Fairbanks International Airport

EASTSIDE MASTER PLAN

PREPARED FOR:

Fairbanks International Airport
3450 Airport Way
Fairbanks, AK 99709

PREPARED BY:

DOWL
4041 B Street
Anchorage, AK 99503

AUGUST 2019

FAIRBANKS INTERNATIONAL AIRPORT

Eastside Master Plan

Prepared for:

Fairbanks International Airport
6450 Airport Way, Suite 1
Fairbanks, Alaska 99709

Prepared by:

DOWL
4041 B Street
Anchorage, Alaska 99503

August 2019

TABLE OF CONTENTS

PHOTOS

TABLES

FIGURES

APPENDICES

ACRONYMS

2014 MP ..... 2014 Master Plan
AC ..... Advisory Circular
ADG ..... Aircraft Design Group
AIAS ..... Alaska International Airport System
ALP ..... Airport Layout Plan
ANC ..... Ted Stevens Anchorage International Airport
ATC ..... Air Traffic Control
ATCT ..... Air Traffic Control Tower
CIP ..... Capital Improvement Program
DOT&PF ..... State of Alaska Department of Transportation and Public Facilities
EA ..... Environmental Assessment
Eastside MP ..... 2019 Eastside Airport Master Plan
FAA ..... Federal Aviation Administration
FAI ..... Fairbanks International Airport
FBO ..... Fixed Base Operator
FNSB ..... Fairbanks North Star Borough
FSS ..... Flight Service Station
GA ..... General Aviation
IARF ..... International Airport Revenue Fund
IFR ..... Instrument Flight Rules
LHD ..... Lake Hood
MACS ..... Metropolitan Area Commuter System
MIRL ..... medium intensity runway lighting
MP ..... Master Plan
navaids ..... navigation aids
NDB ..... non-directional beacon
NOTAM ..... Notices to Airmen
NPI ..... non-precision instrument
OFA ..... object-free area
PAPI ..... Precision Approach Path Indicators
REIL ..... Runway End Identifier Lights
ROFA ..... Runway Object Free Area
RPZ ..... Runway Protection Zone
RSA ..... Runway Safety Area
RVR ..... runway visual range
VOR ..... Very-High Frequency Omni-directional Range

This page intentionally left blank.

1.0 INTRODUCTION

1.1 Master Plan Definition, Purpose, and Process

This 2019 Eastside Airport Master Plan (Eastside MP), completed in 2018 to 2019, will guide the orderly development of the Eastside of Fairbanks International Airport (FAI) over the next 20 years. The Eastside MP was developed in accordance with the Federal Aviation Administration (FAA) Airport Master Plan Advisory Circular (AC) 150/5070-6) and Seaplane Base AC 150/5395-1B. A definition of a master plan and its primary components are described below.

Products of a master plan include this master plan report that describes the analytical process and public/user outreach used to reach the recommended plan and an Airport Layout Plan (ALP) that graphically shows how airport improvements can be built according to FAA design standards. Airport master plans help set development priorities and schedules, using a phased 20-year capital improvement program (CIP).

The 2014 Master Plan (2014 MP), which was a master plan for all of FAI, was recently completed, but had its most in-depth analysis of airport needs and issues for the west side of the airport (Westside). However, there was considerable information in the Inventory and Forecasts sections of the 2014 MP report as well as the ALP, that were still

relevant and heavily used for this Eastside MP. The Eastside MP was initiated to dig deeper into Eastside issues and needs, with particular emphasis on improvements associated with the planned resurfacing and upgrades to the East Ramp and associated issues related to incursions and taxiway geometry as well as planned resurfacing of Runway 2R/20L.

1.2 Stakeholder Involvement

Issues, needs, alternatives, and recommendations of a master plan are heavily influenced by the input of a wide array of airport users and stakeholders. The Eastside MP had formal and informal methods of providing user/stakeholder input that are documented in Appendix A, including:

- User interviews
- A user survey
- A project website with a project email address
- Attendance at stakeholder meetings – General Aviation Association, Airport Operators Committee, Chamber of Commerce Transportation Committee
- Eastside MP Advisory Committee meetings (3 meetings)
- Public meetings (2 meetings)

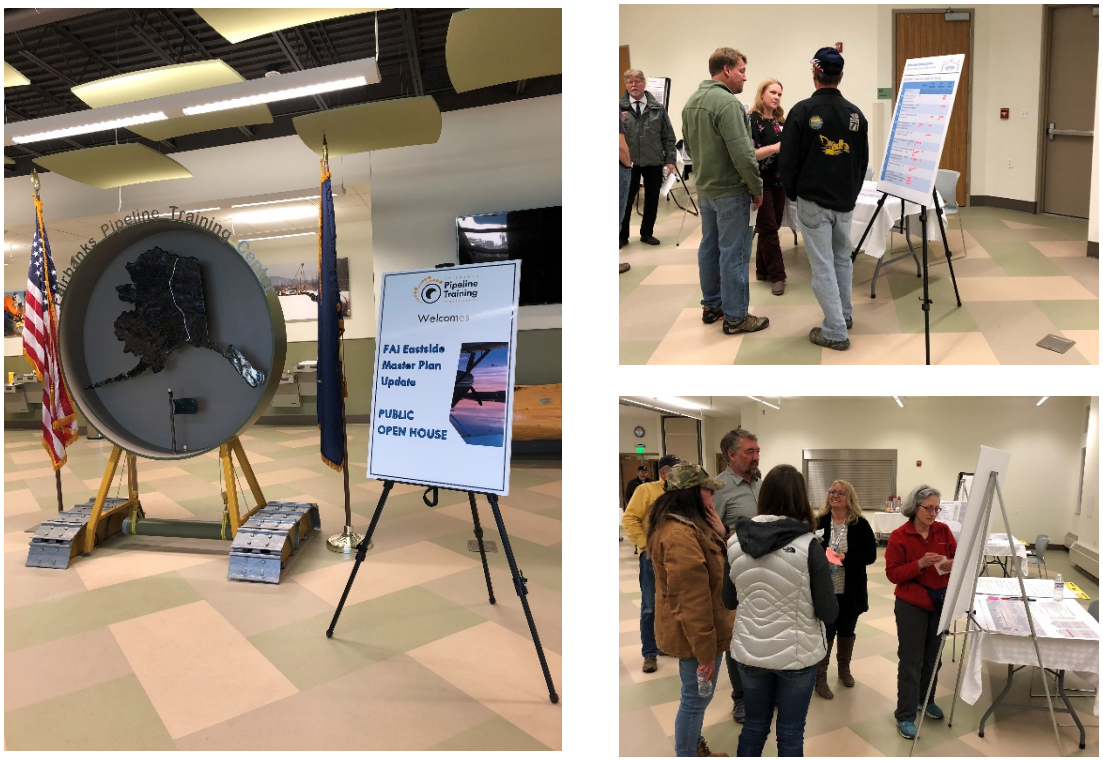


Photo 1-1. Public Involvement Meetings

2.0 INVENTORY

2.1 Regional Setting, Role

FAI is within the Fairbanks North Star Borough (FNSB), a community of nearly 100,000 residents. The economy of the region is heavily dependent on government/military spending, support to resource/oil development, healthcare, and tourism. FAI is also a major employer and generator of direct and indirect community economic benefits. FAI contributes 4,300 on-site and off-site jobs and $383 million in economic benefits to the regional economy.

There are at least 12 private airstrips located in the FNSB and five other commercial or military airports within 25 miles of FAI. Larger FAI area airports include (Figure 2-1):

- Chena Marina
- Metro Field
- Bradley Sky Ranch
- Ladd Army Airfield at Fort Wainwright
- Eielson Air Force Base

Chena Marina and Metro Field are privately-owned airports with float ponds and gravel runways. Both are surrounded by private property with general aviation facilities—hangars, tiedowns, fuel storage, mechanics, etc. Metro Field activity is primarily helicopter operations supporting the Trans-Alaska Pipeline. Bradley Sky Ranch is a privately-owned public use airstrip in North Pole with similar facilities and a large number of ultralights and gliders (FAI 2014 Master Plan). Ladd Army Airfield and Eielson Air Force Base support military and limited non-military aviation activities. The Alaska Fire Service is based at Fort Wainwright and the State of Alaska Division of Forestry Fire Operations operates from a heliport north of FAI.

