located outside airport property

Areas for Improvement Taxiways & Visual Aids

RW = Runway | TW = Taxiway | PAPI = Precision Approach Path Indicator | VASI = Visual Approach Slope Indicator



16 Supplemental Wind Cone

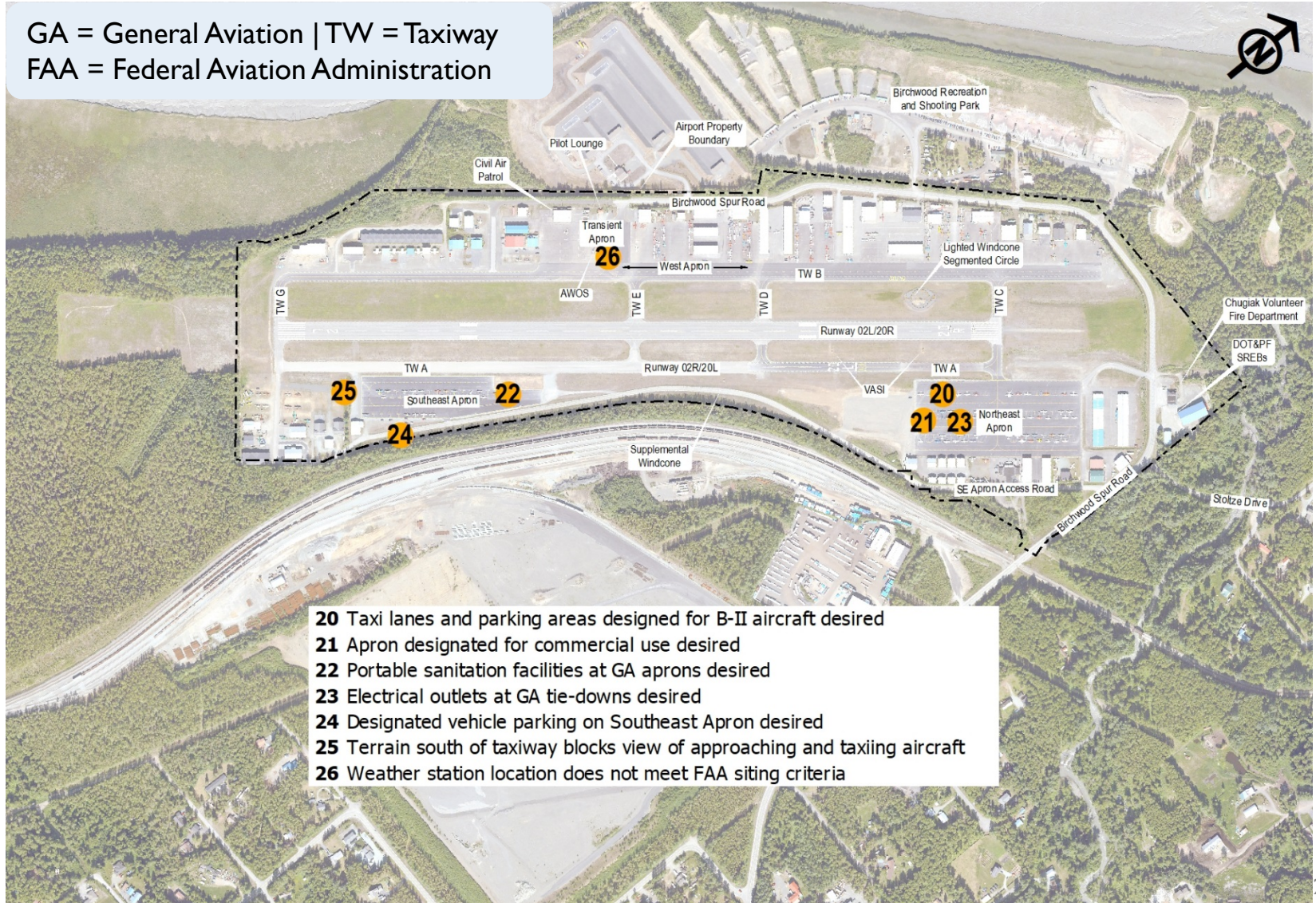


- 10** Lighting system near end-of-life, undersized, and overloaded
- 11** TW A pavement in poor condition
- 12** Connecting taxiway needed between TW A/B and RW 02L/20R
- 13** Parallel taxiway needed east of RW 02R/20L
- 14** Connecting taxiway needed north of Southeast Apron
- 15** Primary wind cone at end-of-life
- 16** Supplemental wind cone in poor condition and not properly sited
- 17** L-282 constant current regulators are single phase
- 18** RW 2L approach lights (PAPI/VASI) desired

Areas for Improvement

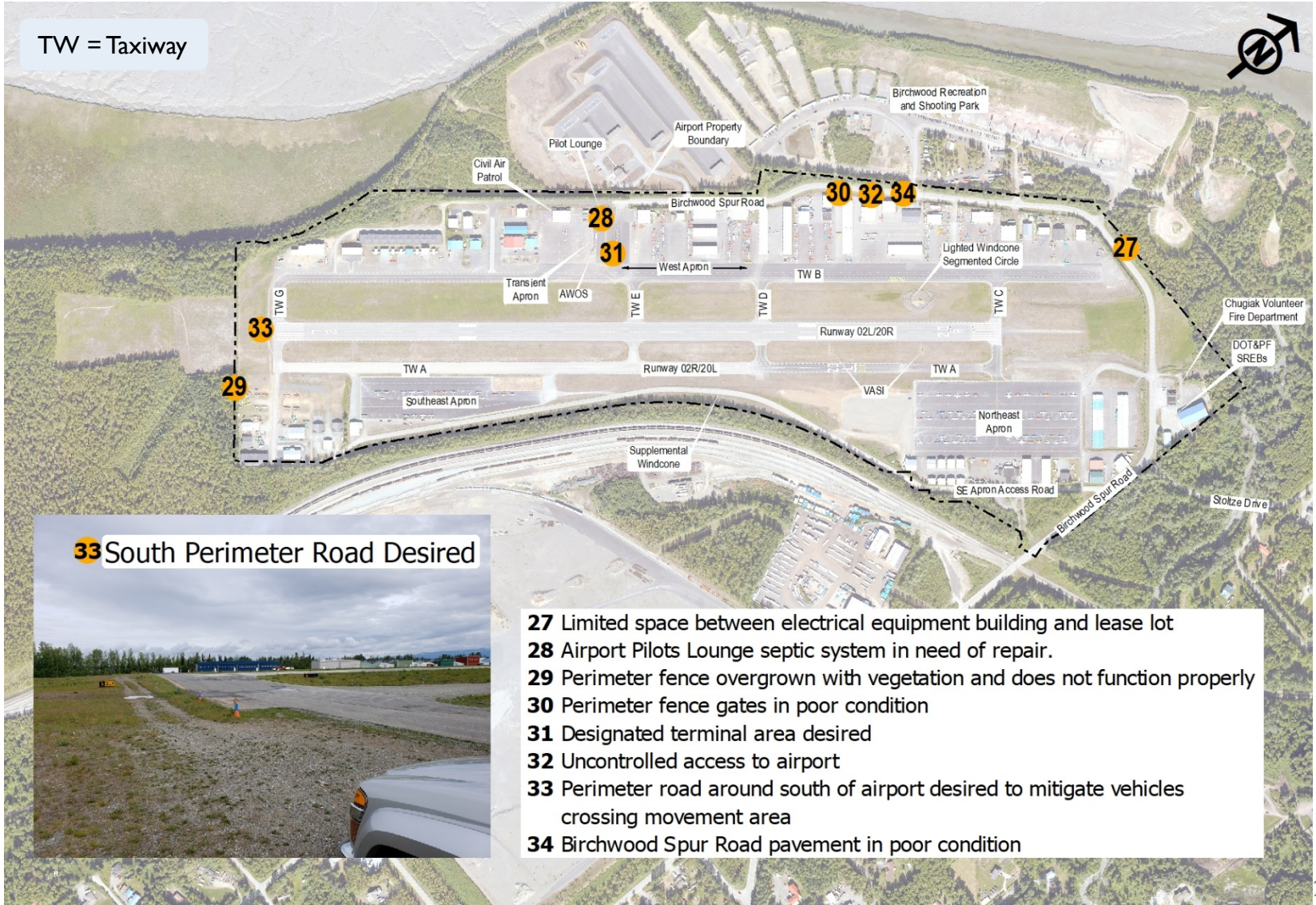
Aprons & Weather Equipment

GA = General Aviation | TW = Taxiway
 FAA = Federal Aviation Administration



- 20** Taxi lanes and parking areas designed for B-II aircraft desired
- 21** Apron designated for commercial use desired
- 22** Portable sanitation facilities at GA aprons desired
- 23** Electrical outlets at GA tie-downs desired
- 24** Designated vehicle parking on Southeast Apron desired
- 25** Terrain south of taxiway blocks view of approaching and taxiing aircraft
- 26** Weather station location does not meet FAA siting criteria

Areas for Improvement Facilities & Access



Areas for Improvement

Safety, Airport Maintenance, & Airport Management

- Simultaneous operations occur occasionally on runways
- Snow removal operations create snow piles and berms on lease lots and tie-downs
- On-site airport manager desired
- Increased non-airport traffic and theft reported in recent years

Areas for Improvement

Land Use & Planning

GA = General Aviation

- Separation of GA and commercial operations with designated aprons desired
- Better enforcement of vehicle and aircraft moving violations desired
- Concerns about management and maintenance with possible public-private partnership
- Additional lease and tie-down space desired

Recap of Big Themes: Areas for Improvement

- No lease lots or hangar space available and nowhere on airport property to expand
- Anxiety about the public-private partnership
- Need for an onsite airport manager
- Gravel ski strip important
 - Recognize that configuration needs to be improved for additional safety and eligibility for FAA funding
- RSA issues prior to 02L and beyond 20R
- Unauthorized vehicle and pedestrian access presents safety hazards

Results from Initial Forecasts

- The Aviation Activity Forecast for operations is **based on observed and recorded aviation activity.**
- Aviation activity data was **recorded using a General Audio Recording Device (G.A.R.D.)*** between July 21 and August 16, 2020, and September 2 and October 2, 2020.
- **No changes to current use have been identified or forecasted.**

**The G.A.R.D. records radio transmissions and operations through radar surveillance based on active aircraft transponders and cross-references transponders with the FAA's Automatic Dependent Surveillance-Broadcast (ADS-B) registry to identify the make and model of the aircraft.*

10 minutes

How will the Airport Master Plan address the financial sustainability of the airport?

Financial Plan

The financial plan will address **projected growth, funding needs and sources**, and any **proposed changes to lease rates or user fees**

Birchwood's **operating costs** will be **benchmarked against two other airports** in the region to compare costs for similar levels of service

The plan will provide a **cash flow forecast** and **analysis of variables** that may **impact sustainability**

Potential Public/Private Partnership



Today the airport is operated and managed by the Alaska Department of Transportation & Public Facilities (DOT&PF).



Third party private management is being considered as part of this Master Plan Update.



IMPORTANT: This part of the AMP Update process has not happened. This is a future task in the planning process.

Our Scope of Work for this FUTURE TASK: Potential Public/Private Partnership Exploration

1

Build from the **Financial Plan** component of the AMP which will:

- Address projected growth, funding needs and sources, and any proposed changes to lease rates or user fees.
- Identify gaps in revenue and provide a foundation for how to fill those gaps (a financial model or proforma).

2

Determine **possible management options** for a **possible public-private partnership** (“3P”) between DOT&PF and any other 3rd party interest.

3

Compare management options and prepare a detailed **Strengths, Weaknesses, Opportunities and Threats** and **feasibility analysis of a privately managed airport**. This analysis will:

- Consider financial and other information about each management option as it relates to the AMP Vision and Goals.

Interviews: Potential Public/Private Ownership

- Airport users are frustrated with a **lack of communication from DOT&PF.**
- Users are interested in more attentive management but **concerned third party or private sector manager may increase fees.**

*“Currently, we do not have anyone we can go to if we want to see change at this airport. If something goes wrong, **we feel like we get the run around** from DOT&PF. There is no process or allowance.”*

“Cost is a huge issue – **don’t price us out of flying.** We want this to be a place where young people can come in and fly. If you make it cost a fortune, they won’t come in. Almost every place where DOT&PF handed over management to other entity, it results in higher/expensive fees – Palmer, Wasilla. Prices doubled in a year or two. People can’t afford that.”



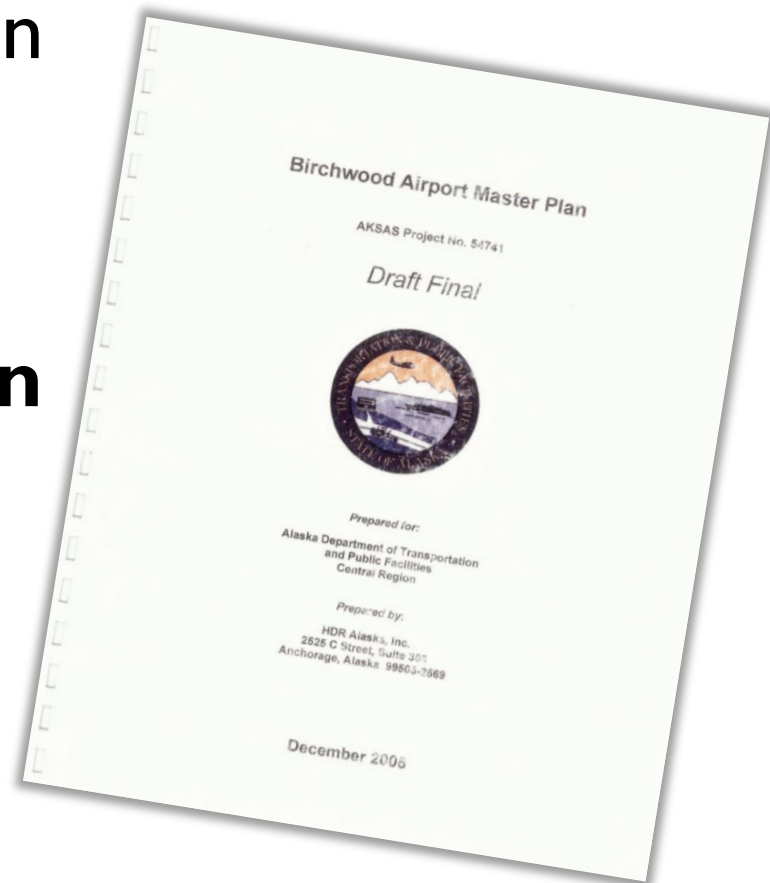
15 minutes

Frequently Asked Questions About the Project

Frequently Asked Question (FAQ) #1

The last Birchwood Master Plan Update was completed in 2005.

How has the previous plan been used and what recommendations have been implemented?



FAQ Answer #1, Part 1

The **2005 Birchwood AMP** was used to identify and submit projects to the **Aviation Project Evaluation Board (APEB)**, where *Birchwood projects compete against proposed projects at other Alaska airports.*

- Through the APEB, DOT&PF evaluates and scores state-owned projects across the state.
- Emphasis is placed on airports that do not have road access.
- DOT&PF is obligated to provide access to all Alaska communities.
- Communities with no road access/that are reliant on year-round airport are more likely to receive a portion of the limited funding.

FAQ Answer #1, Part 2

Then what is the benefit of an Airport Master Plan?

- Documentation of a needed improvement in an AMP is necessary to improve a project's APEB score.
- It does not guarantee funding, but it is substantially harder to get funding when the project is not documented in an AMP.
- ***Public support matters*** and the ***AMP is one method to document that support.***
- Newer documents are more in alignment with current community needs.

Frequently Asked Question #2

Why is DOT&PF exploring 3rd party management of the Birchwood Airport?

FAQ Answer #2:

DOT&PF is exploring options for airport

management – the study may find the best way to provide service to users and meet DOT&PF's needs is to continue as is.

Frequently Asked Question #3



**Where does Birchwood Airport
revenue go?**

FAQ Answer #3

- All revenue generated at DOT&PF owned airports is put into a **general aviation fund**.
- The general aviation fund **supports aviation projects across the state**.
- Federal Register Volume 64, No. 30 issued “Policy and Procedures Concerning the Use of Airport Revenue”
Section V – Permitted Uses of Airport Revenue, A.1. identifies airport revenue may be used for “The capital or operating costs of the airport, the local airport system, or other local facilities owned or operated by the airport owner or operator and directly and substantially related to the air transportation of passengers or property.”
- Alaska Code 17 AAC 45

Other Questions We Have Received – To Be Considered as Project Moves Forward



How are operations and maintenance currently funded?

How do operations costs compare with other Alaska airports?

Has a public/private partnership model been successfully applied at a comparable Alaska airport?

What are the intended future uses of adjacent landowners?

Questions

- What other questions do you have?
- Please add them to the Q+A.

You can also submit comments & questions on the website:

www.dot.state.ak.us/creg/birchwoodamp/

• **Tell us what you think.**
Submit your comments in the box below or contact the DOT&PF Project Manager. See "Contact Us" below.

* Name: **REQUIRED**

Email Address: **OPTIONAL**

Organization: **OPTIONAL**

* Comments: **REQUIRED**

Submit

10 minutes

Next Steps and Wrap Up

Birchwood AMP: Our Timeline

Summer 2020

Reconnaissance

Current Conditions, Uses, Issues and Needs

Fall 2020-2021

Assessment

Airport Facilities, Airspace, Finances, Partnerships, Projected Use

Early 2022

Draft Plan Development, Release + Review

Preliminary Airport Master Plan Update, Layout, Aeronautical Survey

Summer 2022

Plan Refinement + Finalization

FINAL Airport Master Plan Update, Layout, Aeronautical Survey

Community involvement occurs throughout, including interviews, stakeholder working group meetings, and three public meetings:

- **winter 2021**
- **summer 2021**
- **fall 2021**

Learn More & Contact Us

<http://www.dot.state.ak.us/creg/birchwoodamp/>

→ Submit your comments and questions!

Jessica Wuttke-Campoamor, DOT&PF Project Manager

Email: jessica.wuttke-campoamor@alaska.gov

Phone: 907-269-0519

Shelly Wade, Public Involvement Lead

Email: shelly@agnewbeck.com

Phone: 907-242-5326



Photo by Anna Bartholomew, DOT&PF

Join us for an *interactive* virtual public meeting to discuss potential alternatives for the future Birchwood Airport!

6:00 PM to 8:00 PM

Wednesday
October
27th
2021

How to Connect to the Virtual Meeting

For video and audio:

- Connect using this link:

<https://agnewbeck.zoom.us/j/88557292036?pwd=RnE0SDRlZzE4VHBMdjRzZkovYThlUT09>

For audio only:

- Dial: 1-833-548-0276 (Toll Free)
 - Meeting ID: 885 5729 2036#
 - Passcode: 401438#

Persons with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD), 907- 269-0473. We are also able to offer, upon request, Alaska Native Language Translation.

About the Birchwood Airport Master Plan (AMP) Update

The Alaska Department of Transportation and Public Facilities (DOT&PF) is updating the Birchwood Airport Master Plan. The updated Airport Master Plan will outline **how the airport can best serve the future interests and needs of the flying public, aviation community, DOT&PF, and other stakeholders.**



About the VIRTUAL October 27th Meeting

Join DOT&PF, Federal Aviation Administration, and the rest of the project team, to learn and ask questions about Birchwood Airport finances (**how the money works**); historic, current, and projected uses of the airport and surrounding lands (**aviation demand and other land uses**); potential alternatives for meeting interests and needs (**different ways to achieve a shared vision and goals for the future airport**).

Questions about the project?

Contact the DOT&PF Project Manager
Jessica Wuttke-Campoamor
Phone: 907-269-0519
Email: jessica.wuttke-campoamor@alaska.gov

Questions on how to connect to the meeting?

Contact the Project Public Involvement Lead
Shelly Wade
Phone: 907-242-5326
Email: shelly@agnewbeck.com

Visit the project webpage to learn more: <http://dot.alaska.gov/creg/birchwoodamp/>

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STATE OF ALASKA
THIRD JUDICIAL DISTRICT

Adam Garrigus being first duly sworn on oath deposes and says that she is a representative of the Anchorage Daily News, a daily newspaper. That said newspaper has been approved by the Third Judicial Court, Anchorage, Alaska, and it now and has been published in the English language continually as a daily newspaper in Anchorage, Alaska, and it is now and during all said time was printed in an office maintained at the aforesaid place of publication of said newspaper. That the annexed is a copy of an advertisement as it was published in regular issues (and not in supplemental form) of said newspaper on

10/10/2021

and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is not in excess of the rate charged private individuals.

Signed



Subscribed and sworn to before me
this 11th day of October 2021.

Notary Public in and for
The State of Alaska.
Third Division
Anchorage, Alaska

MY COMMISSION EXPIRES

7/14/2024

Notice of Public Meeting Alaska Department of Transportation & Public Facilities

Birchwood Airport Master Plan Update Project No. CFAPT00354/AIP 3-02-0034-008-2018

The Alaska Department of Transportation and Public Facilities (DOT&PF), with funding support from the Federal Aviation Administration (FAA), is updating the Birchwood Airport Master Plan. The updated Airport Master Plan will outline how the airport can best serve the future interests and needs of the flying public, aviation community, DOT&PF, and other stakeholders.

Join DOT&PF, Federal Aviation Administration, and the rest of the project team, to learn and ask questions about Birchwood Airport finances (how the money works); historic, current, and projected uses of the airport and surrounding lands (aviation demand and other land uses); potential alternatives for meeting interests and needs (different ways to achieve a shared vision and goals for the future airport).

Wednesday, October 27, 2021
6:00 – 8:00 p.m.

**For video and audio:
Connect using this link:**

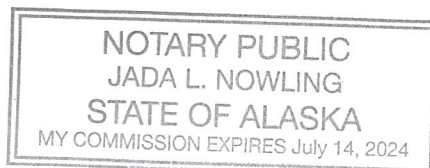
<https://agnewbeck.zoom.us/j/88557292036?pwd=RnE0SDRlZzE4VHBMdjRzZkovYThlUT09>

**For audio only:
Dial: 1-833-548-0276 (Toll Free)
Meeting ID: 885 5729 2036 #
Passcode: 401438 #**

For any questions on how to connect to the meeting, please email Shelly Wade, AICP, at shelly@agnewbeck.com. Have questions or comments about the project? Please contact the DOT&PF Project Manager, Jessica Wuttke-Campoamor at (907) 269-0519 or jessica.wuttke-campoamor@alaska.gov.

Persons with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD), number 269-0473. We are also able to offer, upon request, Alaska Native Language Translation.

Pub: October 10, 2021





Notice of Public Meeting

Alaska Department of
Transportation &
Public Facilities

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Proposed Reader Board Text for Birchwood Airport Master Plan Update, 10-27-21

Guidelines (from Jessica)

- It looks like 10 or 12 characters per line
- 3 lines per screen
- Up to 3 or maybe more screens per sequence
- Time of each display is adjustable

Proposed dates and times: 8 am – 6 pm starting this weekend (Saturday, October 23rd)

If 10 characters:

B	I	R	C	H	W	O	O	D	
A	I	R	P	O	R	T			
P	L	A	N						

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D	O	T	.	A	L	A	S	K	A
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If 12 characters:

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O	C	T	O	B	E	R		2	7		
V	I	S	I	T		D	O	T	.		
A	L	A	S	K	A	.	G	O	V		

**Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan Update
 Virtual Public Meeting #2 – October 27th, 2021**



- 6:00 pm to 8:00 pm

To join by video and audio, connect using this link:

- <https://agnewbeck.zoom.us/j/88557292036?pwd=RnE0SDRIZzE4VHBMdjRzZkovYTU09>

To join by audio only:

- Dial: 1-833-548-0276
- Meeting ID: 885 5729 2036#
- Passcode: 401438#

Objectives

- Update the public on progress since February.
- Present airport layout alternatives.
- Collect input from the public.

Agenda

Item	Timing
Welcome & Introductions <ul style="list-style-type: none"> • Land Acknowledgement • Birchwood AMP Purpose & Schedule • Meeting Purpose 	10 minutes
Financial Assessment <ul style="list-style-type: none"> • How does the money work? What are Birchwood Airport’s revenue and expenses? • How do Birchwood Airport finances and operations compare to similar AK airports? 	5 minutes
Land Use Assessment <ul style="list-style-type: none"> • What are the intended future land uses for the Birchwood Airport and adjacent lands? 	5 minutes
FAA Framework & Context <ul style="list-style-type: none"> • How do federal policies and criteria impact the Birchwood today and future operations? 	5 minutes
Aviation Forecasts & Alternatives <ul style="list-style-type: none"> • What is the historic use, and current and anticipated future demands at the Birchwood Airport? • What options are being considered to best preserve interests and meet needs at the Birchwood Airport? 	1 hour 25 minutes
Next Steps and Wrap Up	10 minutes

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Public Meeting #2

Prepared for Alaska Department of Transportation &
Public Facilities

*Presented and facilitated by HDL Engineering Consultants &
Agnew::Beck Consulting*

October 27, 2021; 6:00 – 8:00 PM



6:00 p.m. – 6:10 p.m.

Welcome & Introductions

About Our Team

The Alaska Department of Transportation and Public Facilities is leading the process with assistance from a consulting team:



Land Acknowledgement

*Dena'inaq e'nen'aq'
gheshtnu ch'q'u yeshdu. (Dena'ina)*

Translation by J. Isaak and S. Shaginoff-Stuart

*I live and work on the
land of the Dena'ina. (English)*

Project Area Overview



Land Ownership

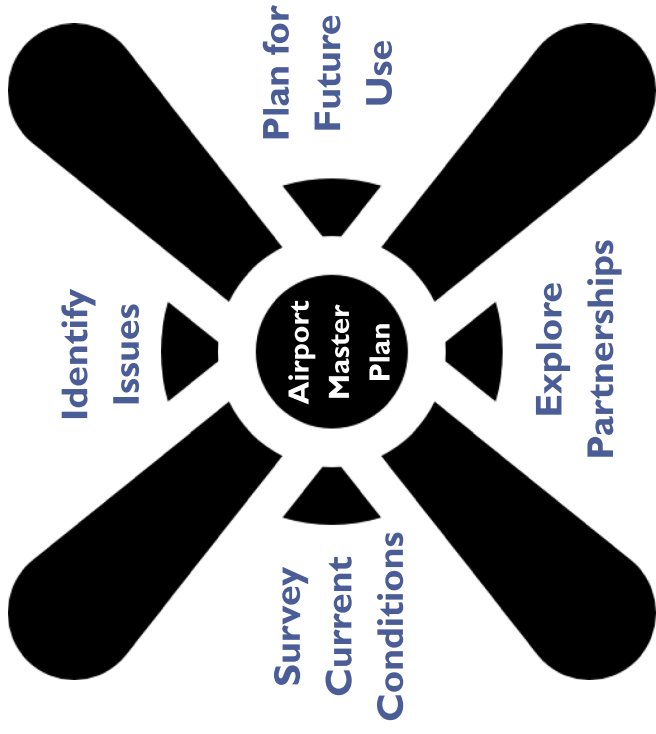


LEGEND

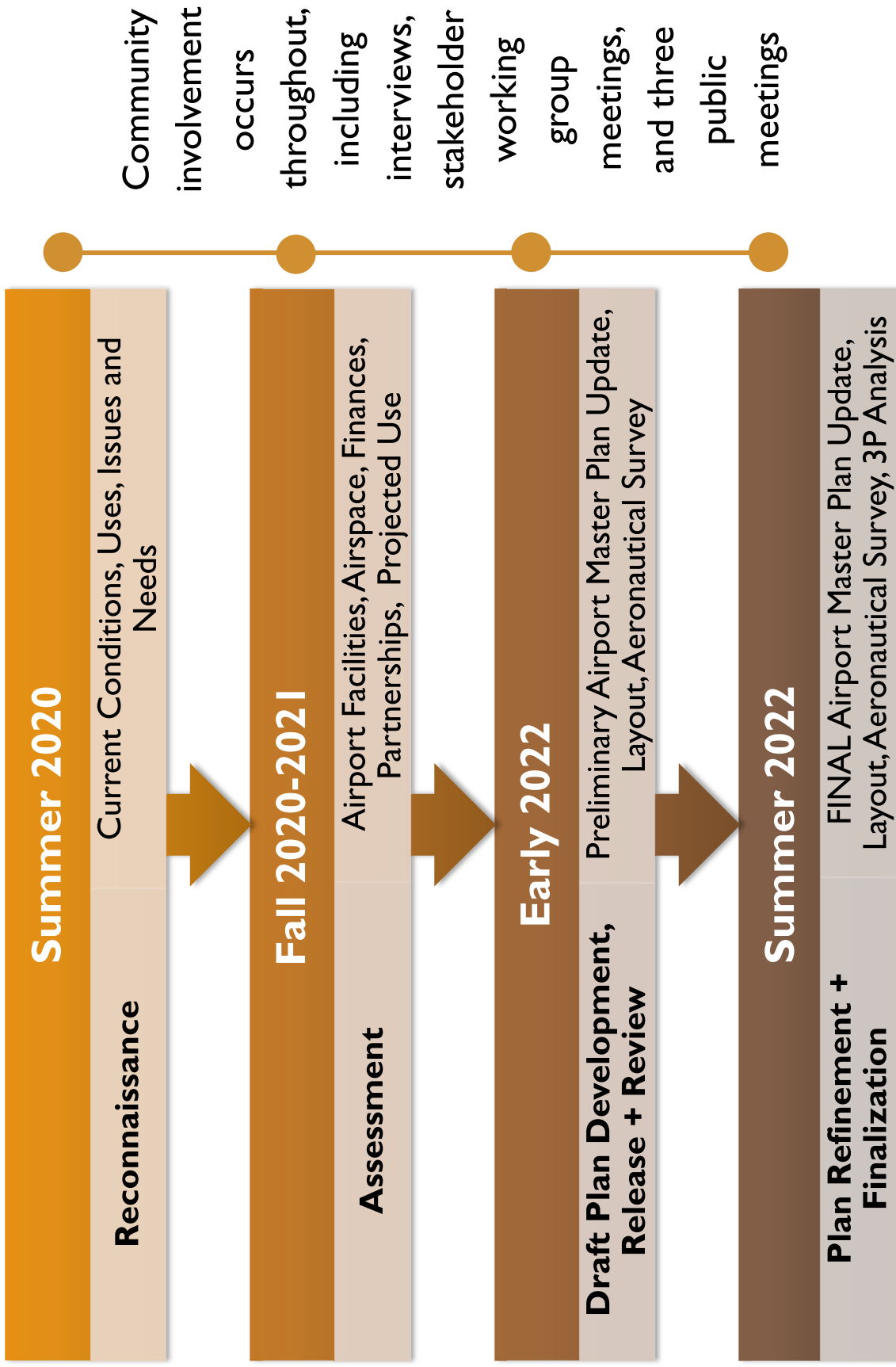
- STATE OF ALASKA
- MUNICIPALITY OF ANCHORAGE
- MUNICIPAL AND STATE PARKS
- ALASKA RAILROAD
- EKLUTNA, INC
- PRIVATE

Project Purpose

To determine how the airport can best serve the future interests and needs of the flying public, aviation community, Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders.



Project Schedule



Progress Since March 2021

- Aviation Activity Forecast
- Financial Assessment
- Land Use Assessment
- Frequently Asked Questions

Meeting Purpose

- Review the project and purpose.
- Update on progress and gather input on:
 - Financial analysis
 - Land use assessment,
 - Aviation activity forecast
 - Preliminary alternatives.
- Discuss alternatives survey and next steps in the planning process

Meeting Agenda

Item	Timing
Welcome & Introductions <ul style="list-style-type: none">• Land Acknowledgement• Birchwood AMP Purpose & Schedule• Meeting Purpose	10 minutes
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Next Steps and Wrap Up	10 minutes

General Meeting Guidelines

- Be respectful.
- Be positive and solutions oriented.
- Be clear and concise.
- Be specific.
- Avoid jargon and acronyms.
- Think creatively and strategically.

Online & Telephonic Meeting Guidelines

Please:

1. Follow Shelly's lead as the designated facilitator.
 - Throughout the meeting, participants will have several opportunities to comment or ask questions.
2. Mute your microphone when you are not talking.
3. If you have joined by video, don't forget – everyone can see you 😊.
4. We will do introductions, but please repeat your name when it is your turn to comment or ask a question.
5. Please limit use of the Zoom chat space, unless prompted by a guiding question, or you're having a technical issue.

6:10 p.m. – 6:15 p.m.

Financial Assessment

Where does Birchwood Airport revenue go?

- All profit from DOT&PF airports go to a general aviation fund.
- This money funds maintenance and operations for all DOT&PF airports.
- DOT&PF is required to provide access to all Alaska communities, so it prioritizes maintenance in communities off the road system.

Financial Assessment

- Northern Economics, Inc. prepared a comprehensive financial assessment of the Birchwood Airport.
- The assessment used data from 2015-2020.
- The assessment includes revenue, expenses and a comparison to two similar airports.

Birchwood Airport's Revenue and Expenses

The Birchwood Airport has had an operating profit over the last six years.

Table 2.1 Birchwood Airport Revenues, Expenses, and Operating Profits, \$, FY 2015–2020

Fiscal Year	Revenue	Expenses	Operating Profit
2015	208,165.98	66,793.98	141,372.00
2016	201,024.25	57,423.97	143,600.28
2017	200,555.79	134,124.85	66,430.94
2018	243,716.10	99,907.24	143,808.86
2019	258,990.50	97,672.78	161,317.72
2020	273,832.14	147,209.04	126,623.10

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Top Revenue Sources

FY2020 Revenue:

- 70% came from lease fees or “land use.”
- 25% came from tie-downs and parking.
- Fees and fuel permits make up the remaining 5%.

Top Revenue Sources

Revenue grew 36.5% from FY 2017 to FY 2020.

Table 2.2 Birchwood Airport Revenue Detail, \$, FY 2015–2020

Fiscal Year	Assigned Aircraft Tie-down/Transient Parking	Fuel Dispensing Permit	Interest/Late Fees	Application/Process Fees	Land Use	Total Revenue
2015						208,165.98
2016						201,024.25
2017	50,937.19	2,895.35	260.73	1,050.00	145,412.52	200,555.79
2018	68,718.00	4,721.14	243.28	4,225.00	165,808.68	243,716.10
2019	68,756.16	10,982.53	396.59	3,775.00	175,080.22	258,990.50
2020	68,723.00	5,137.15	212.52	8,025.00	191,734.47	273,832.14

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Top Expenses

- The Birchwood Airport’s most significant expenses in FY 2020 were facilities and capital improvements.
- Historically, services were the largest expenses.

Table 2.3 Birchwood Airport Expense Detail, \$, FY 2015–2020

Fiscal Year	Personal Services	Services	Commodities	Capital Outlay	Facilities	Total Expenses
2015	24,630.88	6,289.18	35,873.92			66,793.98
2016	26,887.86	5,296.41	25,239.70			57,423.97
2017	74,387.00	51,310.18	8,427.67			134,124.85
2018	45,629.06	42,344.99	11,933.19			99,907.24
2019	42,399.96	46,883.01	8,389.81			97,672.78
2020	27,708.92	10,715.40	5,429.71	25,207.05	78,147.96	147,209.04

Source: DOT&PF (2021)

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

Benchmarking

Northern Economics, Inc. compared the
Birchwood Airport with similar facilities in
Wasilla and Soldotna



Benchmarking

Table 4.2 Estimated Operations and Based Aircraft at Birchwood, Soldotna, and Wasilla Airports, 2020

Airport	Total Operations	Based Aircraft
Birchwood	67,047	308
Soldotna	21,100	169
Wasilla	42,660	168

NOTE: For Birchwood, includes touch-and-go landings.

Benchmarking

Birchwood Airport's operating expenses are lower than the city-owned comparable facilities, largely due to a lack of on-site staff.

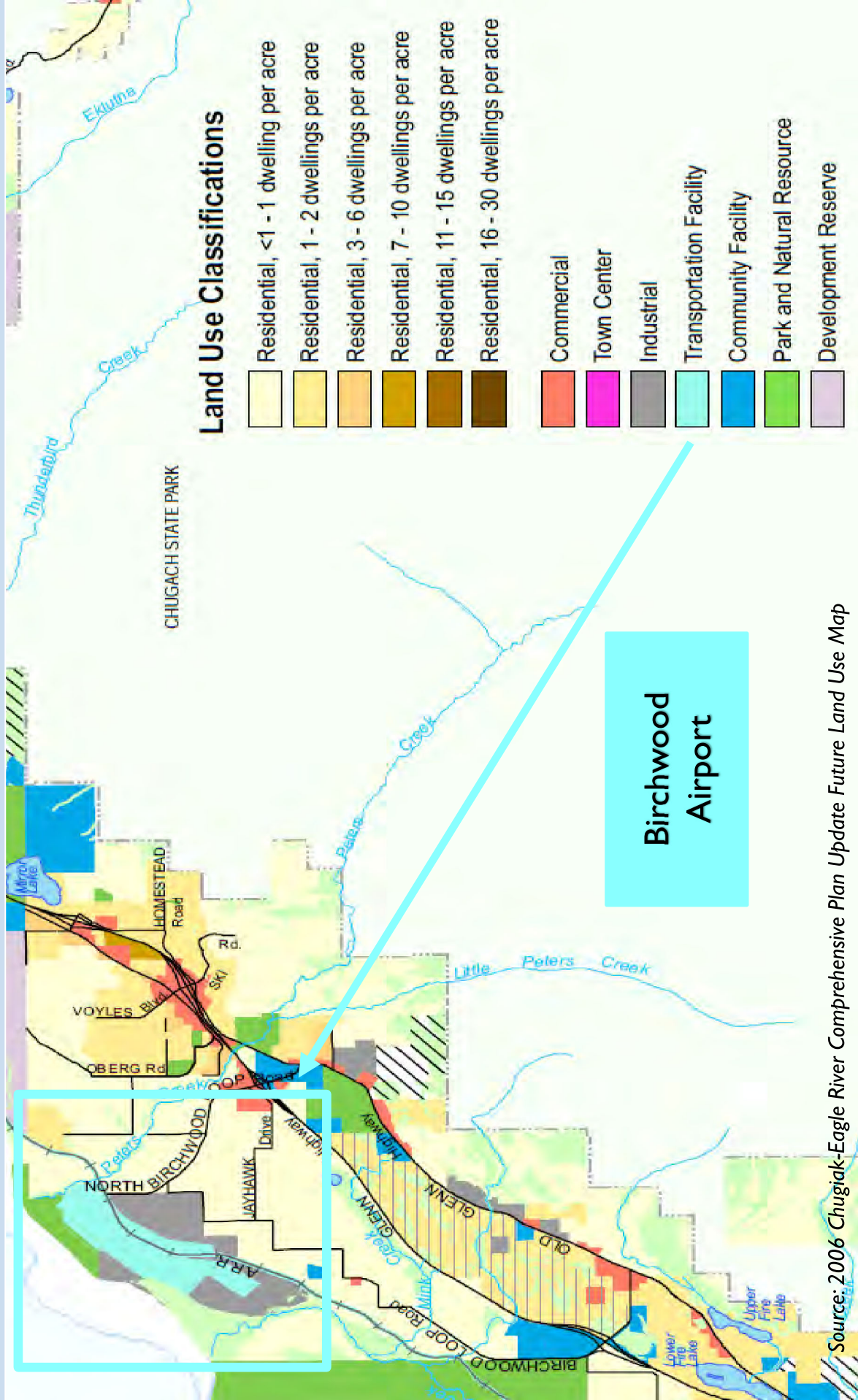
Total 2020 Operating Expenses		
Birchwood Airport	Soldotna Airport	Wasilla Airport
\$147,209	\$149,848	\$214,392

Excerpted from the May 2021 Birchwood AMP Update: Financial Assessment

6:15 p.m. – 6:20 p.m.

Land Use Assessment

Future Land Use

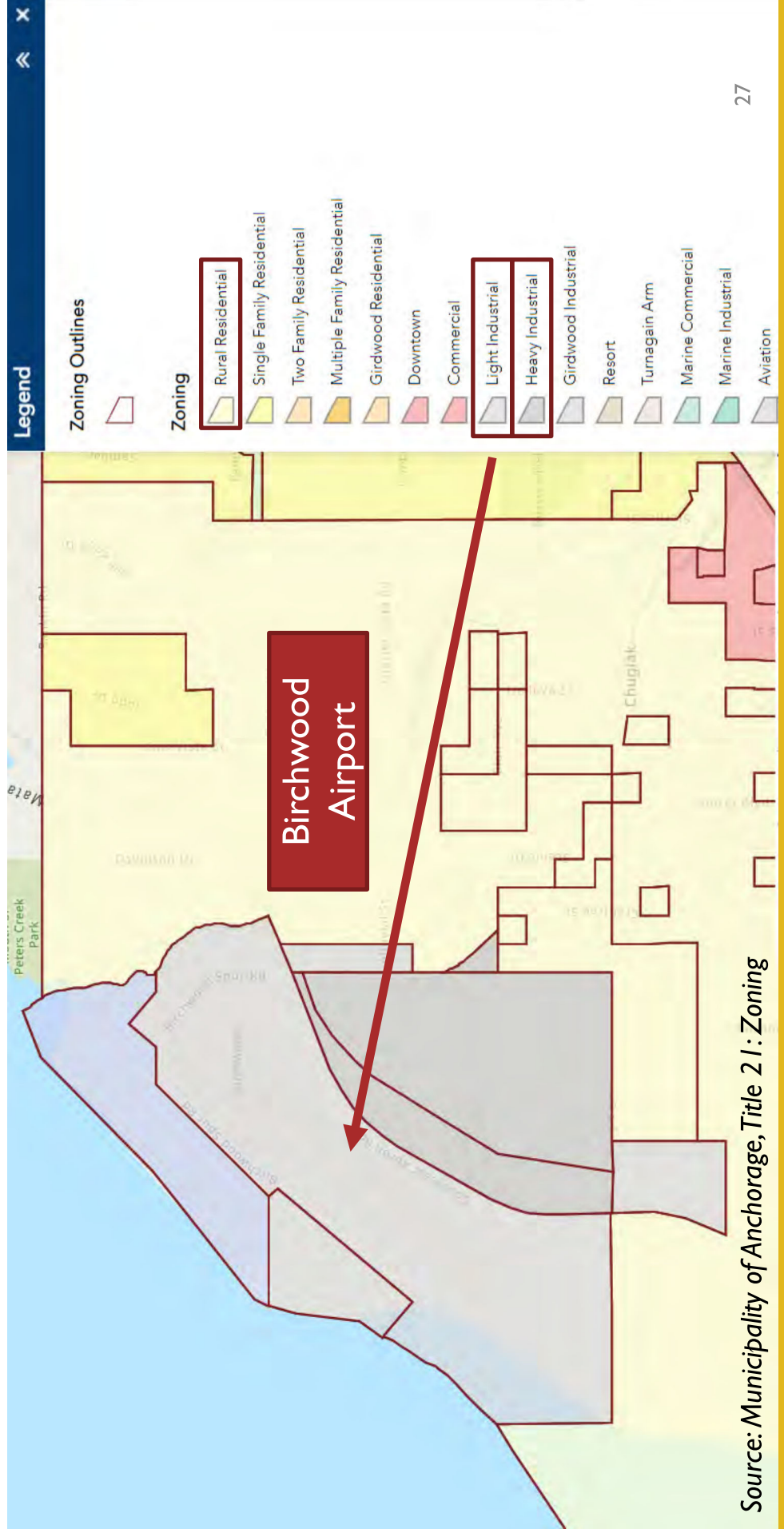


Future Land Use

- Past and current versions of future land use maps continually show the Birchwood Airport and surrounding areas as predominantly transportation, industrial, recreation, and low density residential.
- Adjacent landowners reported no plans that conflict with airport operations.

Existing Zoning

The Birchwood Airport is zoned as “light industrial.” Adjacent land is mostly industrial and low-density residential.



Birchwood Airport Inventory

- In 2020, 308 aircraft were based at the airport.
- The airport includes 67 lease lots and 119 tie-downs.
 - Lease lots and tie-downs are generally all occupied.

Adjacent Lands

- Eklutna, Inc. is the largest nearby landowner, owning several parcels to the north and south.
- The Alaska Railroad owns 174 acres to the east.
- The Birchwood Recreation Shooting Park sits on 72 acres to the west.

Expansion Opportunities



Expansion Opportunities

- The Airport is framed by Cook Inlet to the west, the railroad to the east and Peter's Creek to the north.
- The most feasible expansion would be through acquisition of Eklutna, Inc. land to the south.
- **IMPORTANT:** The Eklutna Tribe would assess any Eklutna, Inc. lands for cultural and archaeological assets prior to selling.

S.E. Apron →

6:20 p.m. – 6:25 p.m.

FAA Framework & Context

FAA roles during planning process

The recommendations contained in an airport master plan represent the views, policies and development plans of the airport sponsor and do not necessarily represent the views of the FAA.

FAA advises on standards, eligibility/requirements for projects, sound planning practices, and other matters as needed.

Ultimately, FAA:

- Accepts the overall master plan
- Approves the forecast and critical aircraft determination
- Conditionally approves the Airport Layout Plan (ALP)

FAA acceptance/approval of the above does not constitute a commitment to participate in any development depicted in the plan, nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public law.

Airport Improvement Program

Historically, \$2.4M annual avg (within Alaska)

- Approximately \$8.3M at BCV in past 10 years

Projects to preserve/enhance airport safety, capacity, security, and environmental concerns.

A few requirements for AIP projects:

- Eligible for AIP program
- Justified by civil aeronautical demand (e.g., critical aircraft)
- Meet FAA standards
- Depicted on approved ALP

Needs within the system exceed available funds.

6:25 p.m. – 7:50 p.m.

Aviation Forecast & Alternatives

Results from Aviation Activity Forecast

- The Aviation Activity Forecast for operations is based on **observed and recorded aviation activity.**
- Aviation activity data was **recorded using a General Audio Recording Device (G.A.R.D.)*** between July 21 and August 16, 2020, and September 2 and October 2, 2020.
- **FAA Approval – September 15, 2021**

**The G.A.R.D. records radio transmissions and operations through radar surveillance based on active aircraft transponders and cross-references transponders with the FAA's Automatic Dependent Surveillance-Broadcast (ADS-B) registry to identify the make and model of the aircraft.*

Results from Aviation Activity Forecast

- Critical Aircraft A-1 (small) (Cessna 172/182).
- No changes to current uses have been forecasted.
- 80% are training operations.

	Current (2020)	Forecasted (2040)
Total Airport Operations and Training Operations	~67,000	~76,300
Tie-downs	119	157
Lease lots	67	92

Development of Alternatives

Four potential Alternatives have been developed.

Alternatives are based on:

- Critical aircraft.
- Facility requirements identified during interviews and inventory.
- Future gravel/ski strip location.
- Forecasted need for more tie-down permits and lease lots.

Proposed Alternative One

ALTERNATIVE 1 - NO BUILD



LEGEND

- RSA
- OFA
-
-

RUNWAY SAFETY AREA
OBJECT FREE AREA/ZONE
RUNWAY PROTECTION ZONE



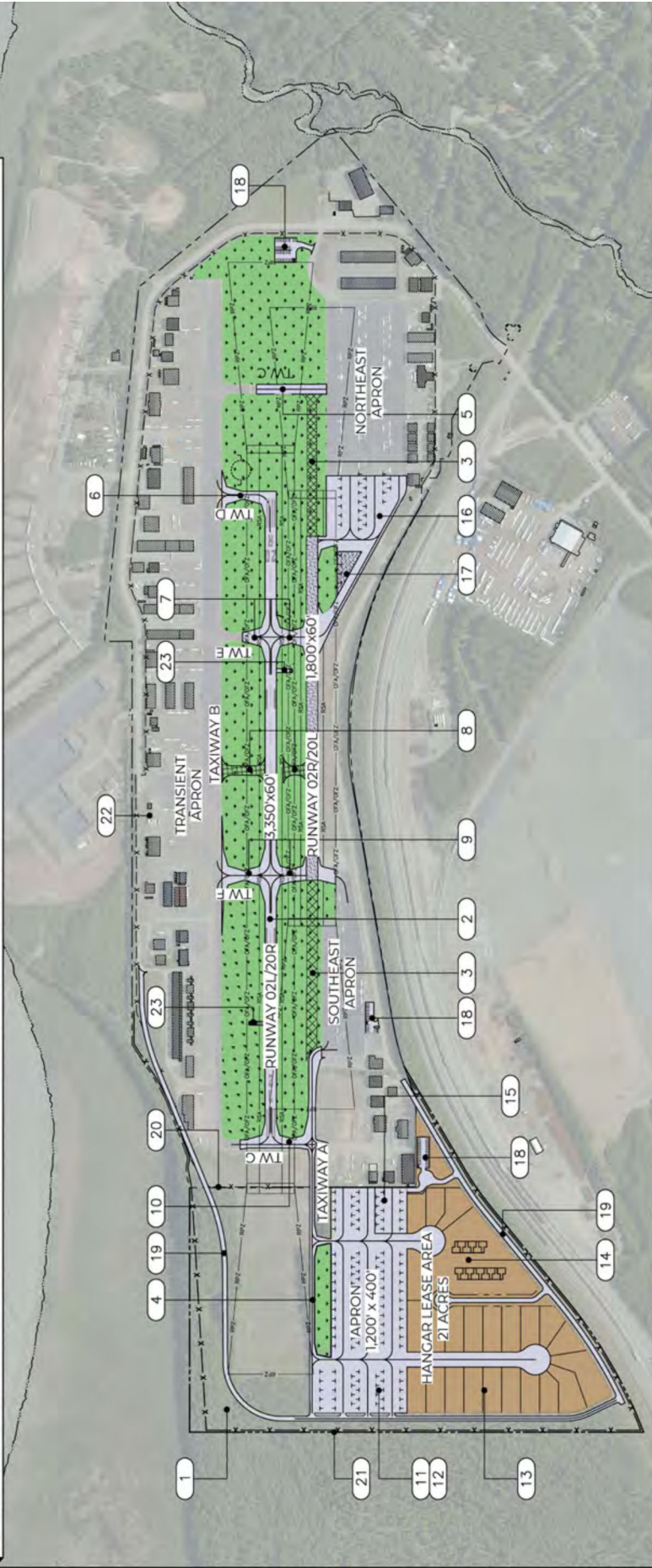
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BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 1
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
BIRCHWOOD, ALASKA
DATE: 10-26-2021
DRAWN BY: TA/TC
CHECKED BY: JAC
SHEET: 1
JOB NO.: 2019-014

Proposed Alternative Two

ALTERNATIVE 2

- | | | |
|--|---|--|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | 10 RECONSTRUCT EXISTING TAXIWAY G | 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES |
| 2 RECONSTRUCT RUNWAY 02L/20R | 11 CONSTRUCT NEW APRON (22 TIE-DOWNS) | 19 CONSTRUCT ACCESS ROADS |
| 3 REMOVE TAXIWAY A SEGMENTS | 12 INSTALL ELECTRICAL OUTLETS AT NEW TIE-DOWN SPACES | 20 REMOVE EXISTING FENCING |
| 4 CONSTRUCT TAXIWAY A EXTENSION | 13 NEW HANGAR LEASE LOT AREA | 21 CONSTRUCT NEW PERIMETER FENCING |
| 5 RECONSTRUCT TAXIWAY C | 14 NEW T-HANGAR LEASE LOT AREA | 22 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER |
| 6 CONSTRUCT NEW TAXIWAY D | 15 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) | 23 CONSTRUCT NEW PAV |
| 7 RECONSTRUCT EXISTING TAXIWAY D AND RENAME TO TAXIWAY E | 16 EXPAND NORTHEAST APRON (25 TIE-DOWNS) | |
| 8 REMOVE EXISTING TAXIWAY E | 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS) | |
| 9 CONSTRUCT NEW TAXIWAY F | | |



LEGEND

- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- NEW GRAVEL SURFACE
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE