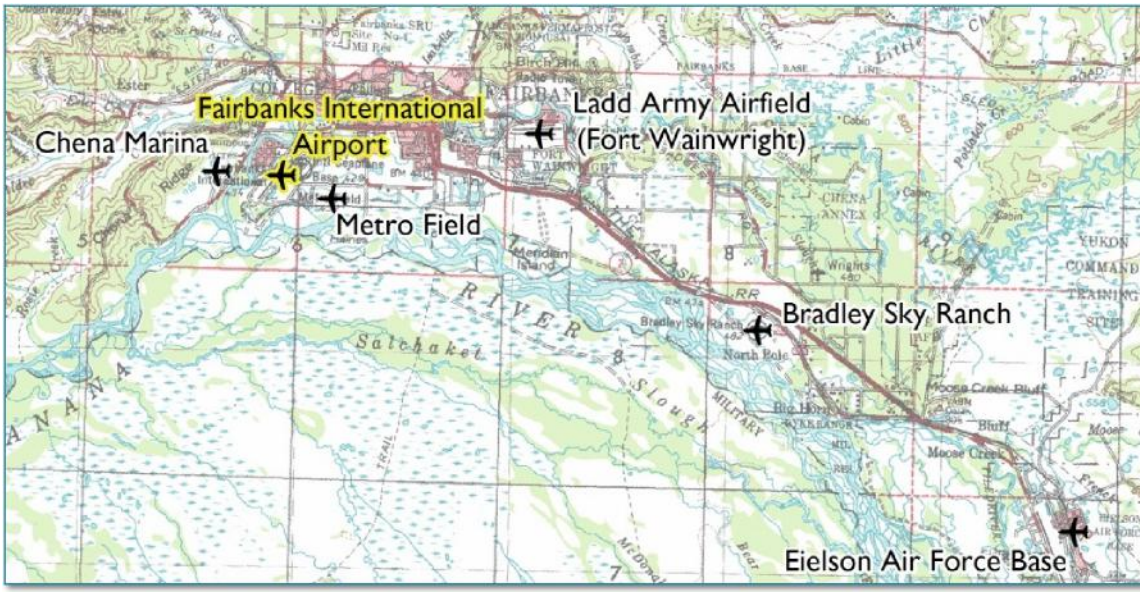


Figure 2-1. Larger Airports Within 25 Miles of FAI (2014 MP)

Only 18 percent of Alaska communities are accessible by road, making aviation the lifeline to remote communities, private airstrips, water landing areas, recreation sites and to resource development. FAI's Eastside is the largest general aviation facility in northern Alaska with 275 tiedowns, 183 floatplane slips, the FAA's Air Traffic Control Tower (ATCT) and Flight Service Station, over 20 air taxis, flight training, and other aviation businesses.

FAI's Eastside general aviation facilities connect Fairbanks residents and tourists to over 50 remote communities, remote lodges and cabins, remote fishing, hunting, and sightseeing areas. Many residents and visitors in northern Alaska fly through the Eastside enroute to Fairbanks or to other destinations in Alaska and the Lower 48. Operations are particularly heavy in the summer and fall. Floatplanes use the waterlane in ice free months and ski equipped aircraft use Runway 2/20 in the winter. Wheeled aircraft operate from both Runway 2/20 and Runway 2R/20L.

2.2 Ownership, Management, Operations

Originally owned and developed by the federal government, FAI was transferred to the State of Alaska in 1959. FAI, together with Ted Stevens Anchorage International Airport (ANC) and Lake Hood (LHD), form the Alaska International Airport System (AIAS), a division within the State of Alaska Department of Transportation and Public Facilities (DOT&PF). As part of AIAS, revenues and expenses from FAI are combined with revenues and expenses from ANC and LHD in the International Airport Revenue Fund (IARF). The IARF is an enterprise fund that is financially independent from State General Funds and is funded through AIAS user fees.

The Eastside is managed, operated, and maintained by the Fairbanks International Airport. The Eastside benefits from the full spectrum of capabilities offered by being part of a larger airport complex. These assets and services are far beyond what would normally be available to an Alaska general aviation airport. The Eastside is staffed by various management, administration, leasing, environmental, engineering, operations, and maintenance staff responsible for FAI.

2.3 Inventory of Existing Facilities

This inventory describes key features of FAI's Eastside. Portions of the inventory include data and information from the recent 2014 Master Plan, since much of the information collected at that time is still accurate today.

2.3.1 *Airfield*

2.3.1.1 Runways

There are two runways and a waterlane on the Eastside of FAI. Dimensions, surface type, and other features of each runway are presented in Table 2-1 and Figure 2-2. These runways serve non-air-carrier, general aviation (GA) aircraft and include several Part 135 air taxi carriers.

Table 2-1. Eastside Runways and Waterlane

Feature	Runway 2R/20L	Waterlane 2W/20W	Runway 2/20
Type	General Aviation	Waterlane	Gravel/Ski
Dimensions	6,501' x 100'	5,400' x 100'	2,900' x 75'
Surface	Asphalt	Water	Gravel/Snow
Load Bearing Capacity	18,000 S	N/A	N/A
Airport Reference Code	Larger Than Utility B-II	Utility B-II	Utility B-II
Runway Lighting	Medium Intensity Runway Lighting (MIRL)	None	None
Runway Marking	Non-Precision Instrument (NPI)	Buoys	Reflective threshold delineators and edge cones

Source: FAI Master Plan, 2014

This page intentionally left blank.

Fairbanks International Airport
EASTSIDE
MASTER PLAN

FIGURE 2-2 EASTSIDE FACILITIES

WESTSIDE

EAST HAUL RD

RESUE BOAT HOUSE

WEST FLOAT POND RD

WATER LANE 2W-20W 5400' X 100'

B

FLOAT PLANE RAMP

GRAVEL TIE DOWN AREA

EASTSIDE

FLOAT POND RD

2R-20L 6,501' X 100'

SKI STRIP 2/20 (GRAVEL) 2,900' X 75'

FLOAT PLANE RAMP

FLOAT POND EXTENSION

Q R S T U V W C

EAST RAMP COMPASS ROSE

EASTRAMP

Y

SMITH AERO RD

D

CAMPGROUND

LEASE LOTS

PILOT LOUNGE

LEASE LOTS

UNIVERSITY AVE SOUTH

AMISTEAD WY

LEVANEVSKY ACCESS RD

JOSLYN ACCESS RD

FAA ATCT

PUBLIC PARKING LOT 2

SHOLTON ACCESS RD

PUBLIC PARKING LOT 1

POLLACK ACCESS RD

HAGBERD ACCESS RD

LAVERY ACCESS RD

ACCESS RD

FLOAT POND RD

UNIVERSITY AVE SOUTH

AUTOMATED FLIGHT SERVICE STATION

This page intentionally left blank.

Runway 2R/20L is paved. Most of this pavement is more than 15 years old, and the most recent pavement inspection report (2018) recommends corrective maintenance. This runway has lighting and markings appropriate for non-precision instrument runways. This runway is used by air taxi/charter companies and private pilots year-round as well as by other wheeled aircraft in the winter that operate from the gravel runway in the summer.

Runway 2/20 is a gravel runway that is maintained with a snow-packed surface in winter to support aircraft landing on skis. It is used by small general aviation wheeled aircraft in the non-winter months.

Runway 2W/20W is a waterlane used by aircraft on floats. The water depth varies as the groundwater elevation changes seasonally. In summer when the water is low, sandbars appear on areas of the float pond, particularly in the Floatpond Extension. The waterlane is Notices to Airmen (NOTAM) closed and not maintained by FAI in the winter.

Photo 2-1. Float Pond Waterlane 2W/20W

2.3.1.2 Taxiways

Taxiways meeting the standards for FAA Aircraft Design Group (ADG) II serve the GA aircraft on the east side of the airport. Most of the taxiway pavements are over 15 years old. Pavement recommendations from the 2018 pavement inspection are primarily preventative maintenance, with Taxiways D and T recommended for rehabilitation.

Taxiway B provides the only aircraft connection between the east and west sides of the airport. Air taxi and other aircraft access Runway 2L/20R using Taxiway B regularly under Instrument Flight Rules (IFR) conditions. While there is a fence to separate the east and west sides of FAI, there is an opening in the fence at Taxiway B. Taxiway B was resurfaced in 2018 and an island was added to block direct access from the apron to Taxiway B.

Taxiway C is a parallel taxiway that extends the length of Runway 2R/20L and Runway 2/20. Taxiway C is controlled by the ATCT south of Taxiway S. Various connector taxiways connect Taxiway C to Runway 2R/20L and Runway 2/20. Eastside taxiway dimensions and standards are shown in Table 2-2. All taxiways are paved, except for a short segment of gravel taxiway leading into the air campground. There is not a designated taxi channel in the floatpond; floatplanes taxi east of Runway 2W/20W.

Table 2-2. Taxiways

Taxiway	ADG	Length	Width
B (East)	II	2,250’	50’
C	II	10,547’	50’
D	II	4,550’	40’
Q	II	375’	35’
R	II	375’	35’
S	II	450’	35’
T (East)	II	450’	200’
U	II	645’	35’
V	II	720’	35’
W	II	1,000’	35’
Y	II	375’	35’

Source: FAI Master Plan, 2014

Many of FAI’s Eastside taxiways are maintained with a snow surface in winter months to enable taxiing of ski-equipped aircraft to and from the gravel/ski runway.

Photo 2-2. Taxiway W Maintained with a Snow Surface

2.3.2 *Airspace, Navigation Aids, Approaches*

FAI's airspace, navigation aids (navaids), and approaches are described in Section 2.2.2 of the 2014 FAI Master Plan. The recent aeronautical survey completed under that plan identified numerous tree obstructions that were recommended for removal on the 2017 ALP. Some are located at the end of Runway 2R and along the seaplane base.

FAI Eastside runways are served by a non-directional beacon (NDB) and a Very-High Frequency Omni-directional Range (VOR) transmitter. Runway 2R has threshold lights and Precision Approach Path Indicators (PAPI) to assist with landings while Runway 20L is equipped with Runway End Identifier Lights (REIL) and PAPIs. Runway 2R/20L is equipped with a medium-intensity runway lighting system. Runways 2R and 20L have RNAV GPS approaches. Runways 2/20 and 2W/20W have no navaids and lighting. Runway 2L/20R on the west side may be used when pilots are unable fly to the Eastside runways, in visibility conditions as low as 600 feet runway visual range (RVR) and no minimum height above touchdown. Primarily landings are from the north and departures to the south.

2.3.3 *Aircraft Parking*

Wheeled aircraft park on the tiedown apron on the Eastside, commonly referred to as the East Ramp. The pavement area of this apron is approximately 1.4 million square feet, with parking for over 300 wheeled aircraft, including transient parking. Tiedowns with electricity and pull through parking are the most desirable.

Photo 2-3. East Ramp Tiedowns

The East Ramp has a mix of 255 paved pull through and push back tiedowns, excluding transient (Table 2-3). 147 of these have electrical plug ins. Approximately 40 ski equipped aircraft tie down at various locations along the entire length of the East Ramp, requiring airport maintenance staff to maintain a large amount of snow-packed taxiway surfaces on the ramp and on taxiways connecting to Runway 2/20. A small gravel tiedown area for 20 aircraft is located adjacent to the floatpond, west of Floatpond Road. FAI has seen a reduction in tiedown demand over the last decade. 209 of the 275 tiedowns are occupied; 66 are vacant. In addition, FAI maintains 54 transient tiedowns, including 39 paved on the East Ramp and 15 gravel in the Air Park (campground).

Table 2-3. East Side Wheeled/Ski Aircraft Tiedowns

Type of Tiedown Parking	Electricity	No Electricity	Total	Number Occupied
Paved Drive Through	39	12	51	45
Paved Push Back	108	96	204	151
East Ramp Subtotal	147	108	255	196
Gravel Tie-Downs	0	20	20	13
Total Tiedowns	147	128	**275**	**209**
Paved Transient Tiedowns	9	30	39	
Air Park Sites	0	15	15	
Total Transient Tiedowns	9	45	54	

FAI's Air Park Campground, open during the summer, offers itinerant pilots a convenient and low-cost place to park their aircraft and tent camp near the airfield. Amenities include two covered pavilions, barbeque pits, a shower facility, and restrooms. The campground has seen an annual average of 143 paid users over the past four years, mostly during summer months.

Photo 2-4. Air Park Campground

175 floatplane slips and four transient slips are provided on the east shore of the floatpond and in the Floatpond Extension area. Some of the floatplane slips are occupied seasonally by wheeled or ski equipped aircraft or have both floatplanes and wheeled aircraft on the slip. Many slip permittees have constructed small buildings for gear storage and have aviation fuel tanks on the slip. None of the slips have electricity.

Photo 2-5. Floatplane Slips

The airport issues 5-year renewable permits for tiedowns and slips. In addition, there are other private aircraft housed on lease lots, described in Section 2.3.4.

FAI does not have space dedicated or suitable for helicopters to rent tiedowns or use for transient parking. Helicopters previously parked in a grassy area north of the East Ramp. This area has been developed for lease lots.

2.3.4 *Lease Lots*

There are approximately 25 active leases on the Eastside. These include air taxi/charter companies, flight training, fuel providers, aircraft maintenance and parts suppliers, state and federal agencies, the Civil Air Patrol, and various general aviation hangars. The East Ramp Wood Fired Pizza restaurant is an important gathering place on the second story of a hangar and provides an excellent view of the airfield. While the Eastside does not have a full service fixed base operator (FBO), several businesses provide a variety of services for general aviation pilots.

Photo 2-6. Hangars on Lease Lots

Photo 2-7. East Ramp Wood Fired Pizza Restaurant

2.3.5 *Floatplane Ramps*

A floatplane ramp is a sloping concrete platform extending from the shoreline into the water, for launching floatplanes and amphibious aircraft. As shown in Figure 2-2, the Eastside has two floatplane ramps. One on the north end of the floatpond in the Floatpond Extension and another at the south end of the floatpond, near Taxiway B.

Photo 2-8. Floatplane Ramp at Floatpond Extension

2.3.6 *Passenger/Pilot Facilities*

Passengers flying from the Eastside use facilities provided by individual air taxis and charter operators, primarily Wright Air, Warbelow's, and Air Arctic/Northern Alaska Tour Company. The owner of these companies is considering consolidating and upgrading passenger and freight facilities.

A pilot lounge at the base of the ATCT contains restrooms, showers, and public phones (see Figure 2-2) used primarily by transient pilots.

Photo 2-9. Pilot Lounge

2.3.7 *Fencing and Wildlife Control*

The Eastside is separated from the west side of the airport by a security fence that runs west of Runway 2R/20L and west of the floatpond. There is an opening in the fence at Taxiway B. Portions of the Eastside are fenced, but access through lease lots and road access points from University Avenue South are not controlled by fencing and gates. The area east of University Avenue South is discontinuously fenced along the road, but the area sees unauthorized use for recreation and other purposes. Lack of fencing and gates has made the Eastside especially inviting to users and visitors but has contributed to airfield incursions and wildlife hazards on the Eastside and Westside of FAI.

2.3.8 *Access and Parking*

2.3.8.1 Access

Access to the Eastside is primarily via University Avenue South, southwest of the Mitchell Expressway. University Avenue South provides the main access to tiedowns and slips, aviation businesses, the air campground, and the ATCT and Flight Service Station.

Photo 2-10. Sign at Eastside Entrance

University Avenue South continues southward, connecting to the Airport Perimeter Road and to the west side of the airport. Van Horn Road (formerly Cartwright Road), provides secondary access to the Eastside from areas east of the airport. Pedestrians, airport employees, and travelers with luggage walk along the University Avenue South road shoulder, but the shoulder is narrow, particularly on the south end.

Photo 2-11. Informational Sign

FAI has constructed motion-activated gates, decorative arches, and information signs on the Eastside to inform the public that they are entering airport property, to aid in finding airport businesses, and to help reduce airfield incursions. The motion-activated gates are no longer serviceable.

Photo 2-12. Lease Access Sign

Photo 2-13. Motion Activated Gate

FAI is also connected to the Alaska Railroad via tracks that run around the south end of the airport and along Airport Industrial Road. While the rail line has not been used in over 20 years, there is significant interest and ongoing discussions about resuming rail delivery of fuel to the airport.

2.3.8.2 Public Parking

The parking concession at FAI is operated by Republic/Aurora Parking System of Alaska. Republic/Aurora operates two gravel parking lots located east of University Avenue South near the FAA Flight Service Station. Eastside Parking Lots 1 and 2 have 135 and 140 public parking spaces, respectively. A $3 per day (pre-paid) fee is required; payment is via self-serve payment envelopes deposited in drop boxes located at the entrance to each lot. The southern lot is used most frequently, primarily because demand for parking is higher from the lease lots across from the parking lot.

The lots have overhead lighting but do not have electric plug-ins. Lack of plug ins can prevent cars from starting during frequent cold weather in the winter and cold starts also contribute to air quality issues in Fairbanks. Most Eastside tenants also provide limited parking spaces on their lease lots for patrons and employees.

Photo 2-14. Eastside Vehicle Parking Lot

2.3.8.3 Transportation Options

Primary transportation to the Eastside is primarily by private vehicles. Several FAI permitted taxi cab companies and Uber/Lyft provide on-demand service to the Eastside. The Metropolitan Area Commuter System (MACS) is the public bus transportation system for the Fairbanks North Star Borough. The Yellow Line bus route serves the FAI passenger terminal; however, the bus route does not serve the Eastside. MACS conducted a survey from July 1, 2007, to June 30, 2008, to determine bus use at the airport and found that 606 individuals got on or off the bus at FAI during that timeframe. FAI rental car companies require Eastside passengers to pick up rental cars at the passenger terminal on the west side; a rental car shuttle is not available.

Photo 2-15. Taxi Service on the Eastside

2.3.9 *Utilities*

Utilities serving the Eastside include water, sewer, electricity, telephone/Internet, and solid waste disposal. FAI utility providers are listed in Table 2-4. FAI maintains maps of utility system locations on airport property. Additional details about FAI utilities can be found in Section 2.2.7 of the 2014 FAI Master Plan. Flush toilets with showers and sinks serve users of the air campground in the summer. This public toilet/shower uses a holding tank which is pumped on a regular basis and does not discharge on-site. According to the 2014 Master Plan, portions of the Eastside sewer system is U-lined,

which suggests that the sewer line was compromised at some point, necessitating repairs.

Table 2-4. Utility Service Providers

Utility	Provider
Water	College Utilities
Sewer	College Utilities / Golden Heart Utilities
Electricity	Golden Valley Electric Association
Solid Waste	Various - FNSB Landfill
Telephone/Internet	GCI / ACS
Natural Gas	Fairbanks Natural Gas (gas service not currently provided on Eastside)

Source: 2014 MP

2.3.9.1 Solid Waste

Solid waste generated at FAI is disposed of at the FNSB landfill, which is located approximately five miles east of FAI (2014 MP). FAI uses Waste Management, Inc., to collect and dispose of their solid waste. The landfill encompasses a total of 252 acres with a projected capacity through the year 2048. The airport and tenants can recycle aluminum, cardboard, paper, electronics, and plastic at the landfill.

Individual tenants at the airport can select their own solid waste collection provider. Solid waste collection companies in Fairbanks that individual tenants may use include:

- Waste Management, Inc.
- Trash Talk, Inc.
- Alaska Waste Interior, LLC
- B&P Waste Services, Inc.
- Drake Sanitation Services
- University Refuse

2.3.10 *Aircraft Fueling*

Aircraft fueling via truck and card-lock pump fueling facilities is provided on the Eastside from Alaska Aerofuel and Crowley. Crowley's fueling facility is on the south end of the floatpond, near the south floatplane ramp, on Float Pond Road. This facility serves floatplanes and ski/wheeled aircraft. Crowley indicates that not having access to a fiber optics cable is hindering reliable communications for the credit card payment system. Currently, Crowley is evaluating updates and/or possible relocation to a better site. Alaska Aerofuel's facility is on subleased property, near the transient apron and pilots lounge and serves both wheeled and ski aircraft. Alaska Aerofuel provides truck fueling services to any East Ramp parking location. Many lease lots and floatplane slips also have fuel stored in small tanks on their properties.