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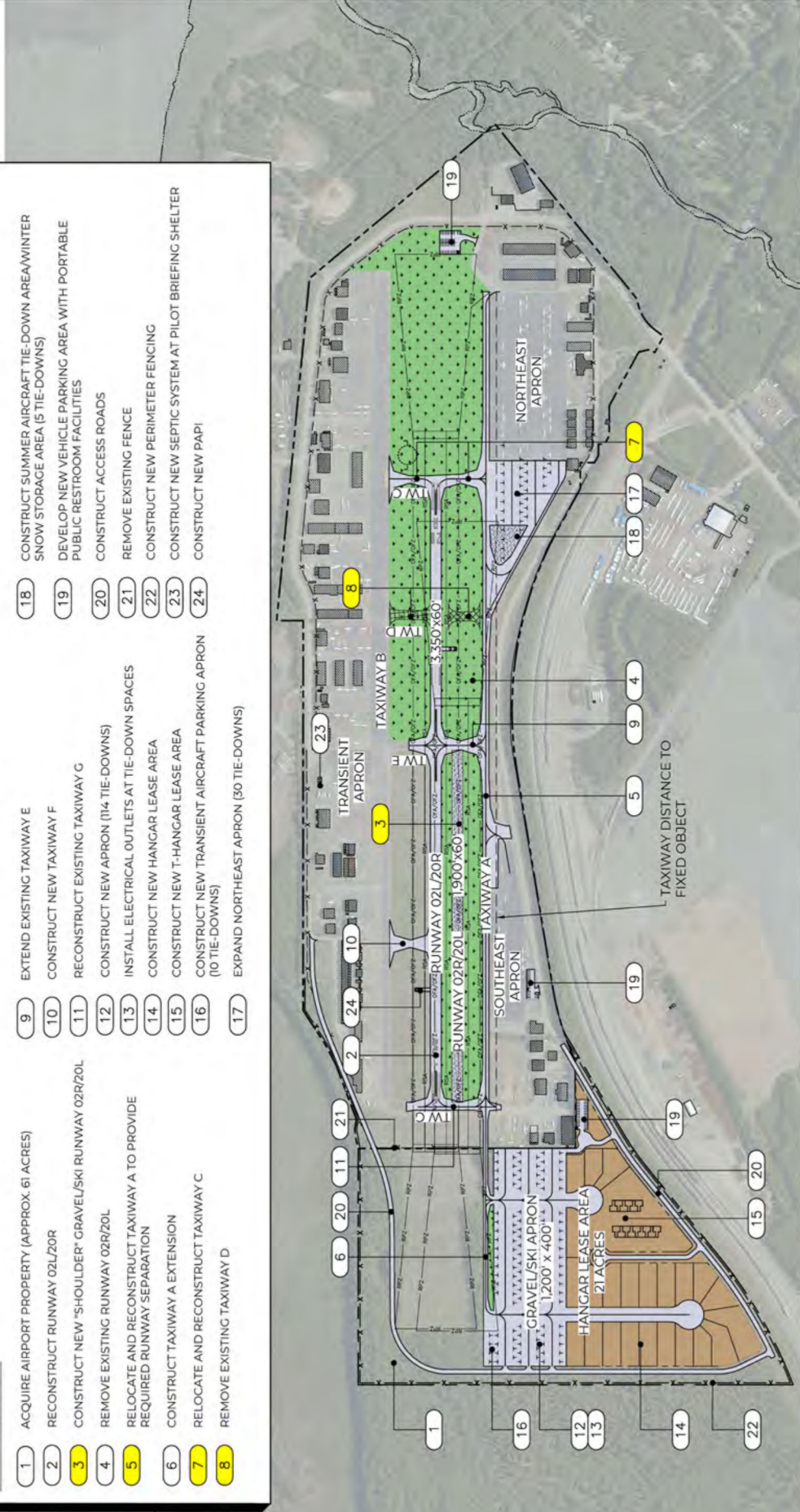
BIRCHWOOD AIRPORT MASTER PLAN
 EXHIBIT - ALTERNATIVE 2
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 10-26-2021
 SCALE: 1" = 250'
 DRAWN BY: TA/TC
 CHECKED BY: MS
 SHEET: 2
 JOB NO.: 20-014

Proposed Alternative Three

ALTERNATIVE 3

- | | | |
|--|--|---|
| (1) ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | (9) EXTEND EXISTING TAXIWAY E | (18) CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS) |
| (2) RECONSTRUCT RUNWAY 02L/20R | (10) CONSTRUCT NEW TAXIWAY F | (19) DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES |
| (3) CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02R/20L | (11) RECONSTRUCT EXISTING TAXIWAY G | (20) CONSTRUCT ACCESS ROADS |
| (4) REMOVE EXISTING RUNWAY 02R/20L | (12) CONSTRUCT NEW APRON (114 TIE-DOWNS) | (21) REMOVE EXISTING FENCE |
| (5) RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION | (13) INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES | (22) CONSTRUCT NEW PERIMETER FENCING |
| (6) CONSTRUCT TAXIWAY A EXTENSION | (14) CONSTRUCT NEW HANGAR LEASE AREA | (23) CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER |
| (7) RELOCATE AND RECONSTRUCT TAXIWAY C | (15) CONSTRUCT NEW T-HANGAR LEASE AREA | (24) CONSTRUCT NEW PAPI |
| (8) REMOVE EXISTING TAXIWAY D | (16) CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) | |
| | (17) EXPAND NORTHEAST APRON (30 TIE-DOWNS) | |



LEGEND

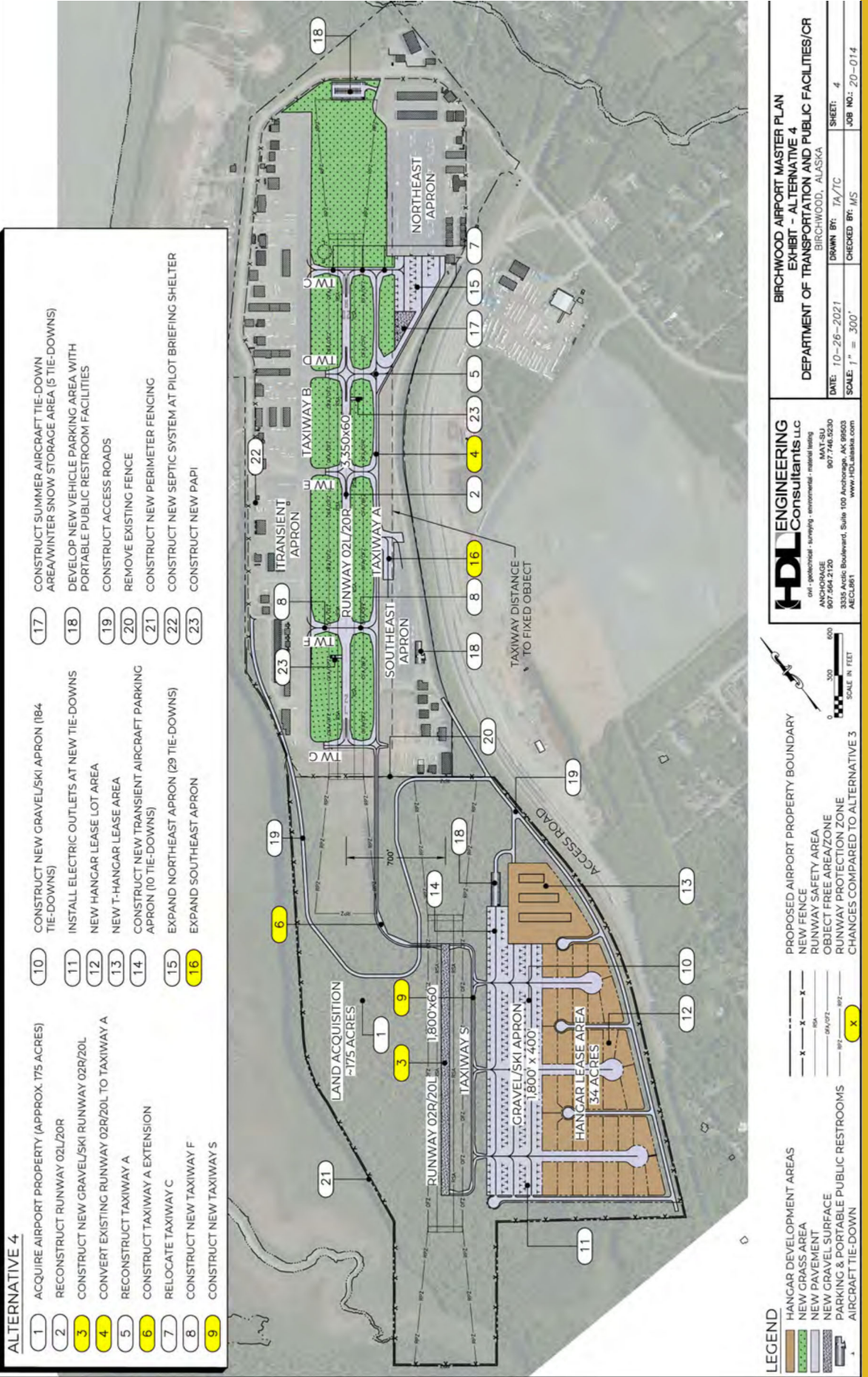
- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- NEW GRAVEL SURFACE
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE
- CHANGES COMPARED TO ALTERNATIVE 2



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BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 3
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA
 DATE: 10-26-2021
 SCALE: 1" = 250'
 DRAWN BY: TA/TC
 CHECKED BY: JMS
 SHEET: 3
 JOB NO.: 20-014

Proposed Alternative Four



- ALTERNATIVE 4**
- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 175 ACRES)
 - 2 RECONSTRUCT RUNWAY 02L/20R
 - 3 CONSTRUCT NEW GRAVEL/SKI RUNWAY 02R/20L
 - 4 CONVERT EXISTING RUNWAY 02R/20L TO TAXIWAY A
 - 5 RECONSTRUCT TAXIWAY A
 - 6 CONSTRUCT TAXIWAY A EXTENSION
 - 7 RELOCATE TAXIWAY C
 - 8 CONSTRUCT NEW TAXIWAY F
 - 9 CONSTRUCT NEW TAXIWAY S
 - 10 CONSTRUCT NEW GRAVEL/SKI APRON (184 TIE-DOWNS)
 - 11 INSTALL ELECTRIC OUTLETS AT NEW TIE-DOWNS
 - 12 NEW HANGAR LEASE LOT AREA
 - 13 NEW T-HANGAR LEASE AREA
 - 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS)
 - 15 EXPAND NORTHEAST APRON (29 TIE-DOWNS)
 - 16 EXPAND SOUTHEAST APRON
 - 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS)
 - 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES
 - 19 CONSTRUCT ACCESS ROADS
 - 20 REMOVE EXISTING FENCE
 - 21 CONSTRUCT NEW PERIMETER FENCING
 - 22 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER
 - 23 CONSTRUCT NEW PAPI

LEGEND

- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- NEW GRAVEL SURFACE
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE
- CHANGES COMPARED TO ALTERNATIVE 3

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BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 4
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 10-26-2021
 SCALE: 1" = 300'
 DRAWN BY: TA/TC
 CHECKED BY: JMS
 SHEET: 4
 JOB NO.: 20-014

Alternatives Comparison

	Alt 1 – No Build	Alt 2 – Remove In-Line Taxiways	Alt 3 – Shoulder Gravel/Ski Runway	Alt 4 – Relocated Gravel/Ski Runway
Meets FAA parallel runway separation requirements for runways with simultaneous operations	No	No	No	Yes
Does not require a Modification to Standards (MOS) for Runway Separation	No	No	No	Yes
Future Runway improvements are AIP eligible if MOS is attained	No	Yes	Yes	Yes
Removes in-line taxiways and improves airport safety	No	Yes	Yes	Yes
Provides leasable land and apron space to accommodate growth	No	Yes	Yes	Yes
Apron areas are located outside of RPZs	No	No	Yes	Yes
Does not require FAA HQ approval for development justification for ski/gravel runway development	N/A	No	No	No
Maintains current runway operations	Yes	Yes	Yes	No
Establishes a parallel taxiway on the east side of the airport	No	No	Yes	Yes
Separation between the runways makes it clear to pilots that simultaneous operations are or are not allowed	No	No	Yes	Yes

7:50 p.m. – 8:00 p.m.

Next Steps and Wrap Up

Potential Public/Private Partnership (“3P”)



Today the airport is operated and managed by the Alaska Department of Transportation & Public Facilities (DOT&PF).



Third party private management is being considered as part of this Master Plan Update.



IMPORTANT: This part of the AMP Update process has not happened. This task is expected to be completed in Summer 2022.

Our Scope of Work for this FUTURE TASK: Potential Public/Private Partnership Exploration

1

Build from the **Financial Plan** component of the AMP which will:

- Address projected growth, funding needs and sources, and any proposed changes to lease rates or user fees.
- Identify gaps in revenue and provide a foundation for how to fill those gaps (a financial model or proforma).

2

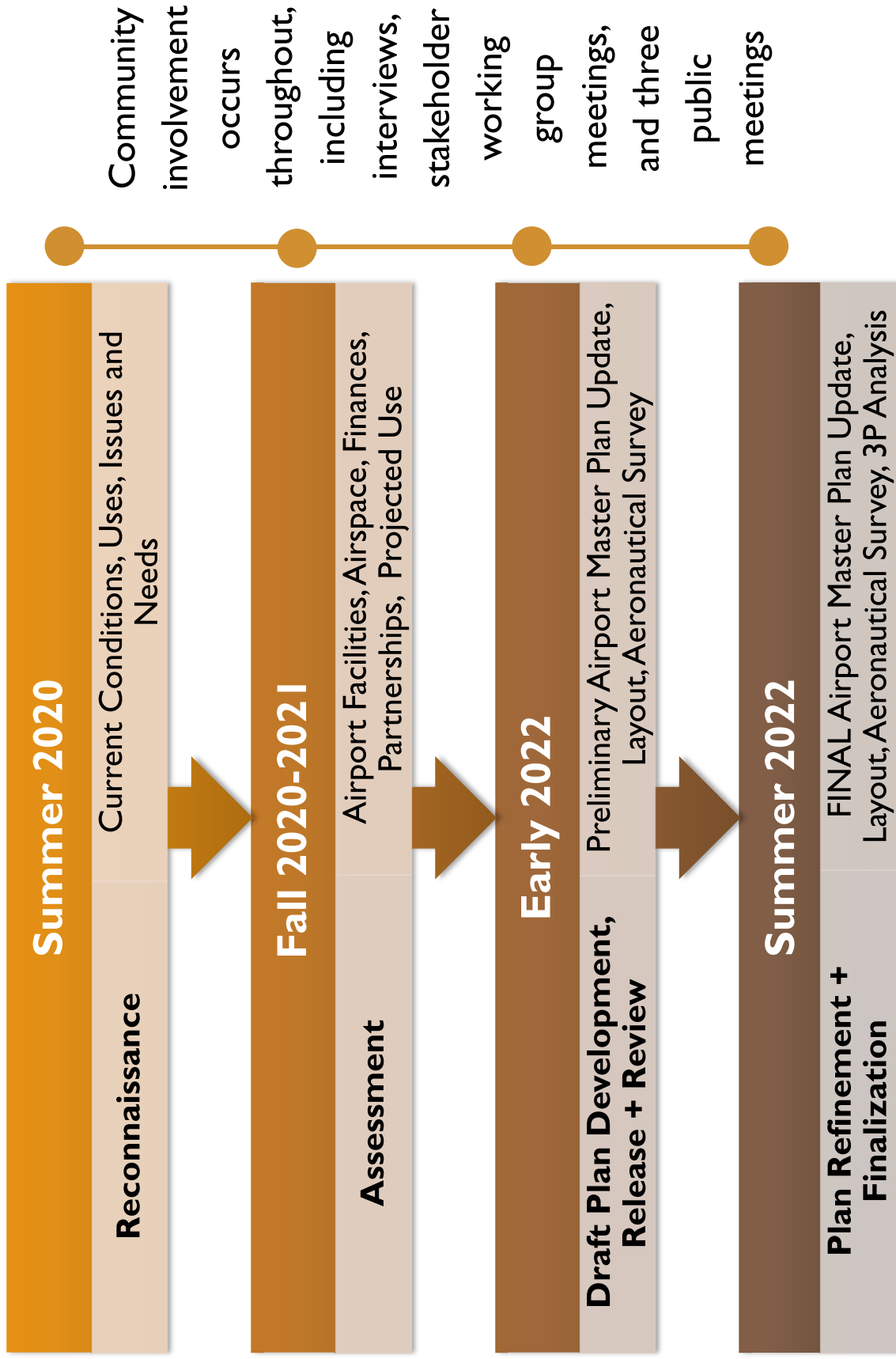
Determine **possible management options** for a **possible public-private partnership** (“3P”) between DOT&PF and any other 3rd party interest.

3

Compare management options and prepare a detailed **Strengths, Weaknesses, Opportunities and Threats** and **feasibility analysis of a privately managed airport**. This analysis will:

- Consider financial and other information about each management option as it relates to the AMP Vision and Goals.

Birchwood AMP: Our Timeline



Immediate Next Steps

- Post Stakeholder Advisory Group #2 and Public Meeting #2 recordings and notes.
- Develop and distribute survey – the survey will give everyone a chance to share their levels of support for the different alternatives.
 - Launch – early to mid-November and open for at least 30 days.

Learn More & Contact Us

For the Birchwood Airport Master Plan Update

<http://www.dot.state.ak.us/creg/birchwoodamp/>

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Email: jessica.wuttke-campoamor@alaska.gov

Phone: 907-269-0519

Shelly Wade, Public Involvement Lead

Email: shelly@agnewbeck.com

Phone: 907-242-5326

For Airport Operations:

Kayce Eliason, Airport Manager

Email: kay.eliason@alaska.gov

Phone: 907-338-1466

Alaska Department of Transportation and Public Facilities

Birchwood Airport Master Plan (AMP) Update:

Public Meeting #2 – NOTES



October 27, 2021; 6:00 – 8:00 pm

Project Team

- Alaska Department of Transportation & Public Facilities (DOT&PF): Jessica Wuttke-Campoamor (Birchwood AMP Project Manager), Shawn Gardner (Anchorage Area Planner)
- Federal Aviation Association: Jonathan Linqvist
- Project Consultants:
 - HDL Engineering Consultants: Mark Swenson (Consultant Project Manager)
 - Agnew::Beck Consulting: Shelly Wade (Public Involvement, Land Use and 3PLoad), Aubrey Wieber

Participants – please see list at the end of this document

Meeting Overview

- This is our second of three public meetings.
- We have also held two Stakeholder Advisory Group meetings and will hold a third in 2022.
- This meeting is to update the public on progress made since our last meeting in March.

Project Overview – **Slides 5-13**

- We are updating the 2005 Birchwood Airport Master Plan.
- This plan will look at surveying users for existing issues and desired amenities, future land use in the area, fixing existing issues, exploring future partnerships.
- We are in the “Fall 2020-2021” phase. We expect to complete the project in Summer 2022.
- We recently uploaded an FAQ, a Financial Assessment and an Aviation Forecast to the “project documents” section of the [website](#). The Financial Assessment does not breakdown property taxes or other local taxes, and whether any of that money goes to the airport.

Financial Assessment – **Slides 14-23**

- This assessment includes operations expenses, revenue, profit, and comparisons with other airports. None of the comparisons are perfect, as the data available has gaps in it. This assessment is based off the most comprehensive data available.
- The revenue breakdown for 2015 and 2016 is not available, likely because it was not tracked by category at that time.
- **Representative Ken McCarty:** It’s my understanding that all funds that come into the state are not designated. They are all captured and go into the CVR, and then are designated at the will of the Legislature and cannot be used for future operations.
 - **Jessica Wuttke-Campoamor:** There is a caveat to that. All monies made on an airport must be used at an airport. Because this is a network of airports, it can be used within the system.
 - **Representative Ken McCarty:** But that violates the state constitution.
 - **Jessica Wuttke-Campoamor:** The congressional mandate supersedes state law.
- **Mark (participant):** Do "expenses" include capital improvements?
 - **Mark Swenson:** Expenses in the assessment do not include large, FAA-funded capital projects, but they do include smaller expenses. However, the columns “Capital Outlay” and “Facilities” are a bit of

a mystery. We don't believe capital projects are included in this, but maintenance of capital projects is.

Land Use Assessment – Slides 24-31

- The land the airport resides on, as well as the adjacent land, is predominantly zoned for industrial and low-density residential. There are no planning documents that propose significant changes to zoning or use of any of this land.
- Eklutna, Inc., is the largest nearby landowner.
- Expansion opportunities are really limited to southern expansion as the rest of the boundaries are constrained by Cook Inlet and the railroad.

FAA Framework and Context – Slides 32-34

- The FAA approves the forecast and critical aircraft determination, which largely dictates what improvements the FAA will pay for.
- Birchwood has received \$8.3 million in FAA Airport Improvement Program funds over the last 10 years.
 - That is an average of \$214 million each year.
- Projects at Birchwood must compete with all other airports for AIP funds.

Aviation Forecast & Alternatives – Slides 35-43

- The Aviation Forecast was based on data recorded by a General Audio Recording Device.
- This data was recorded between July 21 and August 16, 2020, and September 2 and October 2, 2020.
 - In general, it is very difficult to get this data. While these two samples are small time periods, the data is relatively rich compared to what is normally available.
- **Representative Ken McCarty:** When you say the tie-downs are full, are you just looking at DOT-owned tie-downs, or all of them? How many are there in total?
 - **Mark Swenson:** I don't have that right off hand. It gets a little tricky when you consider tie-downs on private lease lots, but yes this is just DOT tie-downs.
- **Lars Gleitsmann:** How many tie-downs were removed during repaving?
 - **Mark Swenson:** There were tie-downs that were removed due to widening of taxiways. They also were spaced out a little wider. If you want to discuss this further, we can do it offline.
- **Dennis Serie:** When they did the repaving, the original tie-downs were too short, and you couldn't tie your tail down properly. So, they did widen it, but that was something we brought up several times.

Alternatives

- We have four alternatives, the first being a “no-build” alternative where the layout remains the same.
- The biggest difference between the four alternatives is changes to the gravel ski strip. This is because a center portion of Taxiway A is where the gravel ski strip is located. This makes the full runway ineligible for FAA maintenance funds.
- We all agree that a longer and wider runway is better than a shorter or narrower runway, however, construction projects using AIP funds, the project must meet the needs of the designated critical aircraft, and not exceed the needs.
 - We as planners must consider that in updating the Master Plan.
- **Alternative One:** This is a “no build” alternative. This is an option. This maintains the existing runway in the existing configuration.
 - However, this could be an issue as parts of the configuration are not eligible for AIP-funded maintenance.

- **Alternative Two:** This is a “build” alternative but maintains the use of the current runways. It removes the in-line taxiway to improve safety. The gravel strip remains in the current location, and land is acquired in the east and south to allow for additional lease lots. This includes a reduction in length and width to meet FAA thresholds. This reconfigures taxiways to ensure there is always access to the main runway or gravel runway.
 - The land that would need to be acquired is Eklutna, Inc. land.
 - This includes a restroom at all of the parking areas.
 - This alternative is closest to the existing layout while addressing the inline taxiway.
- **Alternative Three:** This alternative moves several taxiways around.
- **Alternative Four:** This is the “Cadillac” alternative and has a lot of drawbacks. However, we felt it was worth considering how the airport would operate if the gravel ski strip was relocated to allow for 700 feet between two runways to allow for simultaneous operations.
 - We understand users might not like the idea of simultaneous operations, but it would increase the capacity of the airport.

Alternatives Discussion

- **Representative Ken McCarty:** The airport is an alternative for many purposes. I am very concerned about food security in Alaska. If we reduce access for larger planes, that will cut Birchwood off as a location for food drops to come in during an emergency.
 - **Mark Swenson:** These are real life considerations. I agree, if the bridges go down, the airport will serve a critical need. The problem is the one funding avenue we have always relied upon is the FAA, and the FAA has funding requirements. One thing the FAA says is that military operations cannot be considered in the forecast for operations at an airport. The funding is where we get wrapped around the axel. Trying to reconcile funding requirements with issues like what you brought up is the challenge.
 - **Jonathan Linquist:** That is correct. You cannot use military use as part of critical aircraft designation. There are a lot of airports in the state that wish they had the potential to bring in larger aircraft in the event of an emergency. Unfortunately, the FAA has a pretty hard and fast threshold of 500 annual operations to be considered.
 - **Representative Ken McCarty:** With supply chain issues, we right now have planes coming into Ted Stevens to drop off goods. There are discussions about where other sites are that can handle larger planes.
 - **Mark Swenson:** That is all understood. In that case, is there other revenue from the state that can be used to maintain existing airport dimensions?
 - **Jonathan Linquist:** The fact that reconstruction would require a reduction of the runway, that is something that is likely not going to happen anytime soon. If there was an overlay, that is a different story.
 - **Jessica Wuttke-Campoamor:** DOT is willing to partner with an agency or entity that wants to pay the costs that FAA will not cover, but they need to agree in perpetuity to fund annual maintenance, which would be millions of dollars.
- **Mark:** What is the capacity of the runway? How far or close do the current forecast come to exceeding it?
 - **Mark Swenson:** The single runway configuration, considering the main runway and gravel ski strip effectively act as one runway, based on the data we have is not at capacity yet. The need for a parallel runway is not dictated by capacity, it’s dictated by use of the gravel runway. This is probably one of the only areas where state airport has gravel strips. Justifying the use is something the FAA is just starting to hear about. People love these ski strips, but they are not used in other parts of the country.