Photo 2-16. Crowley Fuel Station on Floatpond

2.3.11 *FAA Facilities*

2.3.11.1 Air Traffic Control Tower

FAI's ATCT located on the west side of University Avenue is staffed 24 hours per day, 7 days a week. The tower facility was recently evaluated by the FAA and determined to be adequate for FAA needs. Office space at the base of the tower is leased by the FAA from the airport. This space is old and expensive to maintain. The ATCT uses an ASR11 radar to track aircraft. This radar is located approximately nine miles east of the airport near Badger Road and enables radar services to all area airports

Photo 2-17. Air Traffic Control Tower on the East Ramp

2.3.11.2 Flight Service Station

The Fairbanks Flight Service Station (FSS) is on the Eastside, east of University Avenue South. It is a hub facility for the Northway, Nome, Kotzebue, Barrow, and Deadhorse satellite Flight Service Stations. The FAI FSS provides pre- and inflight weather briefings, handles flight plans, distributes NOTAMs, relays airport advisories, and provides emergency services. When a satellite FSS facility closes for the night, the FAI FSS takes over most of these functions.

Photo 2-18. Flight Service Station on Eastside

2.4 Land Use/Zoning

Land uses on the Eastside are mostly GA-related and include the airfield runways, taxiways, and tiedowns, an air campground, aircraft maintenance, aircraft storage, flight training, air taxi/charter businesses, as well as federal and state agency facilities (Civil Air Patrol, Fish and Wildlife Service, FAA tower etc.). Airport land east of University Avenue South includes the FAA Flight Service Station, two parking lots, a gravel pit and mostly undeveloped land.

Land to the west of the Eastside is occupied by FAI's Westside facilities, including Runway 2L/20R, main terminal, parking lots, cargo aprons, and lease lots. Land uses to the east are industrial and commercial sites. Lands south and southwest are owned by the military and are largely undeveloped, as the Tanana River separates them from the Fairbanks road system. Land uses to the north and northeast are a mix of residential and commercial.

The Tanana River and the Tanana River levee limits airport growth to the south and southwest, while the Mitchell Expressway limits growth to the north. Airport facilities on the west side prevent expansion to the west. Airport land east of University Avenue South is slated for long-term airport expansion. The airport owns several undeveloped parcels north of Mitchell Expressway.

FAI property is zoned as Light Industrial by the FNSB. Generalized zoning on and around the airport is depicted in Figure 2-3 (2014 Master Plan).

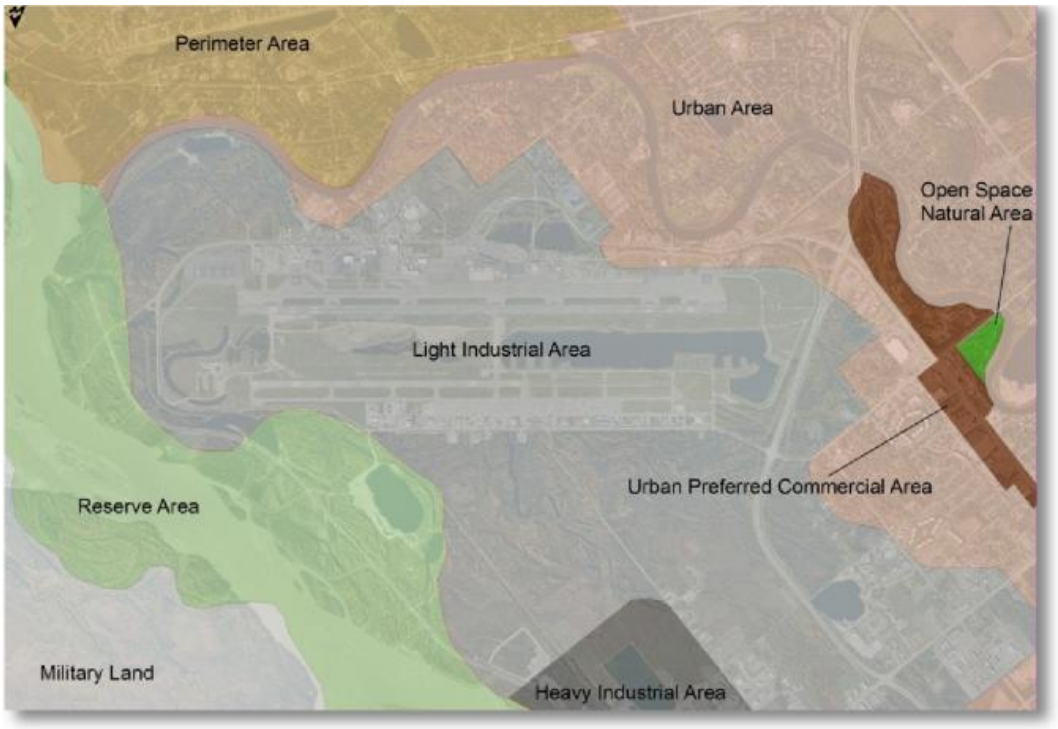


Figure 2-3. **Generalized Land Use Around FAI (2014 MP)**

2.5 Environmental Overview

An Environmental Overview for FAI can be found in Section 2.4 of the FAI 2014 Master Plan. That section details the environmental setting on and around FAI and identifies environmental features that may have the potential to influence future planning efforts at the airport. Features that are inventoried include air quality, floodplains, fish and wildlife resources, hazardous materials, historic resources, water quality, and wetlands. Of particular interest for the Eastside Plan are the sections on weather, floodplains,

contamination, floatplane facility water quality, wetlands, and wildlife hazards on the airport.

2.6 Maintenance and Operations

Airport maintenance facilities and equipment used on both the west and east sides of FAI are described in Section 2.8.1 of the 2014 FAI Master Plan. Of particular interest for the Eastside Master Plan are procedures for snow removal.

Airport staff clear snow in the following priority order:

1. Primary runway, Taxiway A, ARFF access, and terminal area apron
2. Taxiway B, Runway 2R/20L, and Taxiway T
3. Public parking areas, East Ramp, and cargo apron
4. Access roads

FAI maintenance personnel do not remove snow from lease lots or tiedowns; this is the responsibility of the individual lessee. On the east side of the airport, staff use a custom drag to pack snow on the ski strip, Taxiway D, and much of the East Ramp and Taxiway C to accommodate ski-equipped aircraft (Figure 2-4). This packed snow is then scraped away in the spring when the snow begins to melt.

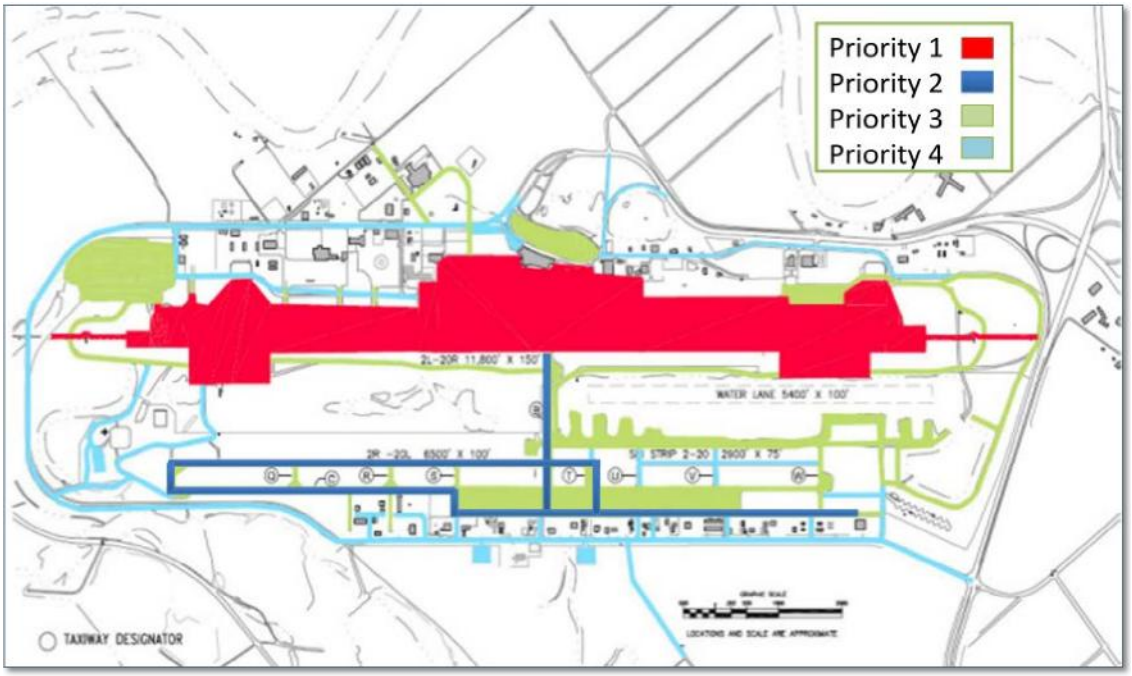


Figure 2-4. Snow Removal Priorities (FAI Airport Certification Manual, 2018)

Airport police and firefighting activities at FAI are carried out by the Airport Police and Fire Department who are based in facilities on the Westside of the airport. These staff

respond to law enforcement and aircraft emergencies on both the Westside and Eastside of FAI.

A boat house with equipment to respond to an aircraft emergency on the floatpond is located on the south end of the floatpond. A fire training facility and a police shooting range located near the end of Runway 2R/20L are slated for near-term closure. Additional information about FAI police and fire equipment and facilities can be found in Section 2.2.8 of the 2014 FAI Master Plan.