- **Abe Harman:** Could the whole length of Taxiway A be made gravel ski strip?
 - **Mark Swenson:** There would still be an AIP eligibility issue with the length of that runway, so it is likely not viable. It is more length than is needed, according to FAA.
- **Lars Gleitsmann:** You ought to talk about the RPZs more.
 - **Mark Swenson:** There are issues with the existing RPZs, which can be seen in the “no build” alternative.
- Are you considering costs versus income and expenses for the alternatives?
 - **Mark Swenson:** Once we identify a preferred alternative, we will do a deep dive on the cost of the alternative. Alternatives two and three also have increased revenue generating expenses. Alternative four would have the highest capital, maintenance, and operations expenses.
- **Val Jokela:** I would like to see a safety analysis for each of these alternatives as well.
 - **Mark Swenson:** We will run through some of that in a sec with the pros and cons analysis. As we move forward with a preferred alternative, we can look at that in greater detail.
- **Abe Harman:** I did not see the 300ft part listed in AC 150/5300-13A though. I only observed 700ft for simultaneous ops. Can I get a reference for where to research this 300ft portion?
 - **Jessica Wuttke-Campoamor:** The 300' separation is in the proposed 150/5300-13B.
- **Val Jokela:** I don't want us to get locked into just these four alternatives. There is a lot of knowledge and experience out there. It seems like these have all been decided by a small group.
 - **Shelly Wade:** There has been a robust outreach process to talk with users, tenants, etc., and that will continue, including with an alternatives survey.

Next Steps and Wrap Up – Slides 44-49

- We will post the presentation and notes after this meeting.
- We will create a survey for users to weigh in on the alternatives.
- We have additional SAG and Public Meetings planned for 2022.

Meeting Chat

18:12:15 From Thomas to Everyone:

- What is the initial problem statement?

18:12:55 From Aubrey Wieber to Everyone:

- Hi Thomas, the update of the plan is being driven largely by timing. The current plan is from 2005, so it is due for an update.

18:16:30 From mark to Everyone:

- Do "expenses" include capital improvements?

18:17:57 From Aubrey Wieber to Everyone:

- This Financial Assessment can be accessed here
<https://dot.alaska.gov/creg/birchwoodamp/docs/Birchwood-AMP-Financial-Assessment-Final-May-2021.pdf>

18:24:50 From Dave Swartz to Everyone:

- Maybe answer in chat is fine with me not to disrupt conversation, but the Capital is only the State Capital, not including AIP funds correct?

18:31:47 From Lars to Everyone:

- You did go over that one slide too quickly.

18:33:20 From Abe Harman to Everyone:

- Seems the current Birchwood financial model of low on-site staffing and not a lot of unnecessary expenditures is outstanding. Lower expenses and higher revenue than the comparable airports.

18:36:14 From Thomas to Everyone:

- Am I reading that right, Birchwood is $8.3/(214 \times 10)$?

18:36:30 From Shelly Wade, Agnew::Beck to Everyone:

- Thanks, Lars - we can come back to those land use pieces when we dive into the alternatives (re: expansion opportunities).

18:37:16 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Thomas, Birchwood has received \$8.3M over the last 10 years.

18:38:07 From Thomas to Everyone:

- So, the math works out to .0038% of the 10 year funding, right?

18:38:44 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Correct.

18:40:32 From Lars to Everyone:

- Why was that device not used over a longer time period? Why was it used in That Rainy Season? The results would have been way, way different if it would have been used in May June and early July!!!

18:40:55 From Abe Harman to Everyone:

- Technically .38% when you carry the decimal to convert to a percentage. But I get where you are coming from, Thomas.

18:43:30 From Lars to Everyone:

- How many Tie downs existed Before the re-paving affair with the way too wide spacing??

18:45:06 From Lars to Everyone:

- It's pretty easy to figure out with older photos of the airport! - I will count them in old pictures!

18:45:27 From Thomas to Everyone:

- Thanks (1/3 of 1%). What was the tie down count in 2000?

18:47:02 From Tom George (AOPA) to Everyone:

- Was the GARD system described also used to derive the traffic counts reported from Wasilla and Soldotna?

18:47:31 From Dave Swartz to Everyone:

- For John: One of the concerns that a LOT of us have that is present in all the options is the shortening of the main runway by about 1,000 feet. There are two primary objections to shortening/narrowing it.

- 1) We do get other larger and faster airports here, but there are not officially based here because they are training flights, or come and go for maintenance. In the event of problems, engine failures, students being slow powering up on a go around introduces extra risk in operations. Runway behind you does you no good...
- 2) Gliders are one of our user groups and their wing span is such that narrowing the runway will mean they will take out the runway edge lights frequently.
For AIP funding, If the runway is narrowed, we disenfranchise one of our user group. Is leaving the asphalt like it is and having the AIP pay for any repaving of the first 3000 ft and the state pay for the other 1000 a viable option.

18:49:05 From Lars to Everyone:

- The Tiedowns were beyond the wingtips of the airplane types present!

18:49:13 From Rob to Everyone:

- The tiedowns in the 2015 Master plan 430.

18:49:15 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Tom George, no, it wasn't.

18:50:25 From mark to Everyone:

- What's the capacity of the runway system? How far/close do the forecast operations come to exceeding it?

18:51:00 From Rob to Everyone:

- 430 tiedowns in the 2005 Master Plan.

18:51:59 From Abe Harman to Everyone:

- Could the whole length of taxiway alpha be made a gravel/ski strip? Would that remove the restriction?

18:52:21 From Lars to Everyone:

- Very Good Point Abe!

18:53:22 From Dave Swartz to Everyone:

- That does seem like a good option, but what length would the FAA support with AIP funds?

18:53:57 From Rob to Everyone:

- There have been no incidents or accidents with the Ultralight, gravel/ski strip so how is it a safety hazard?

18:54:02 From Lars to Everyone:

- They just need to stop plowing the snow there....

18:55:16 From mark to Everyone:

- Do forecasted ops reach 65% of the capacity of the runway system within the planning period?

18:56:43 From Thomas to Everyone:

- What size aircraft warrants FAA participation in a 4K x 100' runway?

18:58:19 From Lars to Everyone:

- This version as drafted here would further reduce the number of tiedowns!!!

18:59:51 From Abe Harman to Everyone:

- I think it would be good to clarify that if option one was to eliminate taxiway A entirely and designate the full length as gravel/ski strip, that that would remove the funding restriction.

19:00:42 From Lars to Everyone:

- I think it would be proper if some more comments of actual airport users would be allowed in this "public Forum"

19:00:54 From Abe Harman to Everyone:

- When not being used by landing or takeoff traffic it can still be taxied on. Functionally the same. But reconfigured to meet the rule.

19:01:15 From Lars to Everyone:

- Very Good point Abe!

19:02:35 From Dave Swartz to Everyone:

- If that works, even if the length exceeds the AIP funding limits for runway length, not much maintenance is necessary, an occasional drag or grader pass.....

19:03:04 From mark to Everyone:

- Have you considered an alternative access to the airport from the southeast?

19:05:57 From Lars to Everyone:

- So, the RPV Zones around each approach end of each runway ... You ought to talk about those a bit more.

19:06:42 From Abe Harman to Everyone:

- We could also move the South Threshold of the runway North 100 feet instead of reducing all 700 feet from the North end. Then the RSA would be good even in the current airport boundary.

19:06:43 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- The septic system replacement is tentatively scheduled for this coming summer.

19:07:21 From Lars to Everyone:

- The Septic of the ONLY public bathroom has now been out of action for how long?

19:07:58 From Rob to Everyone:

- The Airport Association is working to get that Septic System repaired as we speak. It has not been working most of this year.

19:08:15 From Dave Swartz to Everyone:

- The area in the southeast needs to be re-laid out with hangar shapes and airplane access in mind.

19:08:34 From Dave Swartz to Everyone:

- Lot shapes are not conducive to access to hangar doors.

19:08:56 From Lars to Everyone:

- Very good points Dave!

19:08:59 From Rob to Everyone:

- Good point Dave that looks like it's made for cars.

19:09:06 From Dave Swartz to Everyone:

- Connection is unstable, hard to hear.

19:10:08 From Lars to Everyone:

- If those of us that are not talking stop our videos the audio should get better!

19:10:39 From mark to Everyone:

- Will FAA participate in the costs of the improvements to the SE apron only if DOTPF pays for the access road which also provides access to the shooter park?

19:12:38 From Dave Swartz to Everyone:

- We currently have patterns on both sides, just only for ultralights on the east.

19:13:00 From Abe Harman to Everyone:

- And helicopters. I guess that's normal though.

19:13:08 From Jeffrey Banks to Everyone:

- Alternative 4 Where is the segmented circle and windsock?

19:13:35 From Dave Swartz to Everyone:

- Not in favor of the new runway alignment, don't think the benefits of the parallel operations is outweighed by the down sides.

19:13:44 From Lars to Everyone:

- The Ultra Lights are almost completely gone for 10 years now, nobody uses any pattern to the East, that is why our residential areas are happy with us...

19:14:10 From 70 North to Everyone:

- Is there a cost vs income/revenue assessment been provided for alternatives 2/3/4

19:16:03 From Rob to Everyone:

- The east side pattern is also being used by helicopters now. Also, the winds are different many times at the southeast area from the north side of the airport. so where will the windsocks be for Alt 4. Also, Jeff makes a good point!

19:17:38 From mark to Everyone:

- Constructing the airport to meet the design standards of the critical aircraft does not preclude larger aircraft from operating there.

19:17:44 From Lars to Everyone:

- When Redoubt Volcano blew a decade ago, ash fell in ANC and Many commercial Twins and Turboprops landed in BCV that day, etc.

19:18:51 From Dave Swartz to Everyone:

- From a practical perspective, where may the funding come from to purchase the Eklutna land, does that need to be State Appropriated funds?

19:19:34 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Dave Swartz, property acquisition is considered AIP eligible as long as the development associated with the acquisition is AIP eligible.

19:19:46 From Lars to Everyone:

- The last big earthquake came really very close to doing much more damage, the emergency use issues here are very real, much more so than in the lower 48.

19:24:12 From Abe Harman to Everyone:

- Is there any accommodation that can be made in light of how overwhelmingly profitable we are?

19:24:37 From Lars to Everyone:

- Those of you that are gainfully employed in this Master Plan process should really consider to come visit with us, the actual airport users at the airport and also go fly and see it from the air for yourselves... I think That would help.

19:26:03 From mark to Everyone:

- Good question for Northern Econ to look at but freight operators need to co-locate with other freight operators to facilitate freight transfers, like at ANC. Economic potential for a freight operator(s) at Bwood probably very small.

19:27:06 From Lars to Everyone:

- If a glider hits a light with the wing at speed it will total the glider...

19:28:07 From Abe Harman to Everyone:

- Just a side note. We do have half a dozen Piper Navajo's based on the field for maintenance as well.

19:28:25 From Brian Walch to Everyone:

- Gliders support CAP training, which is an important program... does that get considered? Even though gliders don't qualify as critical aircraft?

19:28:34 From Abe Harman to Everyone:

- I know they don't hit that 500 operations limits, but we do have class B aircraft based on field.

19:29:03 From Jeffrey Banks to Everyone:

- A nice green grass infield would be the best wingspan solution for the gliders.

19:29:37 From Lars to Everyone:

- A nice green grass infield - will be expensive.

19:33:19 From Lars to Everyone:

- So we clearly have needs here that exist: How can it be that every single issue at hand is just always wiped with "AIP funding" ???

19:33:25 From Abe Harman to Everyone:

- I think the beauty is it wouldn't really cost much.

19:35:45 From Lars to Everyone:

- The Length of the Gravel Runway ski-strip is A SAFETY factor, not a detriment. Some in the lower 48 may see it as a detriment, but they have never done ski-flying instructions!

19:36:45 From Abe Harman to Everyone:

- I think NO BUILD option should also include a 02L runway threshold displacement of 100ft as well to make sure it meets the requirements.

19:37:43 From Lars to Everyone:

- Are you aware that the issue is only created by moving the ski/gravel runway to the middle of the main runway?

19:38:14 From Abe Harman to Everyone:

- For RSA anyway, understood RPZ will still go outside boundary.

19:41:10 From gabej to Everyone:

- 02R does extend to even with the threshold of 02L so that would not be in conflict but you would still have a conflict of the RPZ to the northeast apron.

19:42:04 From Dave Swartz to Everyone:

- As a comment, It would be good to have some gathering place to aid in community engagement. One idea is on the raised area on the east side not far from where the small wind sock is on the east side.

19:43:21 From 70 North to Everyone:

- How do you reach a preferred alternative without cost/revenue projections?

19:43:38 From Lars to Everyone:

- Dave Swartz; The raised area of the southwest corner of the North East Apron would be ideal for that. But what would the FAA say about something like that?

19:45:50 From Dave Swartz to Everyone:

- Into the chat because of bandwidth problem. On the west side, their access road extension past Nick Opegaurds Hangars will likely run into grade and fill issues.

19:46:00 From mark to Everyone:

- Thoughts toward developing a business plan for Bwood?

19:47:04 From Aubrey Wieber, Agnew::Beck to Everyone:

- Hi all, while this is a lot to digest, please remember that there is a project website with these assessments. Additionally, the meeting presentation and notes will get posted to the website.
<https://dot.alaska.gov/creg/birchwoodamp/>

19:48:19 From Lars to Everyone:

- Birchwood is perfectly fine with No simultaneous operations!!! So that is not what should constantly be argued. Financially Viable and necessary should be what counts.

19:48:33 From Abe Harman to Everyone:

- I think it's important to understand that the 700ft requirement is for SIMULTANEOUS operations, which has been identified as not needed at Birchwood due to volume of operations.

19:48:58 From Abe Harman to Everyone:

- It's more an issue of offering a variety of surfaces for different aircraft types, not a need for simultaneous operations.

19:49:02 From Jeffrey Banks to Everyone:

- Please define simultaneous operations. The FAA supplement referees to parallel operations.

19:49:03 From Lars to Everyone:

- Exactly as Abe said.

19:49:15 From Dave Swartz to Everyone:

- Agree, as a design constraint, we should not include simultaneous operations

19:49:45 From Lars to Everyone:

- The 300 feet story is new!

19:49:45 From Rob to Everyone:

- No simultaneous ops are allowed at BCV.

19:49:50 From Dave Swartz to Everyone:

- As a comment, ski strip parking needs to have snow covered access to the ski strip.

19:50:51 From Abe Harman to Everyone:

- FAA advisory circular AC 150/5300-13A defines the spacing requirement.

19:51:00 From Lars to Everyone:

- How about giving the actual users of this airport more of a voice?

19:53:01 From Lars to Everyone:

- The old Master plan called for more tiedowns and yet DOT keeps reducing the numbers of Tiedowns and there is no money to buy land to the south: etc.

19:53:08 From Robert Kelly to Everyone:

- When would construction begin on whichever of these alternatives are approved?

19:53:14 From Abe Harman to Everyone:

- I did not see the 300ft part listed in AC 150/5300-13A though. I only observed 700ft for simultaneous ops. Can I get a reference for where to research this 300ft portion?

19:54:11 From 70 North to Everyone:

- Why is closing the gravel strip not an alternative? And if it was closed how does that change AIP funding matrix?

19:54:20 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Abe, the 300' separation is in the proposed 150/5300-13B.

19:54:36 From Lars to Everyone:

- Closing the gravel strip?

19:54:36 From Shelly Wade, Agnew::Beck to Everyone:

- Abe, the 300' separation is in the proposed 150/5300-13B.

19:55:06 From Abe Harman to Everyone:

- So that means it's not in there currently?

19:55:09 From David Baldwin to Everyone:

- Would hope that the proposed Transit and car parking is not put in harm's way, in line with the runways. The recent MD-87 excursion into a pasture a good example, that would have been worse, if such items were in its way... we also had gliders forced to release and land beyond the runway, and an aircraft lose power and flip in the general area of the proposed transit parking recently....

19:55:16 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Abe, correct.

19:55:22 From Abe Harman to Everyone:

- That would explain why I didn't see it.

19:55:23 From Abe Harman to Everyone:

- Thanks.

19:56:07 From Lars to Everyone:

- As I said: That 300 feet deal I have never seen or heard of.

19:58:57 From Lars to Everyone:

- Well, Birchwood Airport Assn collected and documented more opinions from more airport users than DOT did.

19:59:09 From Abe Harman to Everyone:

- I think it would be cool if the users could propose their own alternative, and we could discuss feasibility of implementing that plan with regard to regulatory requirements, AIP fund restrictions, etc.

20:00:12 From Lars to Everyone:

- Shelly Wade, you really need to use better internet access for these Zoom meetings. It's a real issue.

20:00:32 From Gabe Niesen to Everyone:

- 100% agree Abe. May be like herding cats but knowing the constraints we're working within I think the users could come up with a compelling plan.

20:01:30 From Tom to Everyone:

- The gravel runway is critical for those of us with tundra tires and skis

20:02:20 From Lars to Everyone:

- Gravel Runway and Ski-strip is crucial also for flight Training in this area.

20:02:30 From Rob to Everyone:

- Yes I tried to login at 4 mins early and the meeting would not load either from my Zoom or the project page and kicked me off three times, thus I dialed in late.

20:02:41 From Brian Walch to Everyone:

- Is there an email list? I heard about this from a Facebook group, but I don't always check Facebook. Best way to stay informed?

20:03:11 From Lars to Everyone:

- Best way to stay informed? join Birchwood Airport Assn.

20:03:22 From Jessica Wuttke-Campoamor, DOT&PF to Everyone:

- Brian, please email Shelly or me and we'll get you added. Jessica.wuttke-campoamor@alaska.gov.

20:03:33 From Brian Walch to Everyone:

- Great, thanks!

20:03:57 From Robert Kelly to Everyone:

- I am a member of Birchwood Airport Association but have not heard anything from them...

20:04:27 From Lars to Everyone:

- Robert Kelly update your info with us

20:04:33 From Rob to Everyone:

- birchwoodairportassociation@gmail.com to join or use Facebook and go to our page.

20:04:42 From Robert Kelly to Everyone:

- I have several times...

20:05:03 From Robert Kelly to Everyone:

- Don't and won't use Facebook.

***Note: The chat has been preserved to reflect an accurate depiction of the meeting.**

Participants – *Note: The attendance list reflects how meeting participants identified themselves on Zoom during the meeting.

Abe Harman	Lambert De Gavere	Rob
Ben Herning	Lars Gleitsmann	Robin D.
Brian Walch	Matt Freeman	Steve
Dave Swartz	Matthew Hansen	Thomas
David Baldwin	Paul Schneider	Tom
Della Swartz	Representative Ken McCarty	70 North
Dennis Serie	Robert Brennan	(303) 907-8541
Gabe Niesen	Robert Kelly	(907) 230-9425
Jason Wells	Tom George (AOPA)	(907) 301-9137
Jeffrey Banks	Val Jokela	(907) 644-0673
Jim Somerville	Debra	(907) 830-1996
Kimberly Collins	Mark	

Heather A. Campfield

From: Shelly Wade <shelly@agnewbeck.com>
Sent: Wednesday, November 9, 2022 12:20 PM
To: Shelly Wade
Cc: Miles, Philana C (DOT)
Subject: REMINDER & NEW MATERIALS! BCV Airport Master Plan Update - Public Workshop - Saturday, Nov 12, 10A-2PM
Attachments: 11-12-22_Birchwood AMP_Public Mtg #3_Agenda.pdf; Nov2022_BCV_AMP_Update_Runway2R-20L_Alternatives1-4.pdf; 11-12-22_BirchwoodAMP_WhatsChangedwAlternativeLayouts.pdf

Good afternoon, everyone –

We look forward to seeing you all in person at the **Civil Air Patrol in Birchwood, this Saturday, November 12 for the Birchwood Airport Master Plan Public Workshop**. Important/related information:

1. Structure of the Meeting – You don't have to attend all four hours! **You can come and go as your schedule allows**. Please see attached agenda (also available [here](#)) for more details.
2. New Materials Available NOW – Attached and linked on [the project website](#), please find:
 - a. The 11/12/22 [public workshop agenda](#).
 - b. An explanation of “[What's Changed with the Layout Alternatives](#)” since the last public meeting in October 2021. **REMINDER:** We used feedback from [the stakeholder survey](#) and previous Stakeholder Advisory Group and public meetings to inform the revised alternatives that we will share at the November 12th workshop.
 - c. The [revised layout alternatives](#).

Please contact us with any comments, questions, or concerns. Otherwise – see you Saturday!

Best,

Shelly Wade, Public Involvement Lead

907.242.5326 Cell (call or text) | shelly@agnewbeck.com

Dena'inaq elnen'aq' gheshtnu ch'q'u yeshdu. (Dena'ina) *I live and work on the land of the Dena'ina. (English)*

Translation by J. Isaak and S. Shaginoff-Stuart

AGNEWBECK
Celebrating 20 years!

From: Shelly Wade
Sent: Wednesday, November 2, 2022 2:43 PM
To: Shelly Wade <shelly@agnewbeck.com>
Cc: Miles, Philana C (DOT) <philana.miles@alaska.gov>
Subject: Birchwood Airport Master Plan Update - Public Workshop - Join Us! Saturday, Nov 12, 10A-2PM

Join us on November 12th! Visit the project webpage to learn more:

[http://dot.alaska.gov/creq/birchwoodamp/!](http://dot.alaska.gov/creq/birchwoodamp/)



Photo by Anna Bartholome

We have heard you, Birchwood Airport Stakeholders!
Join us in-person to review the revised airport layout alternative.
Tell us – what you like, what you don't like, what ideas you have.

Saturday, November 12th, 2022

**Public
Workshop**

10:00 AM – 2:00 PM

Birchwood Civil Air Patrol
20100 Birchwood Spur Rd, Chugiak, AK 99567

Persons with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD), 907- 269-0473.

We are also able to offer, upon request, Alaska Native Language Translation.

About the Birchwood Airport Master Plan (AMP) Update

The Alaska Department of Transportation and Public Facilities (DOT&PF) is updating the Birchwood Airport Master Plan. The updated Airport Master Plan will outline **how the airport can best serve the future interests and needs of the flying public, aviation community, DOT&PF, and other stakeholders.**



About the November 12th Meeting

Join DOT&PF, Federal Aviation Administration, and the rest of the project team, to review revised airport layout alternatives that build from the [over 100 responses we received on the Birchwood Airport Stakeholder Survey.](#)

Questions about the project?

Contact the DOT&PF Project Manager
Philana Miles, C.M.
Phone: 907-269-0516
Email: philana.miles@alaska.gov

Questions about the location and/or purpose of the meeting?

Contact the Project Public Involvement Lead
Shelly Wade
Phone: 907-242-5326
Email: shelly@agnewbeck.com

Proposed Reader Board Text for Birchwood Airport Master Plan Update Charette, 11-12-22

Guidelines (from Jessica)

- It looks like 10 or 12 characters per line
- 3 lines per screen
- Up to 3 or maybe more screens per sequence
- Time of each display is adjustable

Proposed dates and times: Starting Monday, October 31st, through November 12th, 8 am – 6 pm

If 10 characters:

B	I	R	C	H	W	O	O	D	
A	I	R	P	O	R	T			
P	L	A	N						

S	C	E	N	A	R	I	O	S	
W	O	R	K	S	H	O	P		
N	O	V		I	2	T	H		

D	E	T	A	I	L	S		@	
D	O	T	.	A	L	A	S	K	A
.	G	O	V						

If 12 characters:

B	I	R	C	H	W	O	O	D			
A	I	R	P	O	R	T					
M	A	S	T	E	R		P	L	A	N	

A	L	T	E	R	N	A	T	I	V	E	S
I	N	-	P	E	R	S	O	N			
W	O	R	K	S	H	O	P				

N	O	V	E	M	B	E	R		I	2	
V	I	S	I	T		D	O	T	.		
A	L	A	S	K	A	.	G	O	V		

**Alaska Department of Transportation and Public Facilities
 Birchwood Airport Master Plan Update Public Workshop #3**



When & Where

- Saturday, November 12, 2022, 10:00 AM to 2:00 PM
- Birchwood Civil Air Patrol, 20100 Birchwood Spur Rd, Chugiak, AK 99567

Objectives

- Confirm project purpose, schedule, progress, and next steps.
- **Share and get public input on the revised airport layout alternatives.**
 - What do you like about the alternatives and why? What do you dislike and why?
 - What other ideas do you have that can meet the needs of airport stakeholders today and 10 to 20 years from now?
 - What other comments or questions do you have about the master planning process?