2.7 Related Plans, Programs, and Projects

2.7.1 *FAI Master Plan Update, 2014*

The primary recommendations of the 2014 Master Plan Update relating to the Eastside include the CIP projects in Table 2-5. The Taxiway B Resurfacing & Safety Enhancements and the Lease Lot Expansion – Phase 1 are nearly completed and the GA Taxiway, Apron Repaving and the Runway 2R/20L Rehabilitation are slated for construction in the next five years.

Table 2-5. Summary of 2014 Master Plan CIP Projects for the Eastside

Project	Proposed Timing	Estimated Cost
Float Pond Road Gate	1-5 years	$900,000
Taxiway B Resurfacing & Safety Enhancements	Completed	$4,900,000
Lease Lot Expansion – Phase 1	Under way	COMPLETE
Float Pond Study	1-5 years	$350,000
Runway 2R/20L Rehabilitation	1-5 years	$13,500,000
Airport Master Plan & ALP Updates	6-10 years	$1,500,000
GA Taxiway and Apron Repaving	1-5 years	$15,000,000
Wetlands Management Plan	11-20 years	$100,000
Taxiway D & Lease Lot Expansion – Phase 2	N/A	$1,200,000
Lease Expansion – Phase 3	N/A	$ TBD

Source: 2014 Master Plan

2.7.2 *Other Related Plans*

The following are a few highlights about the Eastside from several other related plans, programs and projects.

Regional Comprehensive Plan, 2005 - A goal of the comprehensive plan is to protect active airports from the encroachment of incompatible land uses and facilitate airport expansion.

FAI Near-Term Improvements Environmental Assessment (EA), 2005 – This EA refers to an agreement by DOT&PF to discuss additional mitigation for wetland impacts when development east of University Avenue begins (page 3 of the Finding of No Significant Impact – Wetlands mitigation measures).

Fairbanks Metro 2035, "A Plan to Keep You Moving", 2010 - This plan recommends the upgrade of Van Horn Road west of Peger Road to enhance freight mobility between south Fairbanks and the FAI Eastside.

AIAS Planning Study, 2013 – This study for ANC, FAI and LHD included forecasts of aviation activity, which were used for the 2014 Master Plan and for this Eastside MP.

2.8 Master Plan Issues

FAI staff developed an initial set of Eastside MP issues based on their prior work with airport users and the FAA. These issues were further vetted during interviews, a project survey, and during the first Eastside MP Advisory Committee meeting. Detailed results of the survey and Advisory Committee ranking of issues can be found in Appendix A: Public Involvement.

Issue ranking from the user survey and Advisory Committee are summarized in Table 2-6.

Table 2-6. User Survey and Advisory Committee Priority Issues, 2018

User Survey Top Rated Issue/Need	Consistent with Advisory Committee?
More t-hangars	
Aircraft wash facility	x
More pull through tiedowns	x
More tiedown and slip electric service	x
Reduce incursions	x
More conventional hangars	
More slips	x
Snow storage	x
GA facility	x
Lower Rated Issue/Need	
Aircraft deicing area	x
University Drive improvements	
Helicopter parking area	x
Better transient parking	

This page intentionally left blank.

3.0 FORECASTS

This 2018 FAI Eastside air traffic forecast is an abbreviated forecast primarily oriented toward determining overall growth of Eastside tiedown, slip, and lease lot demand. It was developed using the recent 2014 FAI Airport Master Plan air traffic forecast as a starting point. The 2014 FAI Airport Master Plan forecast was derived from the AIAS Planning Study forecast completed in 2013. Both prior forecasts were approved by the FAA.

Aircraft operations forecasts were developed for air carriers (commercial scheduled passenger and cargo service), air taxi (commercial, corporate, and agency on-demand charter service), and general aviation (private aircraft). GA and air taxi Eastside traffic were estimated with assistance from airport management and FAI Air Traffic Control and assumes that 95 percent of single and multi-engine piston aircraft, 10 percent of turboprops, and 0 percent of jets using FAI operated from the Eastside. These percentages were applied to 2018 data developed in the 2014 FAI Master Plan forecast. Because 2018 data was not yet available for air carrier traffic, estimates of use on the Eastside were obtained from airport management using actual operations by specific carriers and aircraft for calendar year 2017 (U.S. DOT commercial traffic data), and forecasted to 2018 using growth rates from the 2014 FAI forecast. Military aircraft do not use the Eastside of FAI. Growth rates of operations over time were obtained from the 2014 forecast and extended out in time to forecast Eastside traffic to 2040 (Table 3-1).

Table 3-1. Operations Forecast – FAI Eastside, 2018 – 2040

Year	Air Carrier*	Air Taxi*	General Aviation*	Totals
Base Year - 2018	18,156	5,911	69,900	93,967
2020	18,442	5,965	71,030	95,436
2025	19,641	6,128	75,055	100,824
2030	20,819	6,215	77,690	104,724
2035	21,964	6,309	81,529	109,802
2040	23,172	6,410	85,567	115,149
Average Annual Growth**	1.3 percent	0.4 percent	1.0 percent	1.0 percent

Sources: 2014 FAI Airport Master Plan by PDC, Inc., U.S. DOT Commercial Air Traffic Data, Interviews with FAI Air Traffic Control and airport management, and Southeast Strategies.
*Definitions:
Air carrier includes commercial businesses providing scheduled passenger and/or cargo air service.
Air taxi includes commercial businesses providing on-demand charter air service, as well as non-commercial charter service, such as flights operated by agencies and corporations.
General aviation includes private aircraft.
**These growth rates are slightly different than the operations growth rates in the 2014 FAI Airport Master Plan because they consider a different mix of aviation and aircraft types specific to the FAI Eastside.

3.1 Based Aircraft

Aircraft storage at FAI Eastside includes tiedowns (with or without electricity, both pull through and back in) and floatplane slips provided by the airport and private hangars. There are 275 permanent tiedowns and 175 permanent float plane slips, plus transient parking for 39 aircraft in tiedowns and 4 in float plane slips. An Air Camping Park provides 15 more transient tiedowns. More than 20 private hangars (many of which house multiple aircraft) located on the Eastside Apron accommodate private and business aircraft. Official airport records for 2018 report ten vacancies in floatplane slips because the slips are used only part of the year, seasonal transitions into and out of the floatplane pond may appear as vacancies during part of the year and several spaces are unuseable. Therefore, this analysis counts these ten floatplane slips as occupied. The master plan survey and representatives of FAI report that demand for floatplane slips is high, and vacancies are rare. Hangars are privately built, owned, and are fully occupied and in demand.

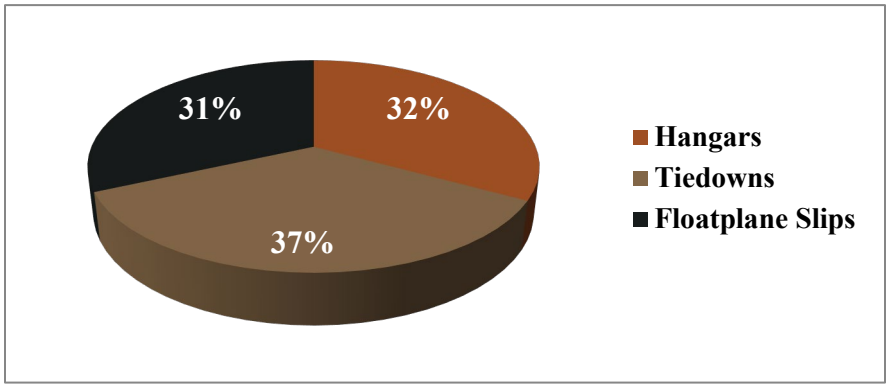
Table 3-2 shows a total of 566 aircraft based and stored on the East Side in 2018. 384 aircraft are using permanent tiedowns (195) or floatplane slips (175) at FAI Eastside. Hangars house 202 aircraft, 20 of which use floatplane slips in summer, for a total of 182 additional based aircraft at FAI Eastside. The estimated 2018 total based aircraft on the FAI Eastside is 566. 66 tiedowns are vacant and 58 tiedowns and slips are provided for transient aircraft.

Table 3-2. 2018 Aircraft Storage at FAI Eastside

Type of Storage	Occupied	Vacant	Transient	Total
Tiedown - Unpaved	13	7	0	20
Tiedown - Drive Through, no electric	8	4	4	16
Tiedown - Drive Through with electric	37	2	9	48
Tiedown - Back In, no electric	62	34	26	122
Tiedown - Back In with electric	89	19	0	108
Tiedown - Air Camping Park, no electric	0	0	15	15
Tiedown subtotal	**209**	**66**	**54**	**329**
Floatplane Slip	175	0	4	179
In Hangar	182	0	0	182
GRAND TOTAL*	**566**	**66**	**58**	**690**

Source: FAI Airport staff, and interviews with other knowledgeable parties.
*38 of the aircraft in tiedowns or floatplane slips are ski-equipped. 20 of the aircraft in hangars are on floats, and occupy slips in summer (in this table, they are counted in floatplane slips).

As shown in Figure 3-1, about 37 percent of all aircraft based at FAI Eastside are on tiedowns, 32 percent are in hangars, and 31 percent are on slips.



Sources: Airport Master Record for FAI, FAI Airport tiedown records, interviews with FAI Air Traffic Control, Southeast Strategies and knowledgeable parties based at FAI.