Agenda

Item	Timing
<p>Welcome & Introductions</p> <ul style="list-style-type: none"> • Land Acknowledgement • Birchwood AMP Purpose & Schedule • Workshop Purpose 	<p>10:00 – 10:15 AM</p>
<p>Interactive Workshop</p> <p><i>Structure</i></p> <ol style="list-style-type: none"> 1. We will have three tables or “breakouts” staffed by project team members. 2. Each table will have a different airport layout alternative in poster form for viewing/discussing. 3. You can share your feedback with project staff and/or write it on a post-it and stick it on the layout poster. 4. You can also submit your feedback using a comment form and/or emailing or calling project staff. <p><i>Guiding Questions</i></p> <ul style="list-style-type: none"> • What do you like about the alternatives and why? • What do you dislike about the alternatives and why? • What other ideas do you have that can meet the flying public’s needs today and into the future? 	<p>10:15 AM – 1:45 PM</p> <p><i>NOTE: We will repeat the workshop welcome and introduction throughout the workshop, on the top of hour and as needed to orient work workshop participants.</i></p>
<p>Next Steps & Wrap Up</p>	<p>1:45 – 2:00 PM</p>

Birchwood Airport Master Plan Update

Project No. CFAPT00354/AIP 3-02-0034-008-2018

Public Workshop #3

Prepared for Alaska Department of Transportation &
Public Facilities

*Presented and facilitated by HDL Engineering Consultants &
Agnew::Beck Consulting*

November 12, 2022; 10:00 AM – 2:00 PM



Welcome & Introductions

About Our Team

The Alaska Department of Transportation and Public Facilities is leading the process with assistance from a consulting team:



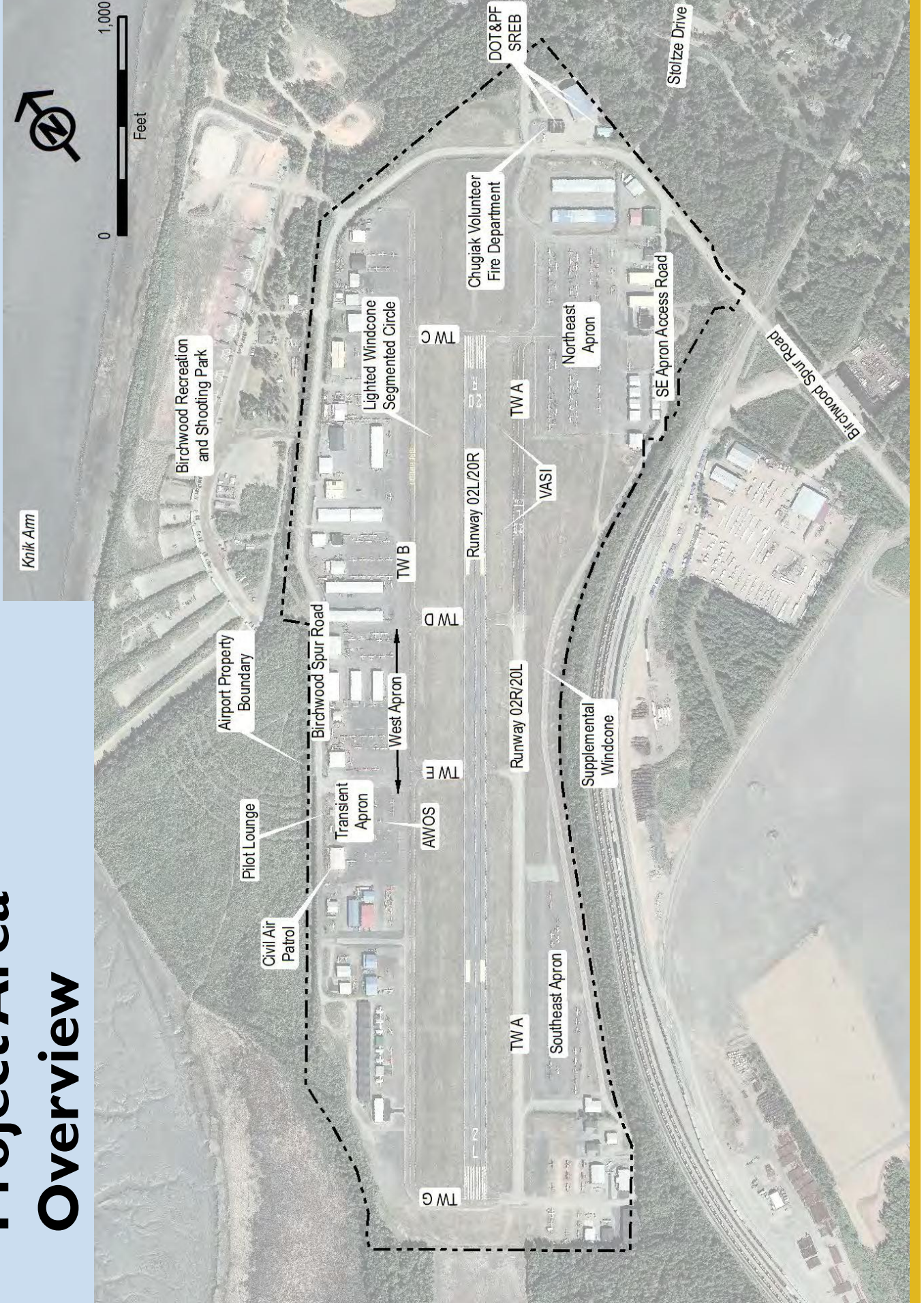
Land Acknowledgement

*Dena'inaq enən'aq'
gheshtnu ch'q'u yeshdu.* (*Dena'ina*)

Translation by J. Isaak and S. Shaginoff-Stuart

*I live and work on the
land of the Dena'ina.* (*English*)

Project Area Overview



Land Ownership

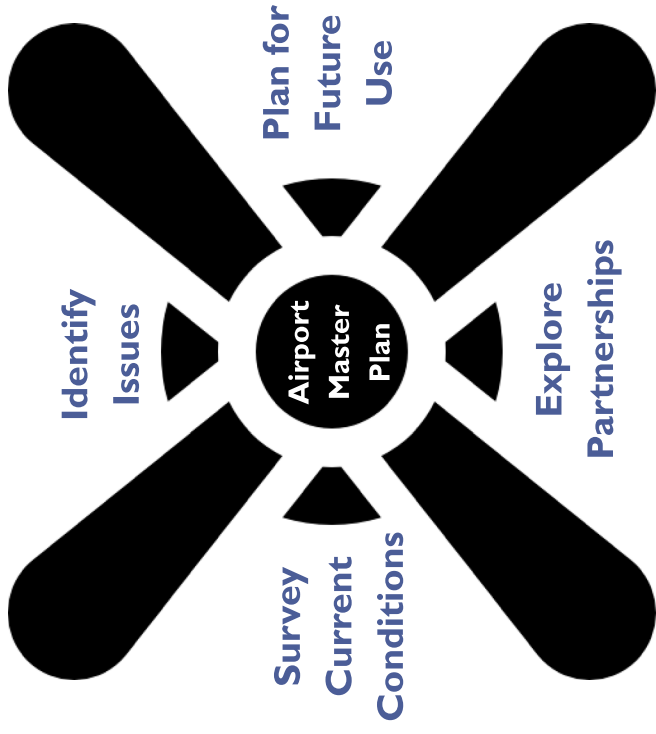


LEGEND

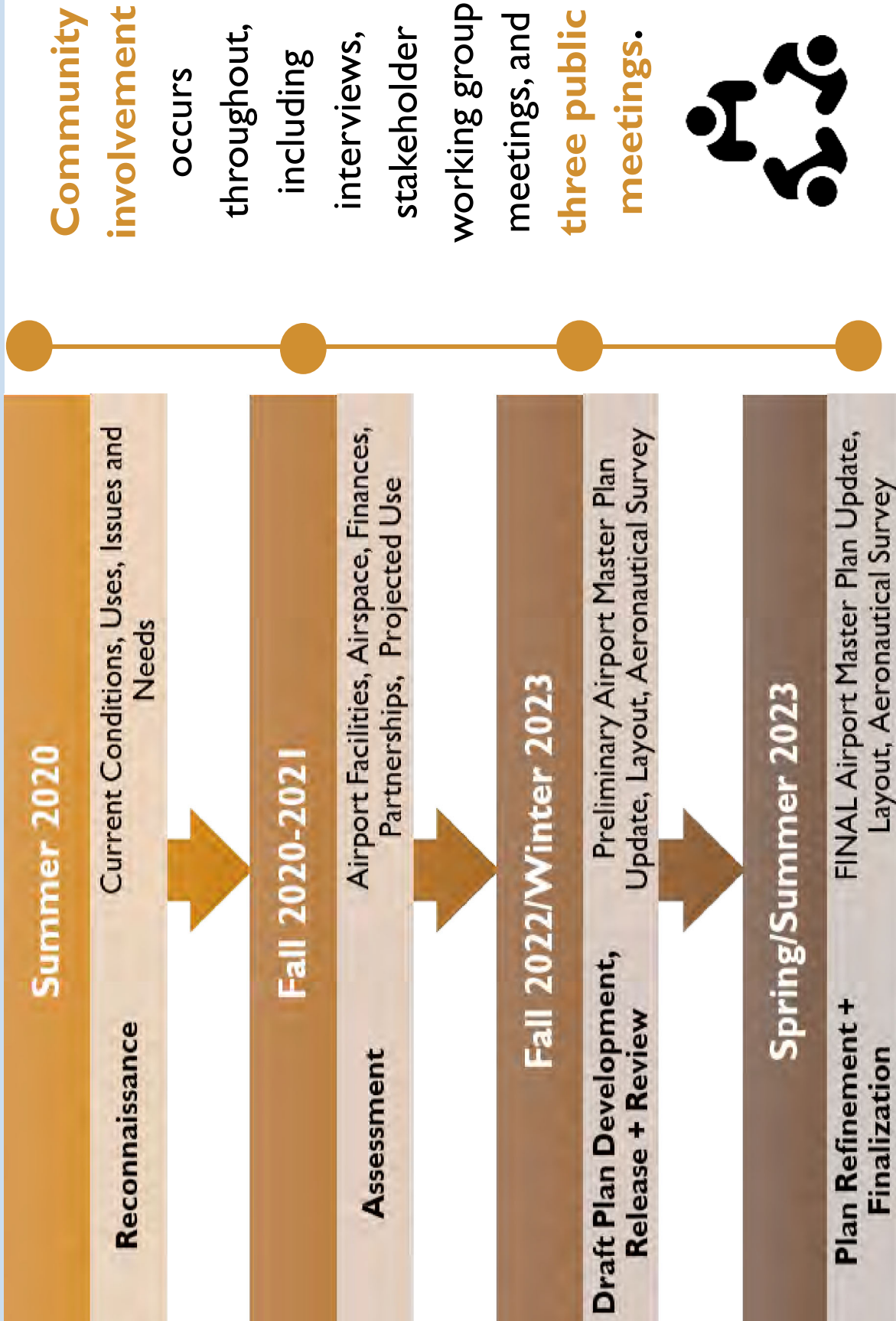
-  STATE OF ALASKA
-  MUNICIPALITY OF ANCHORAGE
-  MUNICIPAL AND STATE PARKS
-  ALASKA RAILROAD
-  EKLUTNA, INC
-  PRIVATE

Project Purpose

To determine how the airport can best serve the future interests and needs of the flying public, aviation community, Alaska Department of Transportation & Public Facilities (DOT&PF), and other stakeholders.



Project Schedule



Stakeholder Advisory Group (SAG)

The SAG is providing feedback on the planning process and draft deliverables:

DOT&PF	Aircraft Owners & Pilots Association	Alaska Railroad	Birchwood Airport Association
Birchwood Civil Air Patrol	Birchwood Community Council	Birchwood Recreation & Shooting Park	Eklutna, Inc.
NOTE: The SAG is not a voting or decision-making body.	Native Village of Eklutna	Talon Hangar Condominium Association, Inc.	

Progress Since October 2021

- **Second Stakeholder Advisory Group and Public Meetings (Fall 2021)**
- **Airport Stakeholder Survey (Spring 2022)**
- **Project Received Additional Funding Based on Public Involvement (Summer 2022)**
- **DOT Decision to Plan for Existing Runway Length & Width (Summer 2022)**
- **Public-Private Partnership Summary**

Meeting Purpose

- Confirm project purpose, schedule, progress, and next steps.
- **Share and get public input on the revised airport layout alternatives.**
 - **What do you like** about the alternatives and why?
What do you dislike and why?
 - What **other ideas** do **you have** that can meet the needs of airport stakeholders today and 10 to 20 years from now?
 - What **other comments or questions** do **you have** about the master planning process?

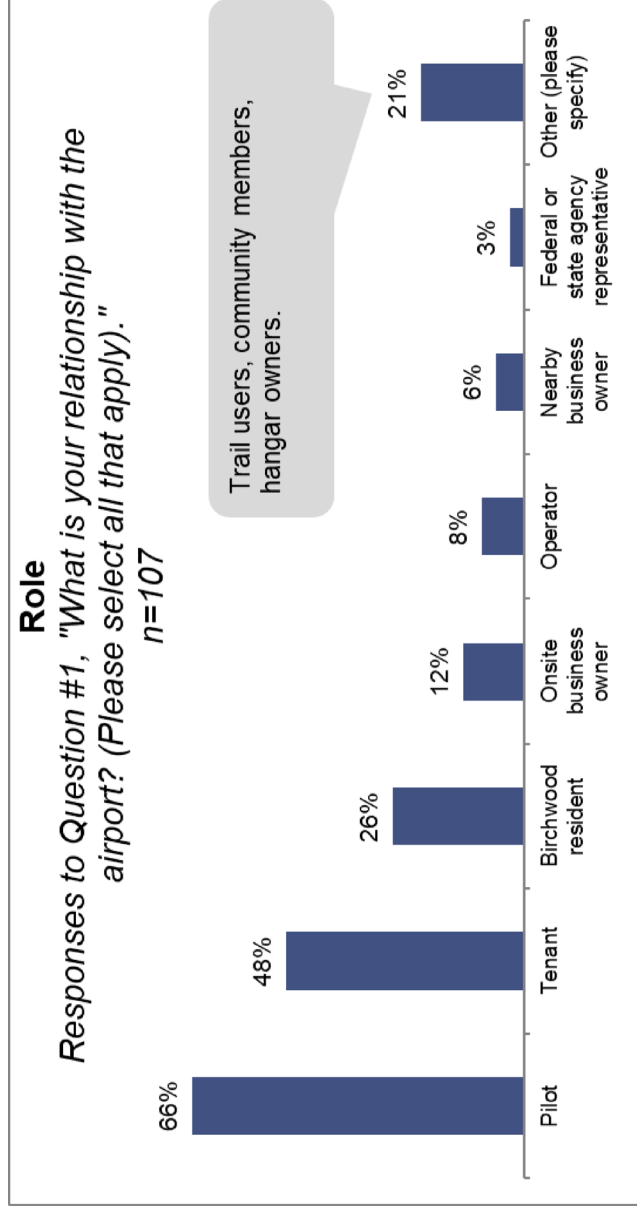
Public-Private Partnership Summary

Emerging Recommendation – Based on research and stakeholder engagement:

- The Birchwood Airport does not have many of the characteristics that make an airport an ideal candidate for a P3.
 - The airport is almost entirely general aviation from hobbyist pilots, and operations are simple enough that they do not require air traffic control or an on-site manager.
 - The Birchwood Airport is one of the few profitable Alaska DOT&PF airports in the state, so there is no financial incentive to privatize.
 - During stakeholder outreach, many airport users said they oppose a P3. They are concerned a private operator would increase fees and commercial activity. Low costs and the casual, uncontrolled nature of the airport are its most beloved attributes.
- For these reasons, **recommendation is to not pursue a P3 arrangement**, unless a specific need is identified.

Stakeholder Survey – Process & Participation

- Goal of the survey was to get additional input on the layout alternatives (as of Fall 2021) and set the stage for this in-person public workshop.
- Survey window was December 18, 2021 through February 4, 2022.
- Fall 2021 Alternatives 2, 3, and 4 showed shortening and narrowing of the runway (02L/20R).
- Over 100 stakeholders responded.



Note: Likely some overlap with pilots and tenants as participants given option to “select all that apply”.

Stakeholder Survey – Key Takeaways

- **Alternative One (no change) had the highest level of support**, followed by Alternative Two, Alternative Three, and Alternative Four.
- **Alternative Two had more support and less opposition**, although many participants advocated for Alternative Four in the short answer response questions.
- A combination of quantitative and qualitative responses indicated that **participants were divided on wanting no or minimal growth versus more robust/extensive growth**. There was little support for moderate growth.
- **Biggest issues:** Runway length/width and positioning of gravel airstrip. Most agree shortening/narrowing a barrier to stakeholder vision.

Leave well enough alone. **Alternative one has worked for many years**, safely and successfully. Plans 2,3,4 are way too complicated, unnecessary, and costly.

"1 AND 2 preserve all winter use of ski strip/parking for straight ski aircraft. 2 Will also expand much needed hanger/tiedown space."

"Planning for some future expansion may be desirable for younger pilots or those wanting access to more space for hangar construction."

"Alt 4 solves a lot of issues and provides for the greatest expansion."

Development of Alternatives

Four potential Alternatives have been developed.

Alternatives are based on:

- Critical aircraft.
- Facility requirements identified during interviews and inventory.
- Future gravel/ski strip location.
- Forecasted need for more tie-down permits and lease lots.

What's Changed with the Alternatives

Alternative 1:

- No changes

Alternative 2:

- Changed ultimate configuration of Runway 02L/20R to match existing dimensions (4010' x100')
- Show ultimate acquisition of land within Runway 20R Runway Protection Zone (RPZ) that is currently outside of the airport property limits
- Moved proposed Northeast Apron vehicle parking area/portable restroom facilities outside of Runway 20R RPZ
- Keep Taxiway C in current configuration (Runway 20R threshold does not move so no need to construct new taxiway to intersect new threshold location)

What's Changed with the Alternatives

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- Changed ultimate configuration of Runway 02L/20R to match existing dimensions (4010' x100')
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- Keep Taxiway C in current configuration
- Keep Taxiway D (west) in current configuration

Alternative 4:

- Changed ultimate configuration of Runway 02L/20R to match existing dimensions (4010' x100')
- Show ultimate acquisition of land within Runway 20R Runway Protection Zone (RPZ) that is currently outside of the airport property limits
- Moved proposed Northeast Apron vehicle parking area/portable restroom facilities outside of Runway 20R RPZ
- Keep Taxiway C in current configuration
- Keep Taxiway D (both sides) in current configuration

Proposed Alternative One - Nov 2022



ALTERNATIVE 1 - NO BUILD

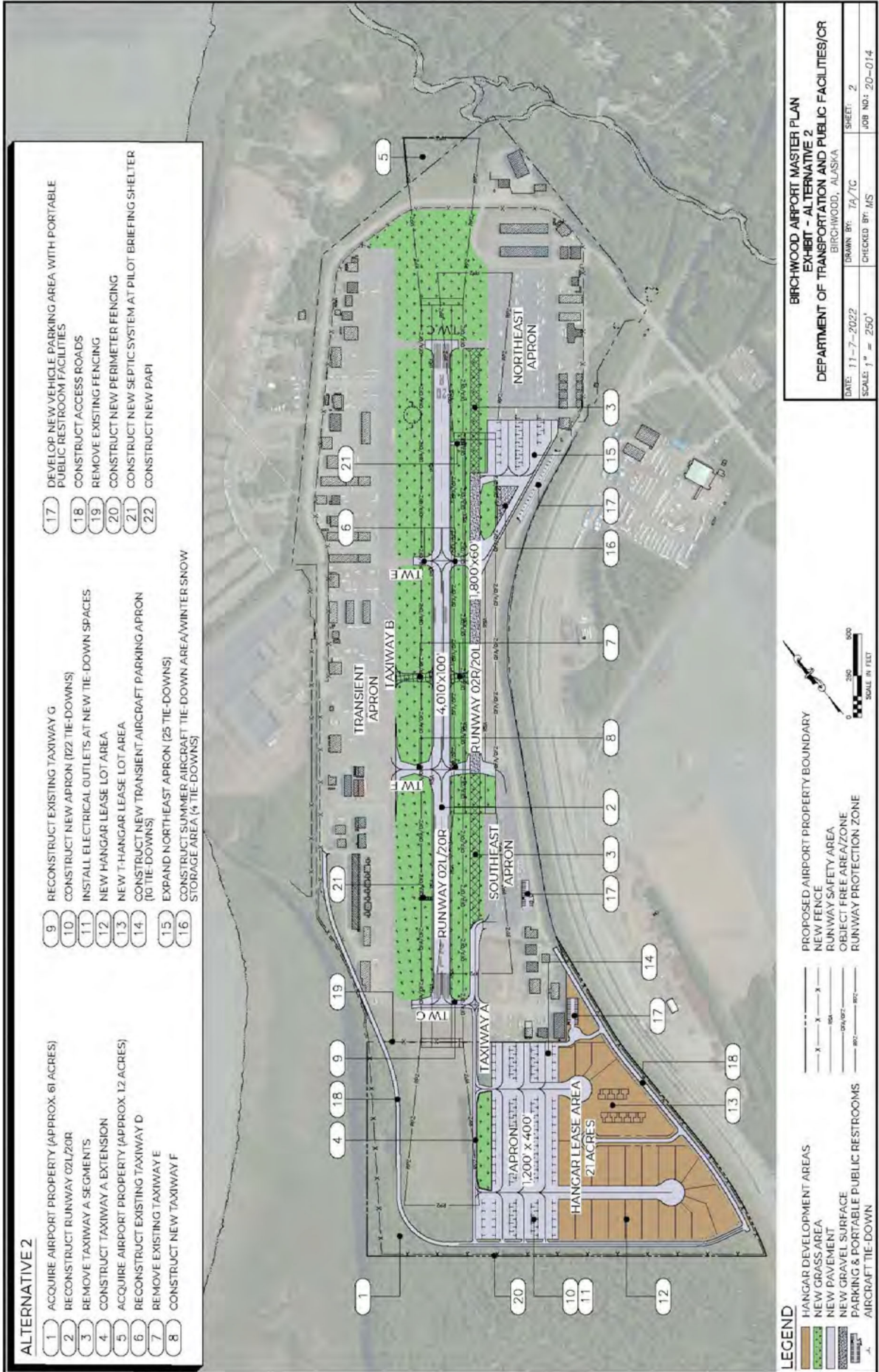
LEGEND
 - - - - - Runway Safety Area
 - - - - - Object Free Area/Zone
 - - - - - Runway Protection Zone



BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 1
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 11-7-2022
 DRAWN BY: TA/TC
 CHECKED BY: MS
 SCALE: 1" = 250'
 SHEET: 1
 JOB NO.: 20-014

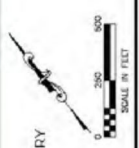
Proposed Alternative Two - Nov 2022



ALTERNATIVE 2

- | | | |
|---|---|--|
| 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | 9 RECONSTRUCT EXISTING TAXIWAY G | 17 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES |
| 2 RECONSTRUCT RUNWAY 02L/20R | 10 CONSTRUCT NEW APRON (122 TIE-DOWNS) | 18 CONSTRUCT ACCESS ROADS |
| 3 REMOVE TAXIWAY A SEGMENTS | 11 INSTALL ELECTRICAL OUTLETS AT NEW TIE-DOWN SPACES | 19 REMOVE EXISTING FENCING |
| 4 CONSTRUCT TAXIWAY A EXTENSION | 12 NEW HANGAR LEASE LOT AREA | 20 CONSTRUCT NEW PERIMETER FENCING |
| 5 ACQUIRE AIRPORT PROPERTY (APPROX. 12 ACRES) | 13 NEW T-HANGAR LEASE LOT AREA | 21 CONSTRUCT NEW SEPTIC SYSTEM AT PILOT BRIEFING SHELTER |
| 6 RECONSTRUCT EXISTING TAXIWAY D | 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) | 22 CONSTRUCT NEW PAPI |
| 7 REMOVE EXISTING TAXIWAY E | 15 EXPAND NORTHEAST APRON (25 TIE-DOWNS) | |
| 8 CONSTRUCT NEW TAXIWAY F | 16 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS) | |

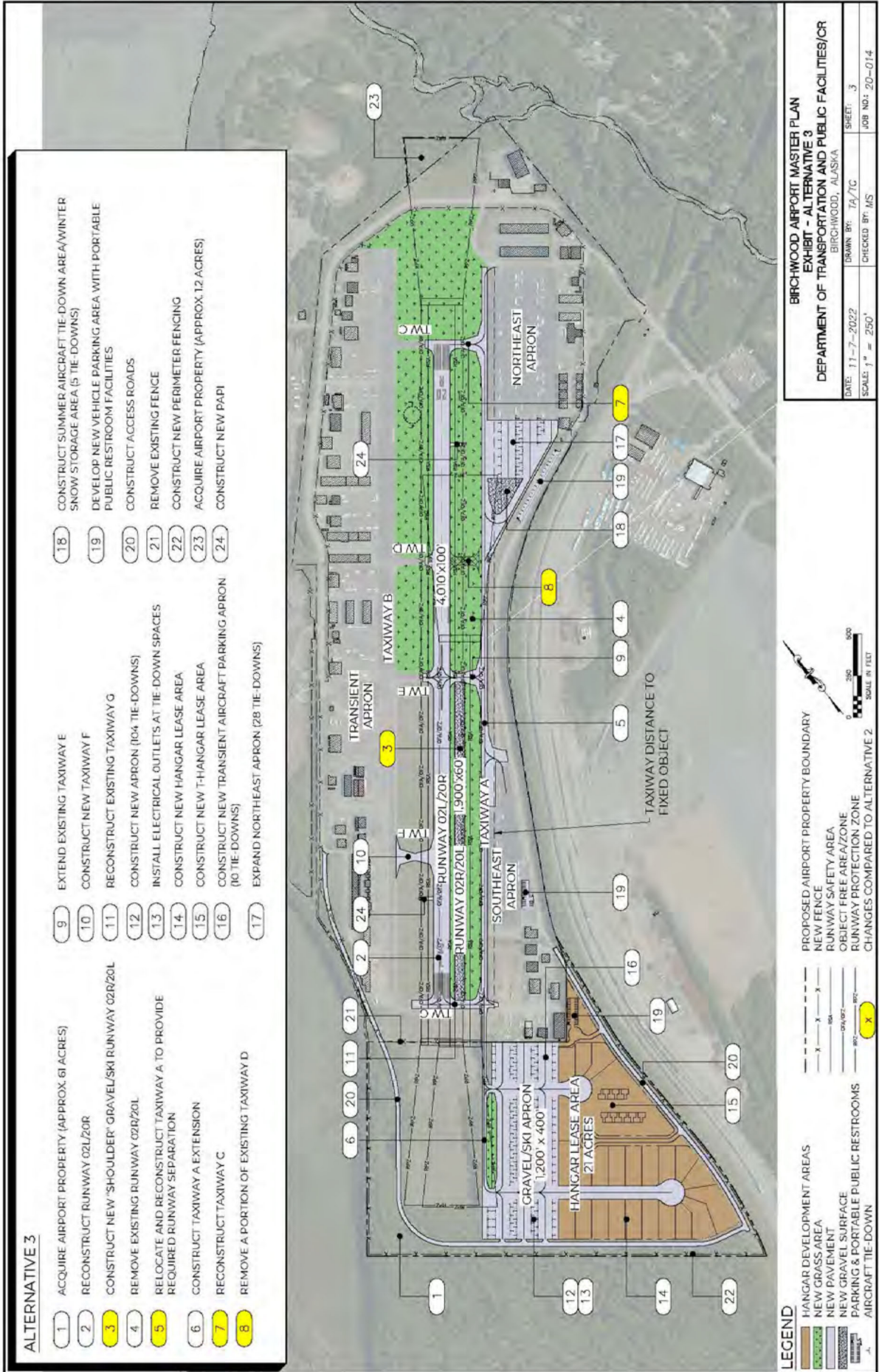
- ### LEGEND
- HANGAR DEVELOPMENT AREAS
 - NEW GRASS AREA
 - NEW PAVEMENT
 - NEW GRAVEL SURFACE
 - PARKING & PORTABLE PUBLIC RESTROOMS
 - AIRCRAFT TIE-DOWN
 - PROPOSED AIRPORT PROPERTY BOUNDARY
 - NEW FENCE
 - RUNWAY SAFETY AREA
 - OBJECT FREE AREA/ZONE
 - RUNWAY PROTECTION ZONE



BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 2
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 11-7-2022	DRAWN BY: TA/TC	SHEET: 2
SCALE: 1" = 250'	CHECKED BY: MS	JOB NO.: 20-014

Proposed Alternative Three – Nov 2022



- ALTERNATIVE 3**
- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES)
 - 2 RECONSTRUCT RUNWAY 02L/20R
 - 3 CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02R/20L
 - 4 REMOVE EXISTING RUNWAY 02R/20L
 - 5 RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION
 - 6 CONSTRUCT TAXIWAY A EXTENSION
 - 7 RECONSTRUCT TAXIWAY C
 - 8 REMOVE A PORTION OF EXISTING TAXIWAY D
 - 9 EXTEND EXISTING TAXIWAY E
 - 10 CONSTRUCT NEW TAXIWAY F
 - 11 RECONSTRUCT EXISTING TAXIWAY G
 - 12 CONSTRUCT NEW APRON (604 TIE-DOWNS)
 - 13 INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES
 - 14 CONSTRUCT NEW HANGAR LEASE AREA
 - 15 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (60 TIE-DOWNS)
 - 16 EXPAND NORTHEAST APRON (28 TIE-DOWNS)
 - 17
 - 18 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS)
 - 19 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES
 - 20 CONSTRUCT ACCESS ROADS
 - 21 REMOVE EXISTING FENCE
 - 22 CONSTRUCT NEW PERIMETER FENCING
 - 23 ACQUIRE AIRPORT PROPERTY (APPROX. 12 ACRES)
 - 24 CONSTRUCT NEW PAPI

LEGEND

- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- NEW GRAVEL SURFACE
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE
- CHANGES COMPARED TO ALTERNATIVE 2

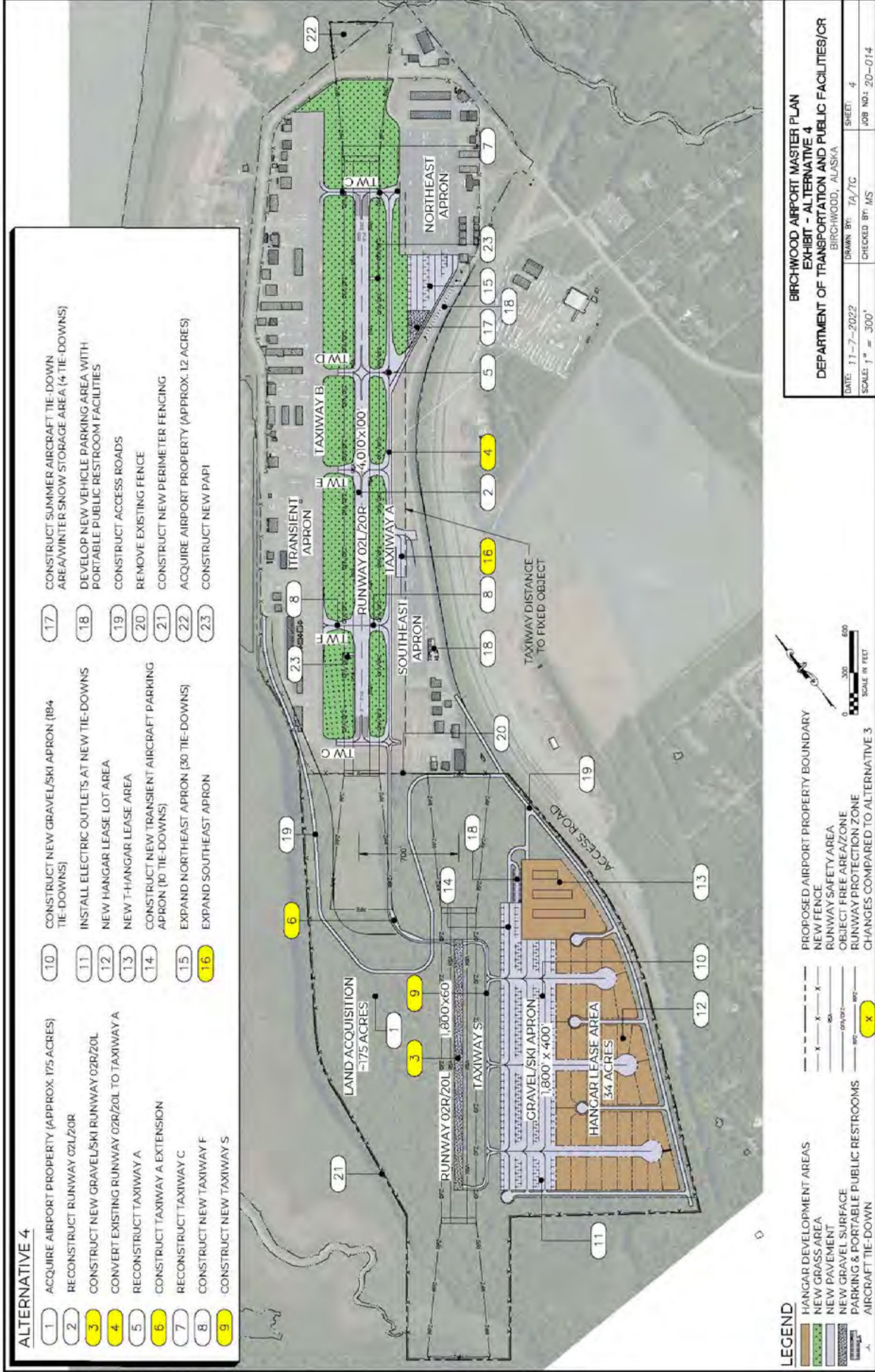
BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 3
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

DATE: 11-7-2022
 DRAWN BY: TA/TC
 SHEET: 3
 CHECKED BY: MS
 JOB NO.: 20-014

SCALE: 1" = 250'

TAXIWAY DISTANCE TO FIXED OBJECT

Proposed Alternative Four - Nov 2022



- ALTERNATIVE 4**
- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 175 ACRES)
 - 2 RECONSTRUCT RUNWAY 02L/20R
 - 3 CONSTRUCT NEW GRAVEL/SKI RUNWAY 02R/20L
 - 4 CONVERT EXISTING RUNWAY 02R/20L TO TAXIWAY A
 - 5 RECONSTRUCT TAXIWAY A
 - 6 CONSTRUCT TAXIWAY A EXTENSION
 - 7 RECONSTRUCT TAXIWAY C
 - 8 CONSTRUCT NEW TAXIWAY F
 - 9 CONSTRUCT NEW TAXIWAY S
 - 10 CONSTRUCT NEW GRAVEL/SKI APRON (184 TIE-DOWNS)
 - 11 INSTALL ELECTRIC OUTLETS AT NEW TIE-DOWNS
 - 12 NEW HANGAR LEASE LOT AREA
 - 13 NEW T-HANGAR LEASE AREA
 - 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS)
 - 15 EXPAND NORTHEAST APRON (50 TIE-DOWNS)
 - 16 EXPAND SOUTHEAST APRON
 - 17 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS)
 - 18 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES
 - 19 CONSTRUCT ACCESS ROADS
 - 20 REMOVE EXISTING FENCE
 - 21 CONSTRUCT NEW PERIMETER FENCING
 - 22 ACQUIRE AIRPORT PROPERTY (APPROX. 12 ACRES)
 - 23 CONSTRUCT NEW PAPI

LEGEND

- HANGAR DEVELOPMENT AREAS
- NEW GRASS AREA
- NEW PAVEMENT
- PARKING & PORTABLE PUBLIC RESTROOMS
- AIRCRAFT TIE-DOWN
- PROPOSED AIRPORT PROPERTY BOUNDARY
- NEW FENCE
- RUNWAY SAFETY AREA
- OBJECT FREE AREA/ZONE
- RUNWAY PROTECTION ZONE
- CHANGES COMPARED TO ALTERNATIVE 3

DATE: 11-7-2022
 DRAWN BY: TA/TC
 CHECKED BY: MS
 SHEET: 4
 JOB NO.: 20-014

SCALE: 1" = 300'

TAXIWAY DISTANCE TO FIXED OBJECT

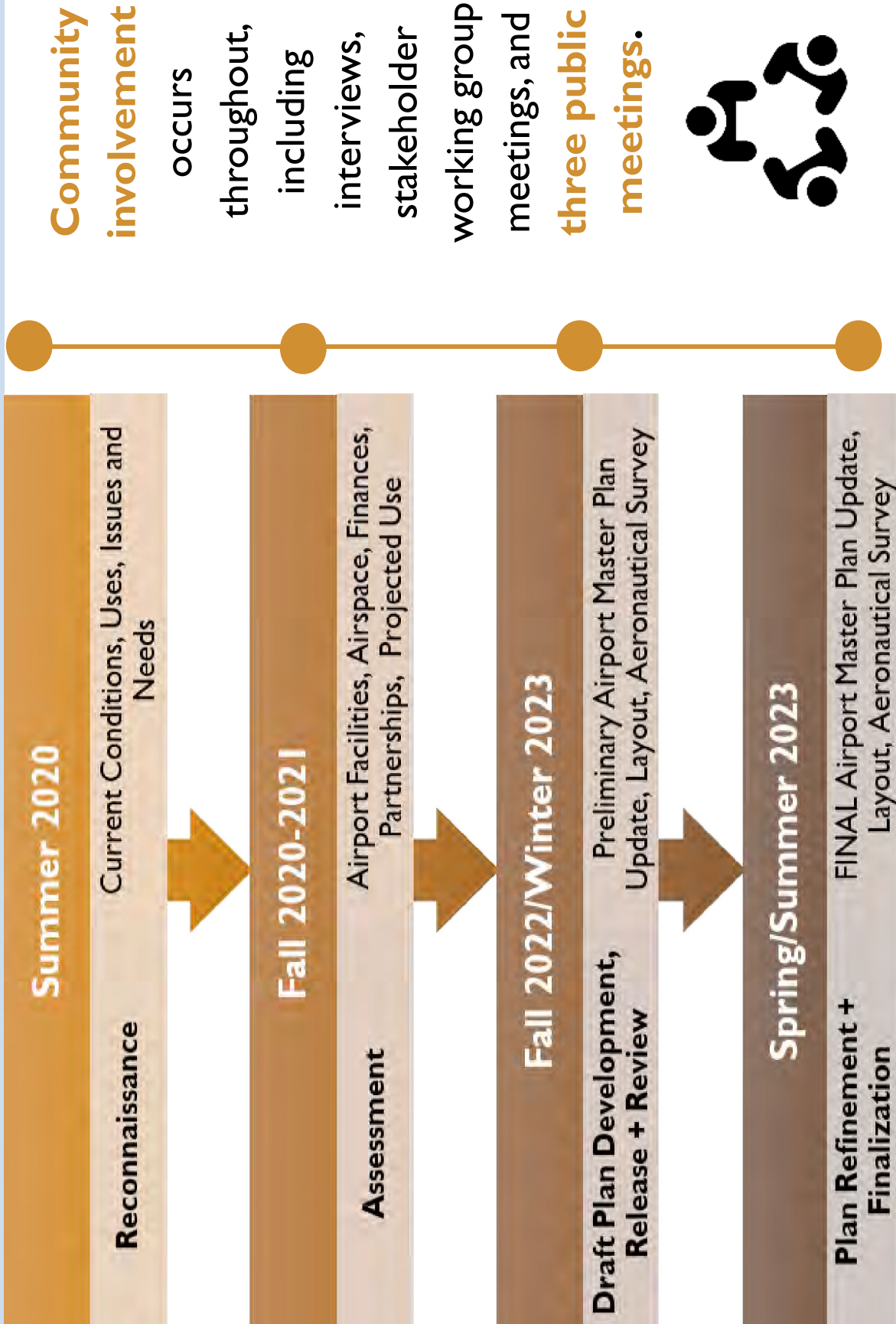
BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 4
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES/CR
 BIRCHWOOD, ALASKA

Alternatives Comparison

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Meets FAA parallel runway separation requirements for runways with simultaneous operations	No	No	No	Yes
Does not require a Modification of Standards (MOS) for runway separation	No	No	No	Yes
Future runway improvements are Airport Improvement Program eligible if MOS is attained	No	Yes	Yes	Yes
Removes in-line taxiways and improves airport safety	No	Yes	Yes	Yes
Provides leasable land and apron space to accommodate growth	No	Yes	Yes	Yes
Apron areas are located outside of Runway Protection Zones (RPZs)	No	No	Yes	Yes
Does not require FAA HQ approval for development justification for ski/gravel runway development	N/A	No	No	No
Maintains current runway operations	Yes	Yes	Yes	No
Establishes a parallel taxiway on the east side of the airport	No	No	Yes	Yes
Separation between the runways makes it clear to pilots that simultaneous operations are or are not allowed	No	No	Yes	Yes

Next Steps and Wrap Up

Project Schedule



Immediate Next Steps

November 2022

- Compile public feedback from today's workshop.
- Complete and post the Public-Private Partnership Summary.

December 14, 2022

- Conduct Stakeholder Advisory Group meeting to review workshop feedback and discuss potential preferred layout alternative.

December 2022 – Spring 2023

- Conduct additional stakeholder outreach to ensure representative input as we develop the Public Review Draft.
- Release Public Review Draft w/minimum 30-day comment period.

Learn More & Contact Us

For the Birchwood Airport Master Plan Update

<http://www.dot.state.ak.us/creg/birchwoodamp/>

Philana Miles, C.M., DOT&PF Project Manager

Email: philana.miles@alaska.gov

Phone: 907-269-0516

Shelly Wade, AICP, Public Involvement Lead

Email: shelly@agnewbeck.com

Phone: 907-242-5326

For Airport Operations:

Kayce Eliason, Airport Manager

Email: kay.eliason@alaska.gov

Phone: 907-338-1466

**Alaska Department of Transportation and Public Facilities
Birchwood Airport Master Plan Update
November Public Workshop 2022 Materials**



What's Changed with the Layout Alternatives Since Shared in October 2021

Alternative 1:

- No changes

Alternative 2:

- Changed ultimate configuration of Runway 02L/20R to match existing dimensions (4010' x100')
- Show ultimate acquisition of land within Runway 20R Runway Protection Zone (RPZ) that is currently outside of the airport property limits
- Moved proposed Northeast Apron vehicle parking area/portable restroom facilities outside of Runway 20R RPZ
- Keep Taxiway C in current configuration (Runway 20R threshold does not move so no need to construct new taxiway to intersect new threshold location)

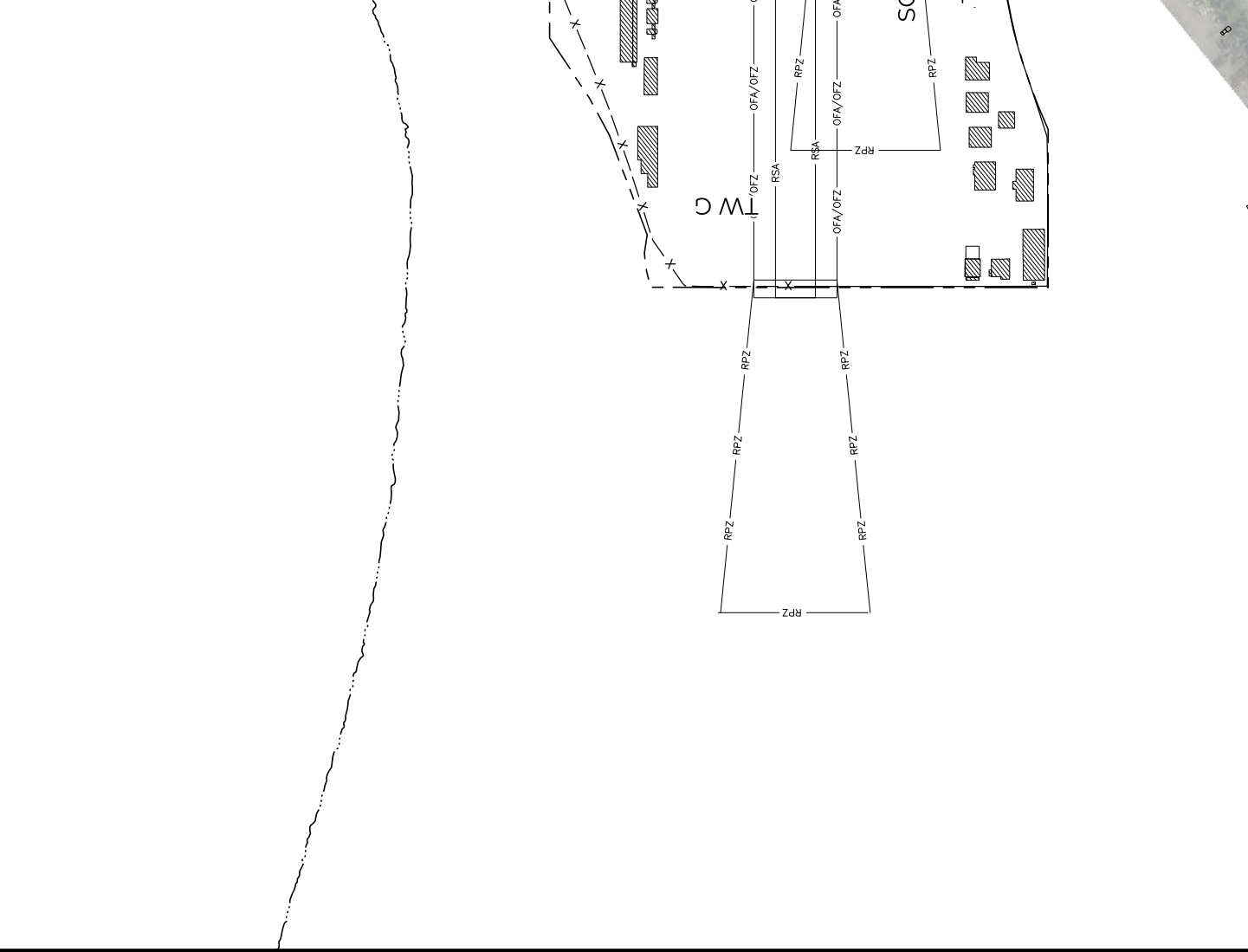
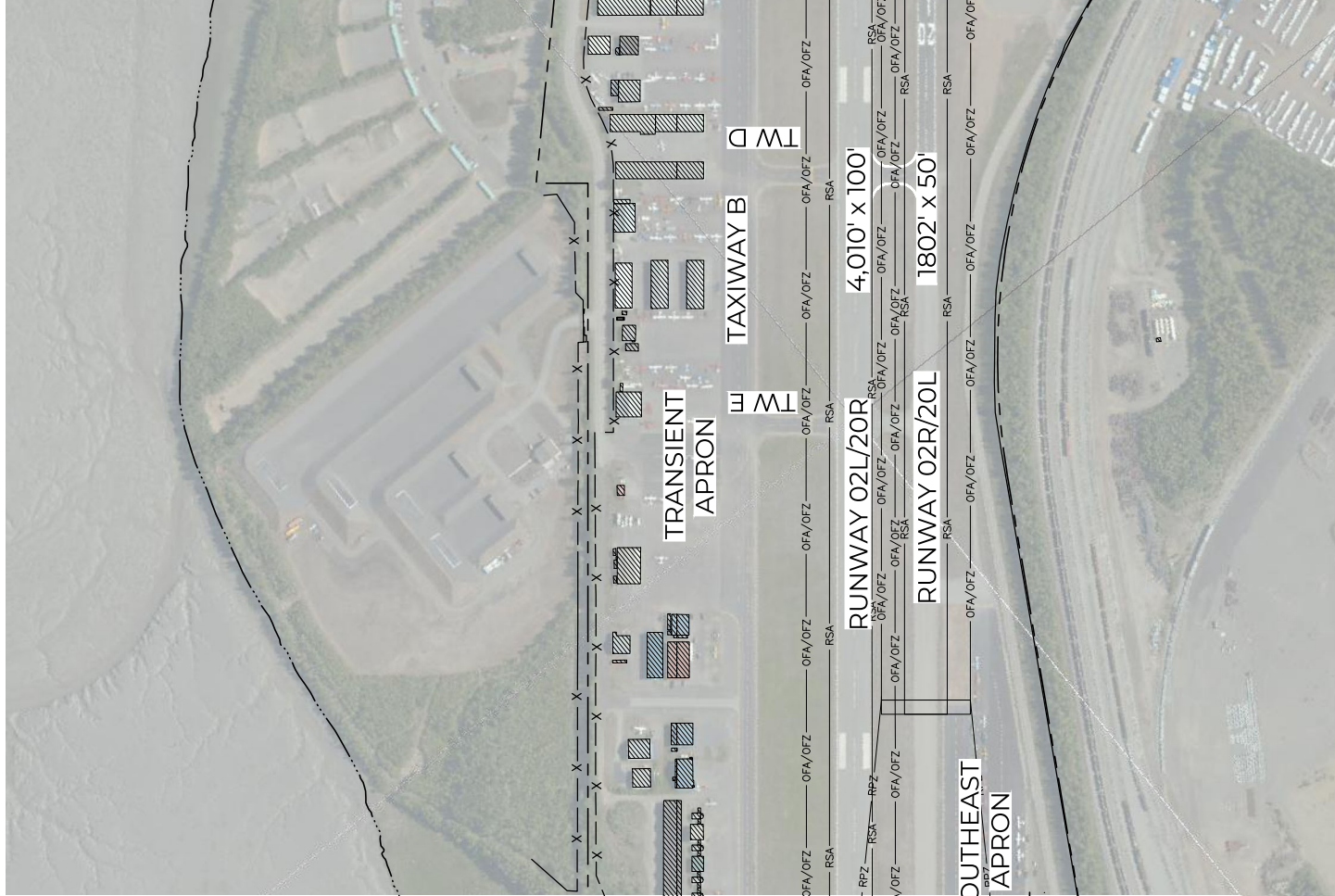
Alternative 3:

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- Keep Taxiway C in current configuration
- Keep Taxiway D (west) in current configuration

Alternative 4:

- Changed ultimate configuration of Runway 02L/20R to match existing dimensions (4010' x100')
- Show ultimate acquisition of land within Runway 20R Runway Protection Zone (RPZ) that is currently outside of the airport property limits
- Moved proposed Northeast Apron vehicle parking area/portable restroom facilities outside of Runway 20R RPZ
- Keep Taxiway C in current configuration
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ALTERNATIVE 1 - NO BUILD

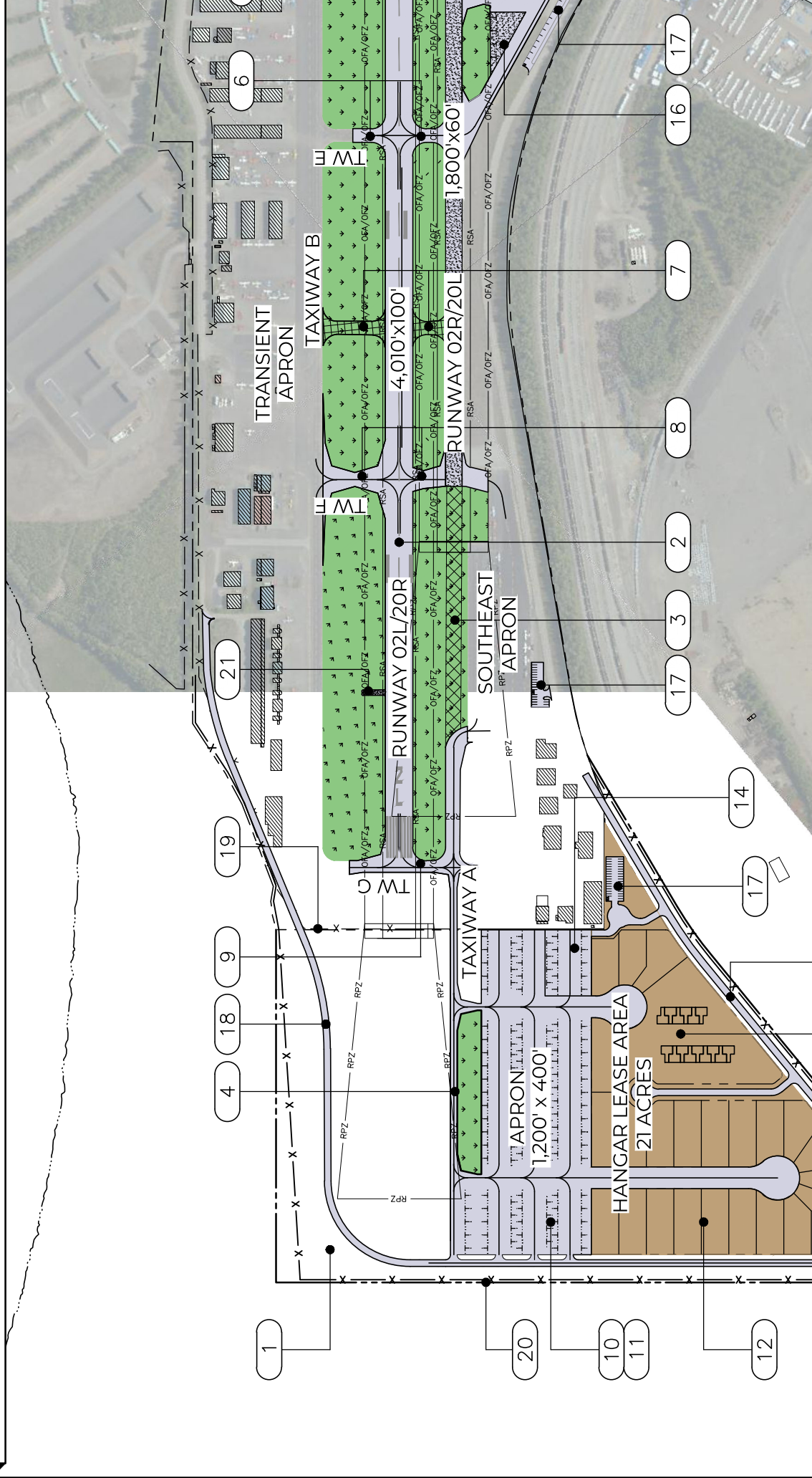


ALTERNATIVE 2

- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES)
- 2 RECONSTRUCT RUNWAY 02L/20R
- 3 REMOVE TAXIWAY A SEGMENTS
- 4 CONSTRUCT TAXIWAY A EXTENSION
- 5 ACQUIRE AIRPORT PROPERTY (APPROX. 1.2 ACRES)
- 6 RECONSTRUCT EXISTING TAXIWAY D
- 7 REMOVE EXISTING TAXIWAY E
- 8 CONSTRUCT NEW TAXIWAY F