Figure 3-1. Based Aircraft Locations – FAI Eastside, 2018

Information gathered from interviews with FAI tenants and other knowledgeable parties and from the master plan survey indicates that there is strong demand for hangar space, pull through tiedowns with electricity and slips with electricity at FAI Eastside. Hangars located at FAI Eastside are all at capacity, and requests for hangar space are frequent.

Private airparks and airstrips in the Fairbanks and North Pole areas provide tiedowns for residents and sometimes for rent to the general public. Some of these facilities also have water landing surfaces with floatplane slips. Interviews with management of some private facilities revealed that occupancy in tiedowns has been dropping slightly over time, and there is available tiedown space at most private airports that rent to the general public. However, even private floatplane facilities are full, and there is high demand for hangar space. One facility with hangar space for 24 aircraft is full and has a waiting list of 12 aircraft in case hangar space becomes available.

The forecast of based aircraft at the FAI Eastside begins with the 566 based aircraft estimated for base year 2018. Growth rates for based aircraft at all of FAI developed from the 2014 FAI Airport Master Plan were used to forecast Eastside based aircraft and extended to 2040. Table 3-3 shows that Eastside based aircraft are forecasted to grow at an annual average rate of 1 percent per year.

Table 3-3. Based Aircraft Forecast – FAI Eastside, 2018 – 2040

Year	Based Aircraft
2018	566
2020	577
2025	607
2030	638
2040	705
Average Annual Growth**	1.0 percent

Sources: Airport Master Record for FAI, FAI Airport tiedown records, interviews with FAI Air Traffic Control and other knowledgeable parties based at FAI, and Southeast Strategies.
*This total assumes 20 aircraft that are in floatplane slips in summer occupy hangars in winter.
**This growth rate is slightly different than the based aircraft growth rate in the 2014 FAI Airport Master Plan because it considers a different mix of aircraft types specific to the FAI Eastside.

3.2 Fleet Mix

The aircraft based at the FAI Eastside are mostly single engine piston aircraft such as Piper Cubs and Cessna 206s and 207s, and single engine turbo aircraft such as Cessna Caravans. There are also a few multi engine piston aircraft, such as Piper Navajo, based on the Eastside, and one helicopter. The majority of operations at the FAI Eastside are by single engine piston and turbo aircraft. However, two commercial carriers used twin engine piston aircraft that accounted for over 9,000 operations on Runway 2R/20L in 2017.

Table 3-4. FAI Eastside Operations by Aircraft Category - 2018

Aircraft Category	Commercial	Air Taxi/other	GA	Total
Single Engine Piston	578	3,870	67,777	72,225
Twin Engine Piston	9,516	1,879	2,005	13,400
Turboprop	8,061	162	119	8,342
TOTAL	**18,156**	**5,911**	**69,900**	**93,967**

Sources: 2014 FAI Airport Master Plan by PDC, Inc., U.S. DOT Commercial Air Traffic Data, Interviews with FAI Air Traffic Control and airport management, and Southeast Strategies.

Commercial operations in 2017 by aircraft (from U.S. DOT Commercial Air Traffic Data) were forecasted to 2018 using growth rates from the FAI 2014 forecast and are presented in Table 3-5. While commercial aircraft have fewer operations at FAI Eastside than GA aircraft, the commercial category has a greater percentage of larger and faster aircraft using Runway 2R/20L.

Table 3-5. FAI Eastside Commercial Operations by Airport Reference Code (ARC) - 2018

Aircraft	2018 Operations	ARC	Type
Beech Bonanza	224	A-I	Single Engine Piston
Helio H-250/295/395	59	A-I	Single Engine Piston
Cessna 206/207/209/210	297	A-I	Single Engine Piston
Cessna Caravan	8,061	A-II	Single Engine Turboprop
Piper PA-31	9,516	B-I	Twin Engine Piston
TOTAL	**18,156**		

Sources: 2014 FAI Airport Master Plan by PDC, Inc., U.S. DOT Commercial Air Traffic Data, Interviews with FAI Air Traffic Control and airport management, and Southeast Strategies.

This page intentionally left blank.

4.0 FACILITY REQUIREMENTS

The facility requirements chapter defines the existing and future facility needs and development standards that should be addressed in airport development alternatives in Chapter 5. Needs are based on an evaluation of whether the current facilities meet FAA planning and design standards for the aircraft that use the Eastside, needs related to meeting forecasted demand, maintenance issues and needs, and input from airport staff and users about services and facilities needed.

4.1 Design Aircraft/Runway Design Codes

The design aircraft is the most demanding aircraft with at least 500 annual operations on a runway. As discussed in the forecasts, the design aircraft for Runway 2R/20L and the taxiways serving it are the Piper PA-31 Navajo (Runway Design Code [RDC] B-I), and Cessna Caravan (A-II). The 2014 Master Plan identified the Beech 1900 as the design aircraft; however, that aircraft currently uses Runway 2L/20R, and only occasionally uses Runway 2R/20L today. The Runway Design Code for Runway 2R/20L is B-II.

The design aircraft for Runway 2/20 and Waterlane 2W/20W are the Cessna 180, DeHavilland Beaver, and Piper PA-18 Super Cub, with an A-I RDC. This is a change from the B-II RDC shown in the 2014 Master Plan and ALP.

Recommendation:

	Design Aircraft	RDC
Runway 2R/20L	Piper Navajo, Cessna Caravan	B-II – 4000
Runway 2/20	Cessna 180, DeHavilland Beaver, Piper PA-18 Super Cub	A-I Small
Runway 2W/20W	Cessna 180, DeHavilland Beaver, Piper PA-18 Super Cub	A-I Small

4.2 Airfield Capacity

A key part of the 2014 FAI Master Plan was to evaluate the capacity of the entire FAI runway system. This included an evaluation of the capacity implications of scenarios where a portion of ANC's international cargo flights were shifted to FAI. This cargo shift was considered because the ANC Master Plan recommended a shift of cargo to FAI as a way to eliminate or delay the need for a new runway at ANC. This capacity analysis was discussed in Section 4.2.1 of the 2014 FAI MP and in the AIAS Planning Study.

The 2014 FAI MP made the following conclusions:

- Runway 2L/20R will have roughly 50,000 annual operations by the end of the 20-year planning period
- The capacity (Annual Service Volume) of the runway is 210,000 annual operations
- With a shift of 50 percent of ANC's international cargo flights, annual operations would grow to over 100,000 by the end of the 20-year planning period
- Even if this shift were to occur, FAI would remain well under the thresholds required for planning for additional runway capacity (130,000 operations) and building additional runway capacity (170,000 operations).

This analysis is important to the Eastside because if future demand were to approach the capacity of Runway 2L/20R, this would likely trigger the need to divert air carrier and other operations to Runway 2R/20L on the Eastside. Section 4.2.4 of the 2014 Master Plan describes the considerable runway length and geometric and separation standards that would be required to upgrade Runway 2R/20L for scheduled air carrier use. Primary considerations would be possible lengthening and widening the runway, expanding the runway safety area, object free area and runway protection zone, increasing the separation between Taxiway C and the runway, and relocating the gravel strip.

Based on all of the above, the study concluded that FAI's runways have excess capacity, even if 50 percent of ANC's cargo flights were shifted to Fairbanks. Capacity enhancing upgrades to Runway 2R/20L will not be necessary during the 20-year planning horizon. However, it would be prudent to retain the flexibility to upgrade Runway 2R/20L for air carrier use in the long term, should operations ever reach the levels described above.

Recommendation: No runway capacity enhancements are required. Retain flexibility to ultimately upgrade Runway 2R/20L for air carrier use, which would involve shifting the ski strip and tiedowns to the east side of University Avenue South.

4.3 Runway 2R/20L

4.3.1 *Runway Length*

Section 4.2 of the 2014 FAI MP evaluated potential upgrades to Runway 2R/20L for air carrier use; however, that plan concluded that Runway 2R/20L did not need to be lengthened for air carrier use to address runway capacity needs during the 20-year planning horizon. During the Eastside Master Plan, the need to use Runway 2R/20L on an occasional basis as an alternate air carrier runway was also examined. After consideration of the high costs of upgrading the runway and the likelihood it would be rarely used by air carrier aircraft, the airport and airlines agreed that this upgrade was not necessary. However, as noted above it may be prudent to retain the long-term option to expand Runway 2R/20L into a full air carrier runway.

Advisory Circular 150/5325-4B was used to estimate the runway length needed for Runway 2R/20L. The runway length analysis used Figure 2-2. *Small Airplanes Having 10 or More Passenger Seats based on the Cessna Caravan, with 10 to 14 passenger seats.* Based on FAI's elevation of 439 feet and mean daily maximum temperature of approximately 75 degrees, Runway 2R/20L's required runway length is approximately 4,000 feet. This is considerably less than the current 6,500 foot length.

Recommendation: Reduce Runway 2R/20L to an approximately 4,000 foot runway length.

4.3.2 *Runway Standards*

Table 4-1 compares the existing dimensions for Runway 2R/20L to FAA geometric and separation standards. Besides having greater length than needed (discussed above), the runway exceeds standards for runway width and shoulder width, runway centerline to hold position, and runway centerline to parallel taxiway centerline and aircraft parking. The runway meets all other geometric and separation standards.