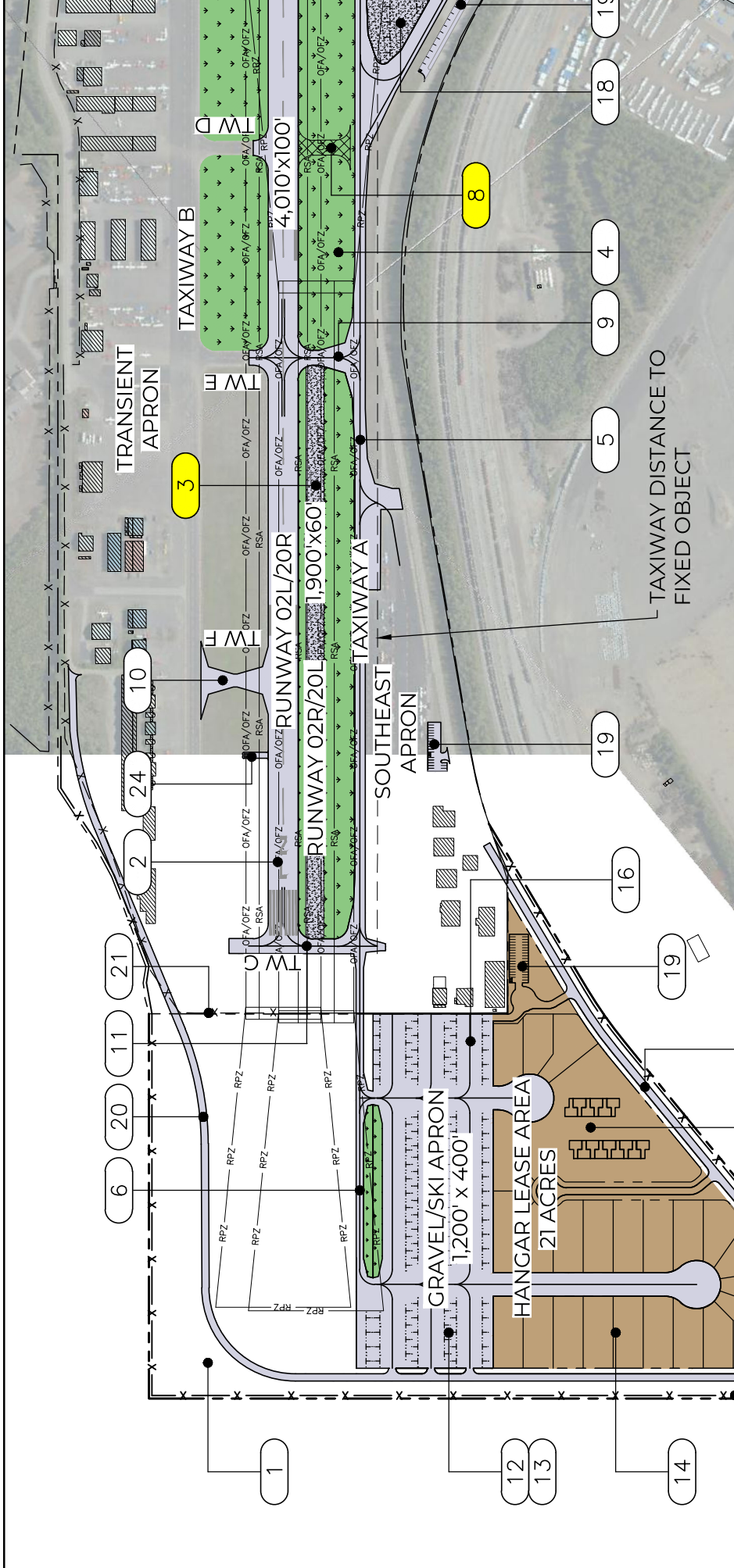
- 9 RECONSTRUCT EXISTING TAXIWAY G
- 10 CONSTRUCT NEW APRON (122 TIE-DOWNS)
- 11 INSTALL ELECTRICAL OUTLETS AT NEW TIE-DOWN SPACES
- 12 NEW HANGAR LEASE LOT AREA
- 13 NEW T-HANGAR LEASE LOT AREA
- 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS)
- 15 EXPAND NORTHEAST APRON (25 TIE-DOWNS)
- 16 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (4 TIE-DOWNS)

- 17
- 18
- 19
- 20
- 21
- 22



ALTERNATIVE 3

- | | | | | | |
|---|--|----|---|----|---|
| 1 | ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES) | 9 | EXTEND EXISTING TAXIWAY E | 18 | CONSTRUCT NEW TAXIWAY F |
| 2 | RECONSTRUCT RUNWAY 02L/20R | 10 | CONSTRUCT NEW TAXIWAY F | 19 | RECONSTRUCT EXISTING TAXIWAY G |
| 3 | CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02R/20L | 11 | RECONSTRUCT EXISTING TAXIWAY G | 20 | CONSTRUCT NEW APRON (104 TIE-DOWNS) |
| 4 | REMOVE EXISTING RUNWAY 02R/20L | 12 | CONSTRUCT NEW APRON (104 TIE-DOWNS) | 21 | INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES |
| 5 | RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION | 13 | INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES | 22 | CONSTRUCT NEW HANGAR LEASE AREA |
| 6 | CONSTRUCT TAXIWAY A EXTENSION | 14 | CONSTRUCT NEW HANGAR LEASE AREA | 23 | CONSTRUCT NEW T-HANGAR LEASE AREA |
| 7 | RECONSTRUCT TAXIWAY C | 15 | CONSTRUCT NEW T-HANGAR LEASE AREA | 24 | CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS) |
| 8 | REMOVE A PORTION OF EXISTING TAXIWAY D | 17 | EXPAND NORTHEAST APRON (28 TIE-DOWNS) | | |



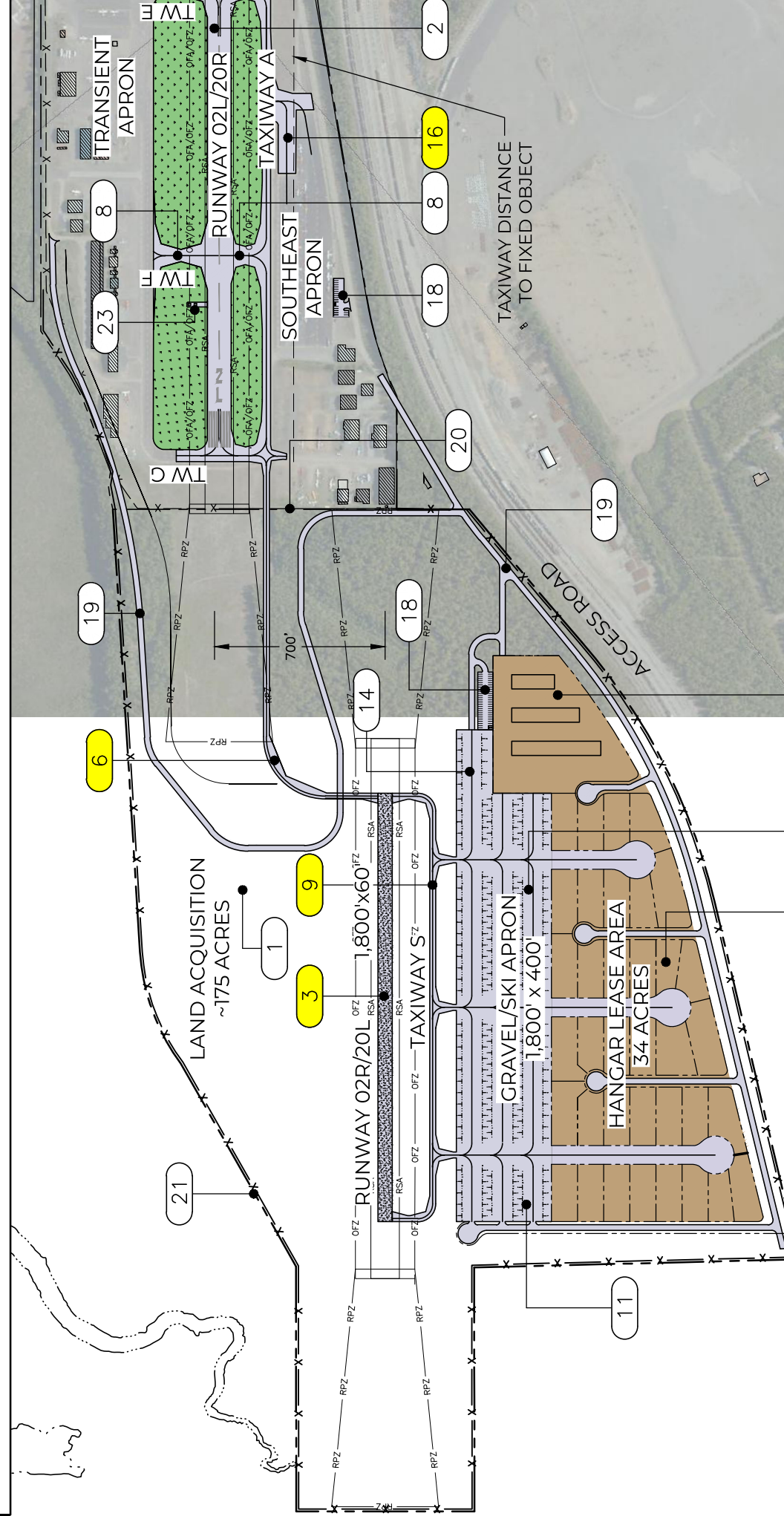
TAXIWAY DISTANCE TO FIXED OBJECT

ALTERNATIVE 4

- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 175 ACRES)
- 2 RECONSTRUCT RUNWAY 02L/20R
- 3 CONSTRUCT NEW GRAVEL/SKI RUNWAY 02R/20L
- 4 CONVERT EXISTING RUNWAY 02R/20L TO TAXIWAY A
- 5 RECONSTRUCT TAXIWAY A
- 6 CONSTRUCT TAXIWAY A EXTENSION
- 7 RECONSTRUCT TAXIWAY C
- 8 CONSTRUCT NEW TAXIWAY F
- 9 CONSTRUCT NEW TAXIWAY S

- 10 CONSTRUCT NEW GRAVEL/SKI APRON (184 TIE-DOWNS)
- 11 INSTALL ELECTRIC OUTLETS AT NEW TIE-DOWNS
- 12 NEW HANGAR LEASE LOT AREA
- 13 NEW T-HANGAR LEASE AREA
- 14 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS)
- 15 EXPAND NORTHEAST APRON (30 TIE-DOWNS)
- 16 EXPAND SOUTHEAST APRON

- 17 CONSTRUCT SUMMER AREA/WINTER SNOW
- 18 DEVELOP NEW VEHIC PORTABLE PUBLIC R
- 19 CONSTRUCT ACCESS
- 20 REMOVE EXISTING FE
- 21 CONSTRUCT NEW PE
- 22 ACQUIRE AIRPORT PE
- 23 CONSTRUCT NEW PA



AK DOT & PF, Birchwood Airport Master Plan Update: Public Workshop

Sign-In Sheet | Saturday, November 12, 2022, 10AM – 2PM | Please write neatly!

Name – First & Last	Email	How would you describe your primary relationship to the airport (pilot, tenant, Birchwood resident, onsite business owner, fed/state agency, other)?	Sign Me Up to Receive Electronic Project Updates (check the box)
Vince Pomeroy	alaskaflyer71@hotmail.com	pilot / on site business owner	<input checked="" type="checkbox"/>
JOHN WESTERN	JRWesternNavy@gmail.com	CAP Pilot	<input checked="" type="checkbox"/>
Ross Oliver	flyolivr@gci.net	pilot based @ BCV	<input checked="" type="checkbox"/>
Marie Devries	subbuilder@cutlook.com	SWHA / Pilot / hangar owner	<input checked="" type="checkbox"/>
Val Jokela	valkur@mtaonline.net	Birchwood CC	<input checked="" type="checkbox"/>
Don BURAND	1dburand@gmail.com	CAP / Gliders'	<input checked="" type="checkbox"/>
Gallbray III, Edward	edwardgallbrayiii@gmail.com	Birchwood Pilot	<input checked="" type="checkbox"/>
John Abram	smarbaj@gmail.com	Birchwood Pilot	<input checked="" type="checkbox"/>
Gail Miller	rmtrede@icloud.com	tenant	<input checked="" type="checkbox"/>
DALE MILLER	YDINAK@GMAIL.COM	TENANT	<input checked="" type="checkbox"/>
Jeff Johnston	chugiakalaska@gmail.com	Public	<input checked="" type="checkbox"/>
Gray Morris	skijwagon@mtaonline.net		<input type="checkbox"/>
Kenny Williams	2amend@gci.net	pilot	<input checked="" type="checkbox"/>
Sarah + Wally Parks	SAWA@MTAONLINE.NET	pilots, ^{2 tie downs} tenant, Chugiak Residents	<input checked="" type="checkbox"/>
Tom Kovaleski	tkovaleski70@gmail.com	Pilot / hangar @ Chugiak Residents	<input checked="" type="checkbox"/>
Catrina Bickmore	cbick524@gmail.com	Pilot, Birchwood Chugiak Resident	<input checked="" type="checkbox"/>
Bill Mendenhall	billmendenhall@yokoo.ca	Property owner	<input checked="" type="checkbox"/>
Della Swartz	arctictern@aero@gmail.com	hangar owner / business owner prop owner tenant	<input checked="" type="checkbox"/>

AK DOT & PF, Birchwood Airport Master Plan Update: Public Workshop

Sign-In Sheet | Saturday, November 12, 2022, 10AM – 2PM | Please write neatly!

Name – First & Last	Email	How would you describe your primary relationship to the airport (pilot, tenant, Birchwood resident, onsite business owner, fed/state agency, other)?	Sign Me Up to Receive Electronic Project Updates (check the box)
Catherine Shuman	cshuman180@gmail.com	Pilot, ^{onsite} business owner.	✓
Cecil Shuman	flycair@gmail.com	pilot, ^{onsite} business owner	✓
Will POMEROY	willy_p53@hotmail.com	NEIGHBOR	✓
Carl Sumpster	csumpster01@gmail.com	Pilot, tenant	✓
Pete Brown	pdbrown1706@me.com	Pilot, CFIG instructor, CAP, AHCA	✓
DAN SADDLER	DANSADDLER@GCI.NET	PILOT, STATE LEGISLATOR	✓
PATRICK OHARE	PATOHAREALASKA@G.MAIL.COM	PILOT TENANT	✓
Dennis Serie	BoreTideservices@gmail.com	Pilot Tenant	
ED WHITE	EDW1@hotmail.com	Pilot, HANGER, FAA, CAP	✓
Aaron Pomeroy	pomeroy86@gmail.com	Pilot	✓
Billy Gould	bsgould@gci.net	PILOT / TENANT	✓
ROB STAPLETON	ROB@ALASKAFOTO.COM	" / "	✓
JOHN DAID	TUNDRAPILOT@GMAIL.COM	PILOT/TENANT	✓
Jane Serie	talonthangers@gmail.com	hangar owner	already do
Sandra Johnson	cdstalt@yahoo.com	Pilot	already do
Tim Coalwell	Coalwellt@gmail.com	Pilot, hangar owner	already have
Kyle Smith	Ksmith@eklutnainc.com	Landowner	
Dewayne Crouse	dcrouse@gci.net	Pilot/Aircraft owner - Tenant	already do

AK DOT & PF, Birchwood Airport Master Plan Update: Public Workshop

Sign-In Sheet | Saturday, November 12, 2022, 10AM – 2PM | Please write neatly!

Name – First & Last	Email	How would you describe your primary relationship to the airport (pilot, tenant, Birchwood resident, onsite business owner, fed/state agency, other)?	Sign Me Up to Receive Electronic Project Updates (check the box)
LAMBERT DE GAVERRE	bonivard@aol.com	PILOT, HANGAR OWNER, USER	YES.
DICK LOCHNER	dard@lochmens.NET	PILOT, HANGAR OWNER, USER	YES
David & Belinda Baldwin	djbaldwin@mcc.com	Pilot hangar owner user	yes
Mitch Joyce	mitchjoyce1985@gmail.com	Pilot / Hangar owner	yes
Abe Harman	ajharman@gmail.com	Pilot, business owner	Yes
Marty Armentrout	martyarmentrout@gmail.com	Pilot, Tenant	Yes
JAMES STONERNG	ALASKA_VIKING@YAHOO.COM	EXECUTIVE DIRECTOR, BIRCHWOODSNOOTING PARK	yes
Darryl Parks	darrylparks@msn.com	Pilot, TENANT	
ROBERT KELLY	KLTEN@YAHOO.COM	" "	Yes
Ashley Marguand	tangocub@hotmail.com	Hangar owner, pilot, user	yes
Joe Stancil	185AKbushpilot@gmail.com	HANGAR OWNER, Pilot, user	yes
Tim Bloom	AKTimbloom@gmail.com	Hangar owner / Pilot / user	yes
Rep. Ken McCarty	Rep. Ken. McCarty@akleg.gov	Pilot / User / Tie Down	yes
Steve Soska	stevesoska@hotmail.com	pilot / Hangar owner	yes
David Swartz	daveanddella@gci.net	Pilot / hangar owner	yes
Mark Mobley	markmobley@ymail.com	Pilot	yes
Ed Kornfield	ekornfield@gci.net	Pilot / Glider Pilot / CAP Pilot	yes
Lars Gleitsmann	Lars@BetterAircraftFabric.com	Pilot, Business owner	yes

AK DOT&PF Birchwood Airport Master Plan Update

November 2022 Layout Alternatives: Map-Based Comments

NOTE: Comments are listed and transcribed as they were placed on each map; photos of each map follow the comments.

Alternative #	Comments
2	<p>Road on east side open for hangars; turn road into taxiway. (submitted by Mitch Hale)</p> <p>What is the trigger/threshold for a tower?</p> <p>Cut down trees on SE & SW end of runway (on Eklutna property)</p> <p>Back taxiing on gravel/ski runway is not efficient. Widen turns so pilots don't have to stop and get out and move end of plane to make the turn.</p> <p>By eliminating inline taxiway to the ski strip (#3) too many aircraft will be crossing the main runway at TWE and TWF. This is dangerous. The aprons to be eliminated because they are inline taxiways should just be considered part of the ski strip runway (yes, it's long, but it works!).</p> <p>Public restroom very necessary!</p> <p>Remove 20L & 20R designations and make it 20S & @S like Wasilla and Palmer. Then extend D taxiways from end of 2S across 20R to ramp. Then put in F taxiway from SE apron across 20S and 2S and across from 20L & 2R to B taxiway.</p> <p>How is snow removal considered? Have you talked with maintenance about how the alternatives work given snow removal equipment needs?</p> <p>In new hangar lease area, need to look at layout of lots.</p> <p>Terrain above/to right of "19" and will make road, "18" hard. Can be done but will require fill.</p> <p>Consider ski aircraft operations and taxiing – access/egress – radius/RW/TW – fillets need to be wider.</p> <p>Need public restroom at ski strip tiedown.</p> <p>Below Southeast Apron – can we add hangars between road and railroad land?</p> <p>On the southside of the field, Taxiway A should continue along the east side of Southeast Apron all the way to the end of the gravel strip to access. (submitted by Gail Miller)</p> <p>Taxiing on east side will be more awkward than it is currently.</p>

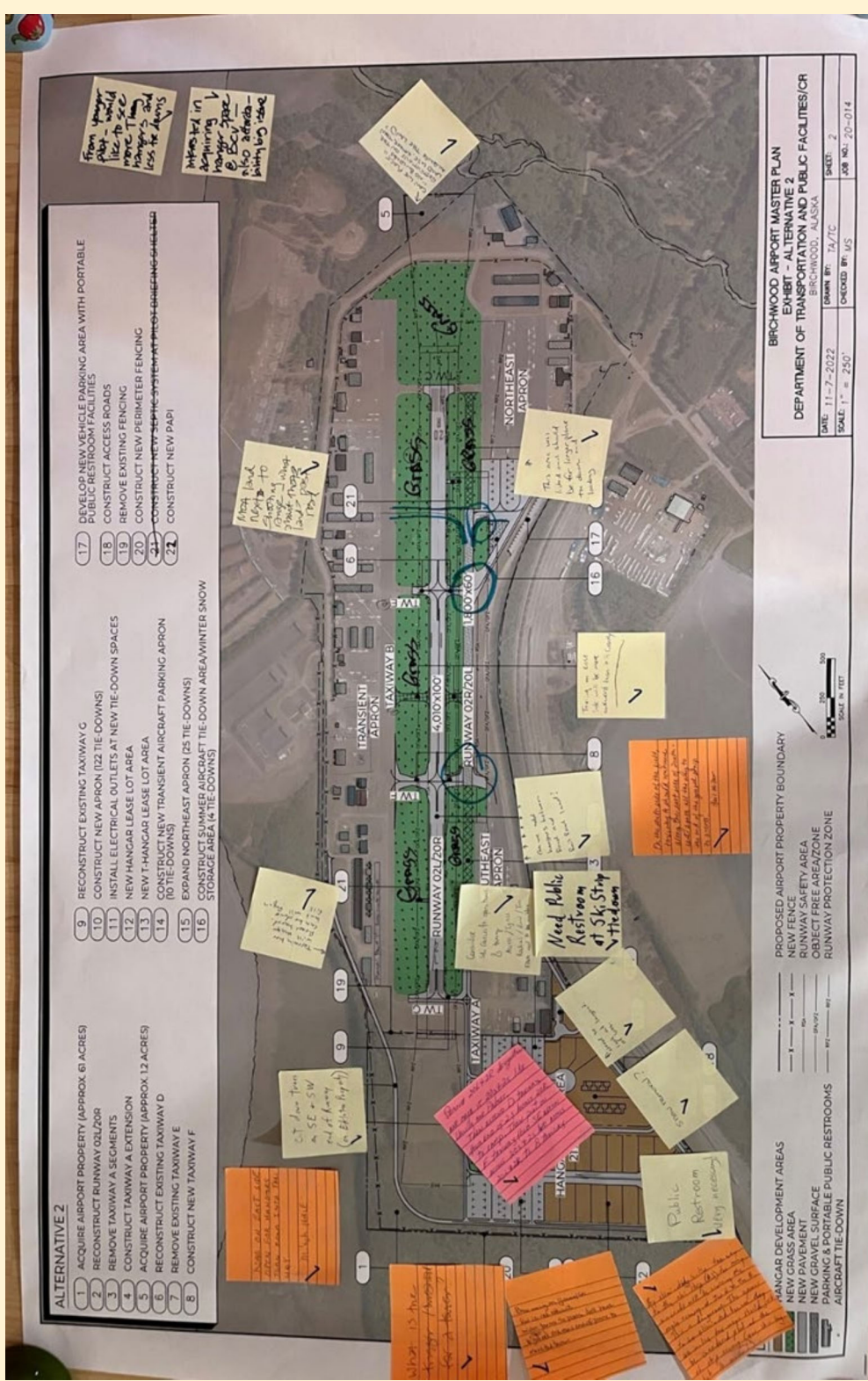
Area next to Northeast Apron was listed and should be for larger plane tie downs and loading.

Have you considered the land across from the airport, next to the MOA shooting range, as potential airport expansion area?

Re: item "5" – can we place "no buildings" restrictions on the land use, rather than acquire land?

From younger pilot – would like to see more T hangars and less tiedowns – interested in acquiring hangar space @ BCV – affordability to do this for younger pilots is a big issue.