Table 4-1. Runway 2R/20L Geometric and Separation Standards

Airfield Components	Existing	B-II
Runway Design		
Runway Width (ft.)	100	75
Shoulder Width (ft.)	25	10
Blast Pad Width (ft.)	95	95
Blast Pad Length (ft.)	150	150
Crosswind Component (knots)	13	13
Runway Protection		
Runway Safety Area (RSA)		
Length beyond departure end (ft.)	300	300
Length prior to threshold (ft.)	300	300
Width (ft.)	150	150
Runway Object Free Area (ROFA)		
Length beyond runway end (ft.)	300	300
Length prior to threshold (ft.)	300	300
Width (ft.)	500	500
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,000/1,700	1,000/1,700
Inner Width (ft.)	500/1,000	500/1,000
Outer Width (ft.)	700/1,510	700/1,510
Acres	13.77/48.98	13.77/48.98
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	500
Outer Width (ft.)	700	700
Acres	14	14
Runway Separation		
Runway centerline to:		
Holding position (ft.)	250	200
Parallel Taxiway/Taxilane centerline (ft.)	375	240
Aircraft Parking Area (ft.)	420	250

Recommendation: Adjust Runway 2R/20L runway width and distance to hold position to B-II standards.

4.4 Runway 2/20 (Ski 2/20)

4.4.1 *Runway Length*

The 2014 Master Plan did not evaluate the runway length required for Runway 2/20, but the ALP recommended retaining the existing runway length. Based on Advisory Circular 150/5325-4B, Figure 2-1. Small Airplanes with Fewer than 10 Passenger Seats and FAI's elevation of 439 feet and mean daily maximum temperature of approximately 75 degrees, Runway 2/20 requires a runway length of approximately 3,000 feet to meet 95 percent of the aircraft with fewer than ten passenger seats. Given that this runway serves a small percentage of the aircraft fleet with fewer than ten passenger seats, the existing 2,900-feet runway length is adequate.

Recommendation: Maintain Runway 2/20's existing 2,900-foot runway length.

Photo 4-1. Skiplane Landing on Runway 2/20

4.4.2 *Runway Standards*

Table 4-2 below compares the existing dimensions for Runway 2/20 based on its current B-II standards to proposed A-I Small Aircraft standards. The existing runway exceeds most of the standards required for A-I Small Aircraft.

Table 4-2. Runway 2/20 Geometric and Separation Standards

Airfield Components	Existing (B-II)	A-I Small
Runway Design		
Runway Width (ft.)	75	60
Runway Safety Area (RSA)		
Length beyond departure end (ft.)	300	240
Length prior to threshold (ft.)	300	240
Width (ft.)	150	120
Runway Object Free Area (ROFA)		
Length beyond runway end (ft.)	300	240
Length prior to threshold (ft.)	300	240
Width (ft.)	500	250
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	250
Outer Width (ft.)	700	450
Acres	14	8
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	250
Outer Width (ft.)	700	450
Acres	14	8
Runway Separation		
Runway centerline to:		
Holding position (ft.)	200	125
Parallel Taxiway/Taxilane centerline (ft.)	375	150
Aircraft Parking Area (ft.)	420	125

Recommendation: Reduce Runway 2/20 to A-I Small Aircraft standards.

4.5 Waterlane 2W/20W

Planning and design of seaplane bases is guided by FAA's Seaplane Base Advisory Circular AC 150/5395-1B, which was updated in 2018, but which is less detailed than guidance for land airport facilities. The FAA recognizes that floatplanes have unique operational requirements which differentiate them from ground-maneuvered aircraft. Floats create additional weight and drag compared to wheels. Maneuvering floatplanes on water is also more challenging and requires additional space, especially in windy conditions.

4.5.1 *Length and Width*

The 2014 Master Plan did not evaluate the length and width required for Waterlane 2W/20W, but the ALP recommended retaining the existing 5,400-foot waterlane length and expanding the width to 200 feet. The Seaplane Base AC recommends at least a

200-foot-wide waterlane, but recognizes this may not be possible where a waterlane is within a constrained water body like at FAI.

Recently FAI, FAA/ Air Traffic Control (ATC) staff and Runway 2W/20W users formed a working group to discuss the waterlane length and width. Based on those discussions, the group concluded the waterlane length should remain unchanged and the published width should be 150 feet to match the width of the existing threshold marker buoys. The evaluation of length was considered because the approach to 2W clears TW B by only about 20 feet. In certain lighting and water conditions, particularly 'glassy water' that can reduce visual altitude cues, pilots often make low approaches to maintain visual reference with surface features. FAA recently required installation of hold lines/signage on taxiway B to hold traffic short of 2W when aircraft are arriving from or departing to the south. The working group concluded that shortening the waterlane was not desirable and could result in restricted aircraft payloads. A waterlane narrower than the 200-foot FAA standard was considered adequate by the working group who felt meeting FAA's preferred 200-foot width would reduce the space available for taxiing aircraft, creating a new safety concern. The group further recommended that all water surface west of the (channel) easternmost buoys be controlled by ATC and that the airport update synchronize all publications/maps and install a variety of guidance signage on the floatpond to reduce wrong direction takeoffs.

Recommendation: Maintain existing 5,400-foot waterlane length and widen to 150-foot width. Create and install floatpond pilot guidance signage.

4.5.2 *Standards*

The 2014 Master Plan and ALP proposed a B-II RDC for Waterlane 2W/20W, even though B-II aircraft do not use the facility. This may have been because all of the runways were B-II. This master plan recommends A-I Small with the standards shown in Table 4-3. As noted above, a 150-foot waterlane width is proposed due to the narrow-constrained water channel, to allow adequate space for taxiing seaplanes.

Table 4-3. Runway 2W/20W Geometric and Separation Standards

Airfield Components	Existing (BII)	A-I - Small
Waterlane Design		
Waterlane Width (ft.)	200	150
Water Operating Area Depth	Variable	4-6
Waterlane Turning Basin	None	200
Waterlane Turning Basin to Nearest Object	None	50
Runway Object Free Area (ROFA)		
Length beyond runway end (ft.)	None	240
Length prior to threshold (ft.)	None	240
Width (ft.)	None	250
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	250
Outer Width (ft.)	700	450
Acres	14	8
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	250
Outer Width (ft.)	700	450
Acres	14	8

Recommendation: Reduce Waterlane 2W/20W to A-I Small Aircraft standards, with a 150 foot waterlane width.

4.6 Taxiways

Section 4.2.2 of the 2014 Master Plan investigated design standards deficiencies of the Eastside taxiways. The deficiencies included taxiways that:

- Provide direct access from the East Ramp or lease lots to the runways (taxiways B, R, S, T, U, V, W)
- Intersect the middle third of the runways (taxiways B, R, V)
- Are aligned with a runway (taxiway T)
- Have excess pavement (taxiway T) and excess taxiway fillet pavement (taxiways Q, R)
- Lack islands at the holding bays along taxiway C's intersections with taxiways B, and W.

The 2014 Master Plan does not explicitly describe how most of these deficiencies should be addressed, other than that taxiway deficiencies adjacent to Runway 2R/20L and the East Ramp should be addressed when projects are completed for this runway and apron. The ALP recommends taxiways R, S, and V be exit only taxiways because they

intersect at the middle third of the runways. This master plan should investigate alternatives for the taxiways using the design standards shown in Table 4-4.

In addition to the above, Floatpond Road sees regular use by wheeled or ski equipped aircraft whose wingtips are too close to buildings and parked aircraft along the road. The master plan should consider options to upgrade this road to a taxiway and address wingtip clearance issues.

Photo 4-2. Float Pond Road

Sections 5.1 and 5.3 of the 2014 Master Plan included an extensive investigation of Taxiway B, the taxiway that connects the east and west sides of FAI. This included alternatives to remove and replace the taxiway, reroute aircraft to taxiway T, and shorten Runway 2R/20L. Near the end of the alternatives evaluation, the FAA Runway Safety Office endorsed improving Taxiway B in its current location. The 2014 Master Plan recommended Taxiway B be resurfaced, islands be added on the aprons at the east and west entrances of Taxiway B, additional signs, markings and runway guard lights, and a gate at the southern end of Float Pond Road. The 2014 MP also supported a gate on Taxiway B, but following the Master Plan, the FAA concluded that it would not support an FAA-operated gate on Taxiway B. The 2014 MP did indicate that if Runway

2R/20L were to be needed and upgraded for air carrier operations or if FAI saw increases in ADG IV and larger aircraft, then the use/location of taxiway B should be reconsidered.

Table 4-4. Taxiway Existing/Recommended Design Standards

Taxiway	ADG Existing/ Recommended	TDG Existing/ Recommended	Width (feet) Existing/ Recommended	TOFA (feet) Existing/ Recommended	Comments/Issues
B	II/II	2/2	50/50	131/131	Improvements under way; identify possible long-term alternative
C	II/II	2/2	50/35	131/131	Add island on south end where it connects to Runway 2R/20L; East Ramp aircraft parking in TOFA
D	II/II	2/2	40/35	115/115	Straighten taxilane; East Ramp aircraft parking in taxiway OFA; considerable vehicle use of TW D
Q	II/II	2/2	35/35	131/131	Reduce excess fillet pavement
R	II/II	2/2	35/35	131/131	Address direct access to apron and middle third of runway, reduce excess fillet pavement
S	II/II	2/2	35/35	131/131	Address direct access to apron
T	II/II	2/2	~200/~200	131/131	Address direct access to apron, aligned taxiway, island between aircraft
U	II/I	2/1	35/25	131/89	Address direct access to apron
V	II/I	2/1	35/25	131/89	Address direct access to apron and middle third of runway
W	II/I	2/1	~200/~200	131/89	Island between aircraft

The FAA Seaplane Base AC does not provide explicit guidance on separation distances between a waterlane and its parallel taxi channel. However, it does recommend a 200-foot-wide waterlane plus a 125- to 150-foot-wide taxi channel. If an aircraft taxiing in one direction in the taxi channel is passed by another aircraft taxiing in the opposite direction, the AC recommends 50-foot-wide wingtip clearance for these passing aircraft. At FAI, aircraft passing in the taxi channel is rare, is managed by the tower, and aircraft can pull out of the taxi channel into the fingers if they need to, so the 50-foot wingtip clearance is not applicable. With this information, it appears the Advisory Circular supports an overall waterlane/taxi channel width of at least 200 + 150 = 350 feet. The current floatpond is approximately 500 feet wide so it appears to meet these standards. The airport design AC 150/5300-13A recommends a 150-foot runway to parallel taxiway separation for A-I Small airports on land. While this master plan recommends a 150-foot-wide waterlane, the 200 foot wide waterlane recommended in the Seaplane Base AC plus a 150-foot-wide taxi channel would provide a waterlane centerline to taxi channel centerline separation of over 150 feet, so the seaplane facility also meets the 150-foot runway to parallel taxiway separation for land airports. Pilots have expressed some concerns that if the waterlane is widened to 200 feet it would reduce space for taxiing floatplanes and consequently, as discussed in Section 4.5.1, the waterlane width was held at 150 feet. The master plan should maintain or expand the current floatplane channel width to provide adequate space for taxiing floatplanes clear of the waterlane and parked aircraft. The taxi channels between future floatplane slip fingers should be at least 150 feet wide.