2

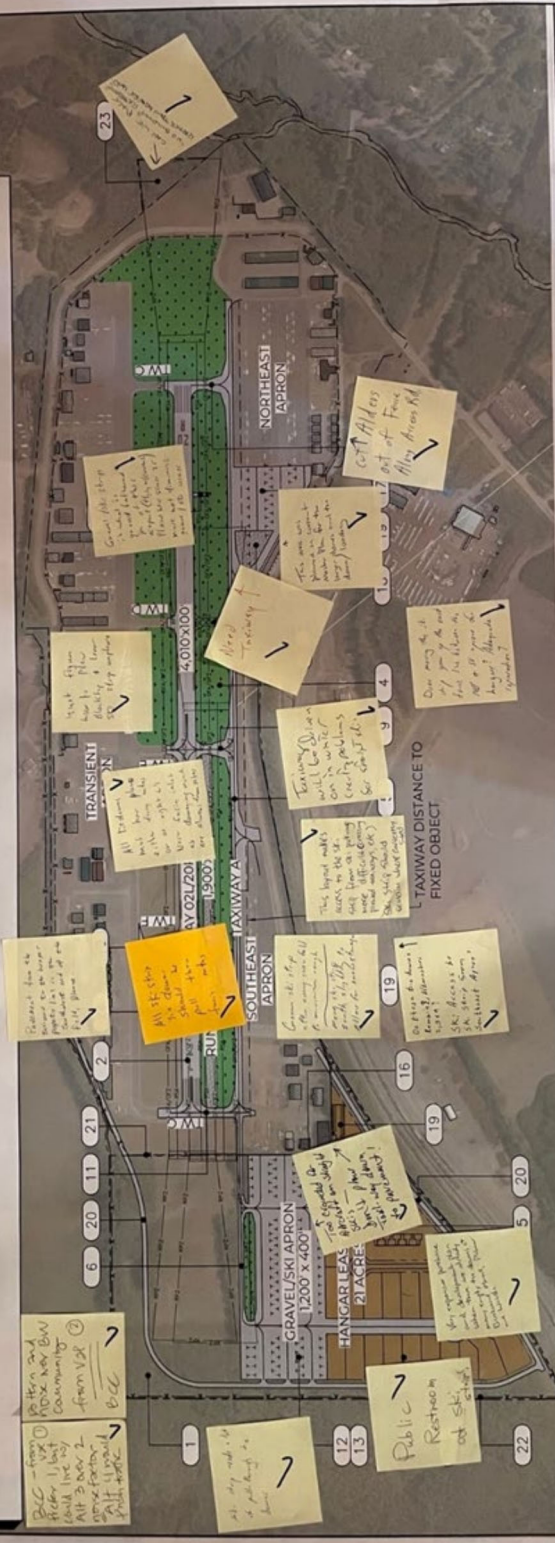


3

<p>Re: 21-acre hanger lease expansion – very expensive purchase and development plan when there are already empty tiedowns at Birchwood, Merrill, Palmer, and Wasilla.</p> <p>Re: gravel/ski apron area and SE Apron – too crowded for aircraft on straight skis – don’t plow taxiway down to pavement!</p> <p>Pavement from the taxiway to the hangar property lines in the southwest end of the field, please.</p> <p>All ski strip tiedowns should be pull through facing mountains.</p> <p>Groom ski strip after every snowfall to minimize rough. Move ski strip south slightly to allow for snow storage.</p> <p>Comment above “19” on map – Do these tiedowns remain for Alternatives 2, 3, and 4? Ski access to ski strip from southeast apron?</p> <p>This layout makes access to ski strip from ski parking more difficult (crossing plowed taxiways, etc.). Ski strip should be remain where currently sited.</p> <p>All tiedowns must have planes either facing mountains or at right Ls. Never facing inlet as damaging winds are always from mountains.</p> <p>Taxiway A (?) will be driven on in winter, creating problems for straight skis.</p> <p>Must figure how to plow blacktop and leave ski strip unplowed.</p> <p>Need taxiway (below new grass area, east of Taxiway A).</p> <p>Does moving the ski strip open up the east fence line between the NE and SE aprons for hangars? Adequate separation?</p> <p>Gravel/ski strip is what is grandfathered in at this airport (flying w/current). Plane here since 1975. Must not diminish gravel /ski usage.</p> <p>Area next to Northeast Apron – was planned in current master plan for the larger planes and tiedowns/loading.</p> <p>Cut alders out of fence along access road (southern border of Northeast Apron).</p> <p>Re: item area east of TW C – can we place “no buildings” restrictions on the land use, rather than acquire land?</p>	
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ALTERNATIVE 3

- 1 ACQUIRE AIRPORT PROPERTY (APPROX. 61 ACRES)
- 2 RECONSTRUCT RUNWAY 02L/20R
- 3 CONSTRUCT NEW "SHOULDER" GRAVEL/SKI RUNWAY 02R/20L
- 4 REMOVE EXISTING RUNWAY 02R/20L
- 5 RELOCATE AND RECONSTRUCT TAXIWAY A TO PROVIDE REQUIRED RUNWAY SEPARATION
- 6 CONSTRUCT TAXIWAY A EXTENSION
- 7 RECONSTRUCT TAXIWAY C
- 8 REMOVE A PORTION OF EXISTING TAXIWAY D
- 9 EXTEND EXISTING TAXIWAY E
- 10 CONSTRUCT NEW TAXIWAY F
- 11 RECONSTRUCT EXISTING TAXIWAY G
- 12 CONSTRUCT NEW APRON (104 TIE-DOWNS)
- 13 INSTALL ELECTRICAL OUTLETS AT TIE-DOWN SPACES
- 14 CONSTRUCT NEW HANGAR LEASE AREA
- 15 CONSTRUCT NEW T-HANGAR LEASE AREA
- 16 CONSTRUCT NEW TRANSIENT AIRCRAFT PARKING APRON (10 TIE-DOWNS)
- 17 EXPAND NORTHEAST APRON (28 TIE-DOWNS)
- 18 CONSTRUCT SUMMER AIRCRAFT TIE-DOWN AREA/WINTER SNOW STORAGE AREA (5 TIE-DOWNS)
- 19 DEVELOP NEW VEHICLE PARKING AREA WITH PORTABLE PUBLIC RESTROOM FACILITIES
- 20 CONSTRUCT ACCESS ROADS
- 21 REMOVE EXISTING FENCE
- 22 CONSTRUCT NEW PERIMETER FENCING
- 23 ACQUIRE AIRPORT PROPERTY (APPROX. 12 ACRES)
- 24 CONSTRUCT NEW PAVI



**BIRCHWOOD AIRPORT MASTER PLAN
EXHIBIT - ALTERNATIVE 3
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (CR)**
BIRCHWOOD, ALASKA

DATE: 11-7-2022 DRAWN BY: TA/TC SHEETS: 3
SCALE: 1" = 250' CHECKED BY: US JOB NO.: 20-014

Comments

Too much critical layout depending on hypothetical land expansion. Plan needs to remain viable regardless of if expansion happens.
Two traffic patterns is a bad idea. Noise abatement over the neighborhoods.
Too close to restricted area.

Get Eklutna on board ASAP. (Cannot read second part of comment)

4

Airspace too crowded with separated gravel strip.

Having to make turn on skis might be tough, should be a straight access.

Make the gravel runway same as Wasilla and Palmer. Do away with 20L and 20R designation. Remove taxiways except at ends to ramps. 90 degree turn off.

- Comment on this: Fine, but how do you plow blacktop and leave gravel with snow for skis?

Offset runway, ski strip will tend to turn across main strip as they are so offset. Opposing traffic patterns would be just dangerous.

Ski strip needs a lot of drive through tiedowns.

Re: Taxiway S – maintain access for aircraft on skis – don’t plow taxiway!

Parking too crowded for aircraft on straight skis.

Public restroom at ski strip!

Re: area above new grass area next to TW F – Pave this area!

Runways are too far apart to use the same traffic pattern – ski strip planes like a short, tight pattern, which will conflict w/ people flying the big runway.

Area east of Northeast Apron: FAA is suggesting rather a required purchase, no necessary a purchase.

Re: item east of NE Apron – can we place “no buildings” restrictions on the land use, rather than acquire land?

Heather A. Campfield

From: Shelly Wade <shelly@agnewbeck.com>
Sent: Friday, November 18, 2022 11:36 AM
To: Shelly Wade
Cc: Miles, Philana C (DOT)
Subject: Birchwood Airport Master Plan: More Opportunities to Share Your Ideas!
Attachments: Nov22LayoutAlts_BirchwoodAMPUpdate_CommentForm_Fillable.pdf



THANK YOU to everyone that participated in the November 12th Birchwood Airport Master Plan Update Public Workshop!

If you did not make the workshop or have more to share on the Airport Layout Alternatives, see an opportunity to comment below or checkout [the project website](#) for more information, including materials shared at the workshop!

Now through December 9th – Send us your ideas, **what you like or dislike** about the [Draft Layout Alternatives](#).

Your feedback now will help shape the alternatives we review with the project Stakeholder Advisory Group on December 14th.

IMPORTANT: *There will be another opportunity to weigh in on layout alternatives in Spring 2023 when we release the full public review draft of the updated master plan.*

How to share your feedback:

1. [Complete and return a Comment Form](#). Also attached to this email!
2. Submit your comments using the Comment Form at the [bottom of the project website](#).
3. Email or call the Project Team:

Philana Miles, C.M.
Project Manager
philana.miles@alaska.gov
907-269-0516

Shelly Wade, AICP
Public Involvement Lead

shelly@agnewbeck.com
907-242-5326 (call/text)

**Deadline for comments on November 2022 Layout Alternatives (as shared at the November 12th workshop)
– Friday, December 9th, 2022!**

Appendix E
CIP Data Sheets

CIP DATASHEET

Airport Name: Birchwood Airport

Grant Year: 2028

LOCID: BCV

Date

Submitted:

CIP Work Code			Project Description	Cost in Dollars (\$)
Purpose	Component	Type		
SA	TW	IM	Remove Existing Parallel Taxiway "A"	415,000
SA	TW	CO	Construct New Taxiway "A"	715,500
RC	TW	SH	Reconfigure Existing Connecting Taxiway "D"	1,123,500
ST	TW	OT	Remove Existing Connecting Taxiway "E"	181,500
CA	TW	CO	Construct Connecting Taxiway "F"	972,500
ST	EQ	WX	Install Supplemental Wind Cone	116,500
SA	RW	IM	Reconstruct Runway 03G/21G (1,800'x60')	2,731,000
CA	AP	EX	Expand Northeast Apron	2,903,000
CA	AP	CO	Construct Summer Tie-Down/Winter Snow Storage Area	752,500
ST	LA	DV	RPZ Land Acquisition	190,500
ST	OT	OB	Trim Trees in Avigation Easements That Are Existing Obstructions	191,500
ST	EQ	PA	Construct New Perimeter Fencing	381,000
RE	RW	LI	Rehabilitate Runway 03/21 Edge Lighting	2,712,500
ST	RW	VI	Install PAPIs on Runway 03/21	539,500
			Total Cost:	13,926,000
			Sponsor Share:	870,375
			Federal Share:	13,055,625

Project Description and Justification:

Near-term improvement projects include the following: relocation and reconfiguration of existing Taxiways "A" and "D" (BCV-NT-1, 2, 3); removal of existing Taxiway "E" (BCV-NT-4); construction of new Taxiway "F" (BCV-NT-5); installation of new supplemental wind cone (BCV-NT-6); reconstruction of gravel Runway 03G/21G (BCV-NT-7); expansion of the existing northeast apron (BCV-NT-8); acquisition of approximately 9.5 acres of land within the Runway 03/21 RPZs that currently lies outside the airport boundary (BCV-NT-9); obstruction removal (tree trimming) within the Runway 03/21 RPZs (BCV-NT-10); removal of a section of existing fence which lies within the Runway 03 RPZ (BCV-NT-11); construction of new fencing around the Runway 03 RPZ perimeter (BCV-NT-12); rehabilitation of the Runway 03/21 edge lighting and controls (BCV-NT-13); and installation of 4-box PAPI systems for both Runway 03/21 approaches (BCV-NT-14).

BCV-NT-1: Remove Existing Parallel Taxiway "A"

This project includes the removal of portions of Taxiway "A" that are in line with Runway 03G/21G.

Justification: The existing Taxiway "A" is directly in line with Runway 03G/21G and connects at either runway end. This layout goes against current FAA standards and presents a number of safety hazards including possible pilot confusion with runway limits, increased potential for conflict between taxiing aircraft and landing/departing aircraft, and increased potential for aircraft to taxi in the OFZ and RSA of an active runway.

BCV-NT-2: Construct New Taxiway "A"

This project includes the construction of approximately 700 feet of new Taxiway "A" which will connect existing Taxiway "G" to the Southeast Apron.

Justification: The current configuration of Taxiway "A" does not meet FAA standards and is anticipated to be removed to increase airport safety. This reconfiguration will remove access from the Southeast Apron to Runway 03. Constructing a new Taxiway "A" with an alignment offset from the Runway 03G/21G alignment will bring the taxiway into compliance with FAA standards, increasing airport operational safety allowing aircraft access between Runway 03 and the Southeast Apron.

BCV-NT-3: Reconfigure Existing Connecting Taxiway "D"

This project includes removal of the existing Taxiway "D" and construction of a new Taxiway "D".

Justification: Current access to Runway 03G/21G is through Taxiway "A" which is anticipated to be removed to meet FAA standards and increase operational safety. The proposed relocation and reconfiguration of Taxiway "D" will shift the taxiway's alignment towards existing Taxiway "C" and will connect parallel Taxiway "B" to the Northeast Apron via three taxiway segments: Taxiway "B" to Runway 03/21 (asphalt-surfaced), Runway 03/21 to Runway 21G (gravel-surfaced), and Runway 21G to the Northeast Apron (gravel-surfaced). The three segments of the taxiway will provide access to the Runway 21G threshold from Taxiway "B" and from the Northeast Apron. The addition of Taxiway "D" will increase airport operational safety by reducing the amount of runway crossings required to access Runway 03G/21G.

BCV-NT-4: Remove Existing Connecting Taxiway "E"

This project includes the removal of Taxiway "E".

Justification: The existing Taxiway "E" connects to the approximate mid-point of Runway 03/21. It is anticipated that, along with the reconfiguration of Runway 03G/21G, new Taxiways "F" and "D" will be constructed and will function as both crossing taxiways on Runway 03/21 and entrance taxiways for 03G/21G, making Taxiway E unnecessary and redundant. Removing Taxiway "E" will increase airport operational safety and decrease the potential for conflict occurring between taxiing aircraft and landing/departing aircraft using Runway 03/21.

BCV-NT-5: Construct Connecting Taxiway "F"

This project includes the construction of a new Taxiway "F".

Justification: Runway 03G threshold is currently accessed by Taxiway "A", which is anticipated to be removed. A new Taxiway "F" would provide access to the Runway 03G threshold, as well as access from the Southeast Apron to Runway 03G/21G, Runway 03/21, Taxiway "B", and the Northeast Apron.

BCV-NT-6: Install Supplemental Wind Cone

This project includes the installation of a new supplemental wind cone on the eastern side of Runway 03G/21G.

Justification: Birchwood Airport does not currently have a standard supplemental wind cone. Installing a new supplemental wind cone will increase Runway 03G/21G operational safety by providing accurate wind information compliant with FAA standards to pilots operating on the Runway 03G threshold.

BCV-NT-7: Reconstruct Runway 03G/21G (1,800'x60')

This project includes the reconstruction of Runway 03G/21G to bring it in compliance with FAA standards. This will include resurfacing and installation of new edge markings.

Justification: The current width, surfacing, and other design features of Runway 03G/21G do not meet FAA design standards. Reconstruction of the runway will increase airport operational safety by meeting standards that are familiar and more predictable to pilots.

BCV-NT-8: Expand Northeast Apron

This project includes expanding the Northeast Apron by construction of approximately 119,000 square feet of new paved apron area and 13 new tie-down spaces with electrical outlets.

Justification: Currently the Northeast Apron is used as a public apron to park aircraft. Expanding the apron will increase airport capacity and allow additional public aircraft to park and utilize the airport.

BCV-NT-9: Construct Summer Tie-Down/Winter Snow Storage Area

This project includes construction of approximately 33,000 square feet of new gravel apron south of the Northeast Apron including 8 new tie-downs for summer parking. The area will be used for snow storage during the winter.

Justification: Currently the Northeast Apron is used as a public apron to park aircraft. Expanding the apron will increase airport capacity and allow additional public aircraft to park and utilize the airport during the busy summer season. Additionally the airport currently struggles to find adequate storage for snow removed from airport surfaces during the winter. The gravel pad will increase snow storage capacity, and provide a designated area closer to airport facilities, reducing time required to perform snow removal and wear on snow removal equipment.

BCV-NT-10: RPZ Land Acquisition

This project includes the acquisition of approximately 9.5 acres of land to be included in airport property. The proposed acquisition includes approximately 8.3 acres of land within the Runway 03 RPZ and 1.2 acres of land within the Runway 21 RPZ.

Justification: The acquisition of the land area within the Runway 03/21 RPZs that lies outside the current airport boundary will provide the airport with control of land use within the RPZs.

BCV-NT-11: Trim Trees in Avigation Easements That Are Existing Obstructions

This project includes the trimming of trees that are obstructing airport airspace.

Justification: There are a number of trees identified in the aeronautical survey as an obstruction to the airport airspace. Trimming these trees will remove the obstruction and will increase the operational safety of the airspace for pilots.

BCV-NT-12: Construct New Perimeter Fencing

This project includes the removal of portions of existing perimeter fencing and construction of new perimeter fencing in a new location.

Justification: Currently the existing perimeter fencing is an obstruction to Runway 03 runway safety area surfaces. Removing the obstructing fence and constructing new fencing outside the runway surfaces will increase operational safety of the primary airport runway. Constructing new fencing will allow the anticipated expanded airport area to be secured properly with continuous fencing around the new airport property.

BCV-NT-13: Rehabilitate Runway 03/21 Edge Lighting

This project includes the rehabilitation of existing Runway 03/21 edge lighting and the construction of a new electrical equipment building (EEB).

Justification: The Runway 03/21 edge lighting is at the end of its useful life and due for replacement. Additionally, the existing electrical equipment building is inadequate to handle existing electrical loads and contains failing equipment past its life expectancy and due for replacement. Installing new runway edge lights will increase the operational safety of the runway and a new electrical equipment building will increase the reliability of the airport electrical system increasing airport operational safety and decrease maintenance efforts.

BCV-NT-14: Install PAPIs on Runway 03/21

This project includes the removal of the existing VASI on Runway 21 and the installation of new PAPIs on both Runways 03 and 21.

Justification: Runway 21 has existing VASI lights that are reaching the end of their functional life and not the preferred visual-glide slope system of the FAA. Installation of PAPIs for both runway approaches will provide visual-glide slope indicators of higher precision than what currently exists, increasing airport operational safety.

CIP DATASHEET

Airport Name: Birchwood Airport Grant Year: 2033
 Date Submitted: _____
 LOCID: BCV

CIP Work Code			Project Description	Cost in Dollars (\$)
Purpose	Component	Type		
CA	AF	CO	Construct Glider Staging Area / Aircraft Run-Up Area	533,500
SA	TW	IM	Pave Apron Area Between Taxiway "B" and Lease Lots	794,500
ST	AR	IM	Realign Access Road	1,583,500
OT	OT	PA	Construct Northeast Apron Vehicle Parking Area	752,000
OT	OT	PA	Construct Southeast Apron Vehicle Parking Area	228,500
			Total Cost:	3,892,000
			Sponsor Share:	243,250
			Federal Share:	3,648,750

Project Description and Justification:

Mid-term improvement projects include the following: construction of a glider staging/aircraft run-up area adjacent to Runway 03/21 (BCV-MT-1); paving of an apron area between existing lease lots and Taxiway "B" (BCV-MT-2); realignment of a segment of the existing Southeast Apron Access Road (BCV-MT-3); and construction of two vehicle parking lots adjacent to existing aircraft aprons (BCV-MT-4 and 5).

BCV-MT-1: Construct Glider Staging Area / Aircraft Run-Up Area

This project includes construction of a 75-foot wide staging/run-up area south of the intersection between Taxiway "B" and Taxiway "G".

Justification: Taxiway "G" is frequently utilized for aircraft run-ups and glider staging operations. When Runway 03L/21R landings coincide with these activities, landing aircraft are unable to exit the runway via Taxiway "G". Additionally, congestion on Taxiway "G" has the potential to occur when a queue forms in the area due run-up/staging activities being performed. A run-up/staging area is needed at this location to allow gliders and aircraft to prepare for take-off safely without blocking entrance or exit taxiways.

BCV-MT-2: Pave Apron Area Between Taxiway "B" and Lease Lots

This project includes the paving of a 50-foot wide section of the existing gravel area between the southern portion of Taxiway "B" and the lease lot areas directly to the west.

Justification: Paving this area will reduce maintenance efforts required to maintain the existing apron area, especially during winter. Additionally, paving this area will decrease the potential for aircraft moving from the lease areas to track foreign object debris (FOD) onto the paved Taxiways "B" and "G".

BCV-MT-3: Realign Access Road

This project includes shifting approximately 1,500 feet of the existing access road alignment to the south.

Justification: Currently a portion of the airport access road lies within the Runway 03G/21G OFZ, presenting a hazard to pilots operating on Runway 03G/21G. Shifting the alignment of this road will remove it from the OFZ. This will increase operation safety of the airport.

BCV-MT-4: Construct Northeast Apron Vehicle Parking Area

This project includes construction of new parking spaces and a portable restroom facility adjacent to the Northeast Apron. The parking area will be accessible via the Southeast Apron Access Road.

Justification: Currently there are no designated parking spaces near the Northeast Apron. Airport users utilizing the apron currently park on or near the apron. This presents opportunities for improper vehicle parking, potentially impacting aircraft travel along the apron. Providing a designated parking area near the apron will remove the safety hazard of vehicles traveling and parking on the apron.

BCV-MT-5: Construct Southeast Apron Vehicle Parking Area

This project includes construction of new parking spaces and a portable restroom facility adjacent to the Southeast Apron. The parking area will be accessible via the Southeast Apron Access Road.

Justification: Currently there are no designated parking spaces near the Southeast Apron. Airport users utilizing the apron currently park on or near the apron. This presents opportunities for improper vehicle parking, potentially impacting aircraft travel along the apron. Providing a designated parking area near the apron will remove the safety hazard of vehicles traveling and parking on the apron.

CIP DATASHEET

Airport Name: Birchwood Airport

Grant Year: 2038

LOCID: BCV

Date

Submitted:

CIP Work Code			Project Description	Cost in Dollars (\$)
Purpose	Component	Type		
ST	LA	DV	Land Acquisition	1,280,500
CA	AP	CO	Construct New General Aviation Apron	13,490,500
ST	TW	EX	Construct Taxiway "A" Extension	525,000
CA	AF	CO	Develop Access to New Hangar Lease Lot Area	8,624,000
CA	AR	AC	Extend SE Apron Access Road to New GA Apron and Lease Lot Area	5,546,000
OT	OT	PA	Develop GA Apron Vehicle Parking Area	1,181,500
CA	AR	AC	Construct Access Road Improvements	4,425,500
ST	EQ	PA	Construct New Perimeter Fencing	1,370,500
ST	EQ	WX	Relocate Weather Station	599,000
RE	RW	IM	Rehabilitate Runway 03/21	13,175,500
			Total Cost:	50,218,000
			Sponsor Share:	3,138,625
			Federal Share:	47,079,379

Project Description and Justification:

Long-term improvement projects include the following: acquisition of approximately 38.7 acres of land adjacent to the new airport boundary and acquiring avigation easements within the Runway 03/21 inner approach surfaces beyond the newly acquired land (BCV-LT-1); construction of a new general aviation (GA) apron (BCV-LT-2); extension of new Taxiway "A" (BCV-LT-3); hangar lease lot development adjacent to the new GA apron (BCV-LT-4); extension of the existing Southeast Apron Access Road (BCV-LT-5); development of a new vehicle parking area adjacent to the new GA apron (BCV-LT-6); construction of new segment of access roadway (BCV-LT-7); construction of new perimeter fencing around newly acquired land (BCV-LT-8); relocation of the existing weather station (BCV-LT-9); and the rehabilitation of Runway 03/21 (BCV-LT-10).

BCV-LT-1: Land Acquisition

This project includes the acquisition of approximately 38.7 acres of land surrounding the new airport boundary adjacent to the Runway 03 RPZ (see BCV-NT-10) and the establishment of avigation easements in the area of the Runway 03/21 inner approaches that lie outside the newly acquired land.

Justification: The land acquisition will provide additional airport property to accommodate future planned development.

BCV-LT-2: Construct New General Aviation Apron

This project includes the construction of an approximately 940-foot by 330-foot general aviation (GA) apron including up to 52 additional small aircraft tie-downs.

Justification: Construction of a new GA apron will increase airport capacity by offering more aircraft parking areas for airport users.

BCV-LT-3: Construct Taxiway "A" Extension

This project includes the extension of new Taxiway "A" (see BCV-NT-2) by approximately 700 feet to connect Taxiway "G" to the new GA apron.

Justification: Extending new Taxiway "A" will provide the newly constructed GA apron with access to airside facilities.

BCV-LT-4: Develop Access to New Hangar Lease Lot Area

This project includes the construction of new taxilanes, driveways, and utility access in the new lease lot development area adjacent to the new GA apron.

Justification: This project will provide airside and landside access and extension of utilities to 16 acres of land reserved for future private development of aviation-related buildings and businesses.

BCV-LT-5: Extend SE Apron Access Road to New GA Apron and Lease Lot Area

This project includes extending the existing Southeast Apron Road by approximately 3,360 feet. The roadway extension will connect at the southern terminus of the existing road and end at the new parking area for the GA Apron (see BCV-LT-6).

Justification: The access road extension will allow vehicle traffic to access the GA Apron without crossing/utilizing active taxiways.

BCV-LT-6: Develop GA Apron Vehicle Parking Area

This project includes the construction of a new vehicle parking lot consisting of 44 perpendicular parking spaces with portable restroom facilities adjacent to the newly extended Southeast Apron Access Road (see BCV-LT-5) and the new GA apron (see BCV-LT-2).

Justification: In addition to expediting snow removal operations, development of dedicated vehicle parking and rest facilities for airport users will greatly reduce the potential for conflict between aircraft and vehicles on the apron.

BCV-LT-7: Construct Access Road Improvements

This project includes the further extension of the new Southeast Apron Access Road from its terminus at the new GA Apron Parking Area to connect to the existing terminus of Birchwood Spur Road.

Justification: The new GA Apron Parking Area will not be directly accessible from the western side of the airport. Further extension of the access road will allow GA apron access and vehicle-pedestrian circulation from the southeast side to the northeast side of the airport.

BCV-LT-8: Construct New Perimeter Fencing

This project includes the removal of the existing southeastern and southwestern segments of perimeter fencing, including the fencing installed around the Runway 03 RPZ perimeter (see BCV-NT-12), and construction of new perimeter fencing around the new airport boundary (see BCV-LT-1).

Justification: Constructing new perimeter fencing will allow the expanded airport area to be properly secured with continuous fencing around the new airport boundary.

BCV-LT-9: Relocate Weather Station

This project includes the relocation of the existing weather station from its current location on the Transient Apron to a new location adjacent to the Runway 03 RPZ boundary, approximately 350 feet southwest of Taxiways "G" and "B".

Justification: The AWOS is currently located within a congested transient apron area. Reconstructing the AWOS in a location isolated from taxiing aircraft and vehicle traffic will limit the risk of the AWOS sustaining damage and will provide additional space for tie down development on the transient apron.

BCV-LT-10: Rehabilitate Runway 03/21

This project includes rehabilitation of the asphalt surface of Runway 03/21. The rehabilitation scope will not include any alterations to the existing runway dimensions or layout.

Justification: The existing asphalt surfacing on Runway 03/21 will be nearing the end of its functional life and is anticipated to be due for rehabilitation within the next 10 to 20 years. Rehabilitation will provide safer airport operations and reduce maintenance efforts.