Recommendation: Address taxiway design standards issues in Table 4-4. Upgrade Floatpond Road adjacent to slips to a taxilane. Identify location of a potential ultimate replacement for Taxiway B. Maintain or expand existing space for taxiing floatplanes in the floatpond channel and provide at least a 150-foot taxi channels between floatplane slip fingers.

4.7 Floatplane Pull Out Ramps

There are two floatplane ramps at FAI, a south floatplane ramp near Taxiway B and a north floatplane ramp in the Float Pond Extension. There are no concerns with the north floatplane ramp. The south floatplane ramp is in shallow water, making launches of floatplanes somewhat problematic. When the south floatplane ramp and the adjacent floatplane fueling area are busy, aircraft holding to use these facilities taxi slowly under power near the south end of the waterlane, sometimes creating safety concerns for arriving and departing floatplanes. There is very tight space in this area.

Recommendation: The master plan should examine options for relocating the south floatplane ramp to eliminate conflicts with arriving/departing aircraft.

4.8 Wheeled/Ski Tiedowns

4.8.1 *East Apron Geometry*

As noted in Table 4-4 aircraft on the East Ramp are currently parked within the taxiway OFA's for taxiways C and D. The taxilane OFA's on the apron vary in width, but most appear to be about 50 feet wide, which is far below the ADGI taxilane OFA width of 79 feet. Based on AC 150/5300-13A, a 50-foot-wide taxilane OFA would be adequate for an aircraft of up to 25-foot wingspan. There are only a few aircraft on this apron with a 25-foot or less wingspan, so these taxilanes need to be widened. Approximately 184 of the aircraft tied down on this apron have wingspans of 37 feet or less, which would allow for taxilane OFA's as low as approximately 65 feet. Wider taxilanes would be needed for aircraft over 37-feet wingspan, including some of the transient aircraft and aircraft accessing the fueling area. Some aircraft using the apron are ADG II so some ADG II taxilanes are needed to connect taxiways C and D.

Several of the apron taxilanes are directly lined up with the connector taxiways S, B, T, U, and V, inviting direct access from the apron to the runways via these connecting taxiways. Lease lot space for aircraft fueling should be provided on the apron.

Recommendations: Relocate East Apron parking outside of TWs C and D OFA's. Expand taxilane OFA's on the East Apron and relocate these taxilanes so they are not directly in line with taxiways connecting to the runways. Provide space for a fueling area lease lot on the apron.

4.8.2 *Tiedowns*

As noted in Section 2 and Table 4-5, the East Apron has 255 paved pull through and push back tiedowns and 39 transient tiedowns. About 53 percent of these tiedowns have electric plug ins. 196 of the 255 tiedowns are occupied and 59 are vacant.

Table 4-5. Existing Tiedowns/Occupied Tiedowns

Type of Tiedown Parking	Electricity	No Electricity	Total	Number Occupied
Paved Drive Through	39	12	51	45
Paved Push Back	108	96	204	151
East Ramp Subtotal	147	108	**255**	**196+**
Gravel	0	20	20	13
Total Tiedowns	147	128	**275**	**209**
Paved Transient Tiedowns	9	30	39	
Air Park Sites	0	15	15	
Total Transient	9	45	54	

+ Includes approximately 40 ski tiedowns

Ski Tiedowns. The East Apron has an estimated 40 ski equipped aircraft at various locations along the entire length of the apron, requiring airport maintenance staff to

maintain a large amount of snow-packed taxiway surfaces on the ramp and connecting to Runway 2/20. FAI and its users would like to reduce the amount of packed snow surfaces to reduce maintenance costs and reduce the amount of packed snow surfaces that wheeled aircraft must operate on. Users would also like to locate ski tiedowns closer to Runway 2/20 to shorten taxi distances. With a consolidation of ski tiedowns near the ski strip, some leaseholders may also need seasonal use ski tiedowns, as they may no longer have access to packed snow taxiways from their lease lots. Up to ten additional ski tiedowns are proposed for leaseholder aircraft and to accommodate potential growth in demand for ski aircraft. It is much more difficult to maneuver ski equipped aircraft than wheeled aircraft. Consequently, when tight turns are needed, pilots must turn the aircraft by hand. Widening the apron taxilanes and increasing pull through tiedowns for ski equipped aircraft should improve the pilots' ability to access tiedowns. Wide fillets where the apron taxilanes meet taxiways C and D would also improve taxiing capabilities for ski equipped aircraft.

Recommendation: The master plan should consolidate approximately 50 ski tiedowns plus 4 transient ski tiedowns (see Table 4-5) near the ski strip and reduce the amount of surface maintained for ski equipped aircraft. The ski tiedowns should account for limited maneuvering capability for ski aircraft by providing more pull through tiedowns with wide apron taxilanes and wide fillets to enable 90 degree turns.

Wheeled Tiedowns. The East Apron has an estimated 196 tiedowns, of which approximately, 156 are for wheeled aircraft. About 20 percent of the East Apron tiedowns are pull through; pilot surveys show preferences for more pull through tiedowns on the East Apron. Over the last 20 years, tiedown demand has decreased and consequently 59 tiedowns on the East Ramp are currently unoccupied. Surveys also indicated that pilots based on other airports in Fairbanks recognize that FAI has better services and facilities than they have at their current airports. An improved apron, with more pull through and electric tiedowns as well as new fueling facilities and other services may draw some additional general aviation pilots to the Eastside.

Recommendation: Increase wheeled tiedowns by about 15 by 2020, and increase numbers of pull through tiedowns (see Table 4-5). Maintain the existing 20 gravel tiedowns northwest of Runway 2/20. Show an area for long term expansion of tiedowns, should demand grow beyond current trends.

Transient Tiedowns. FAI maintains 39 paved transient tiedowns on the East Apron and 15 gravel tiedowns in the Air Park (campground). In 2017 peak transient demand occurred in the months of June to August with an average of 3 transient spaces used each day in these months. During these peak summer months, a peak demand of 8 occupied transient tiedowns occurred once and peak demand of 5-8 occupied transient tiedowns occurred 8 times. There is no data about how many ski equipped transient aircraft use the apron.

Recommendation: Provide paved transient parking to serve peak demand of 9, including 4 ski tiedowns, and at least one ADG II transient wheeled tiedown (maximum wingspan of 65 feet). If demand grows beyond these peak numbers, FAI can handle

occasional higher levels of summer transient demand at a vacant wheeled tiedown, at the campground or by temporarily using grassy areas on the airfield. Identify a transient pickup/drop off area east of Taxiway D that avoids transient passengers from having to enter the apron area on foot or by vehicle. Identify an area for additional tiedowns, should demand grow beyond that shown for 2020 in Table 4-6.

Table 4-6. Existing/Proposed Tiedowns

Type of Tiedown Parking	Existing	Existing Occupied	Proposed 2020
Paved Pull Through	51	45	120
Paved Push Back	204	151	100
East Ramp Subtotal	255	196	**220+**
Gravel	20	13	20
Total Tiedowns	275	209	**240**
Paved Transient Tiedowns	39	Peak day 8	9++
Air Park Sites	15	Peak day 15	15
Total Transient	54	23	24

+ includes 50 pull through ski tiedowns
++ includes 4 transient ski tiedowns and 1 DGII tiedown (maximum wingspan of 65 feet)

4.9 Float Pond Slips

Floatplane slips have been fully leased for several years but the airport does not currently maintain a waiting list. Surveys of airport users during the 2014 master plan and the current master plan showed strong support for development of more float pond slips. The high demand for float pond parking was corroborated by interviews with airport users. The 2014 master plan identified an immediate need for ten additional slips plus up to an additional 65 additional float pond parking spots by 2030 (Table 4-7). This master plan also supports a gradual increase of slips, as demand is demonstrated by a waiting list.

Table 4-7. Existing/Proposed Floatplane Slips

	Existing	Proposed 2040
Type of Parking	**No Electricity**	**Electricity**
Float Pond Slips	175	250
Transient Float Pond Slips	4	6

Recommendation: FAI should begin to allocate floatplane slips using a waiting list in accordance with Alaska Administrative Code Title 17 guidelines. This will also help to document demand prior to the time that new slips are built. FAI should initially build an initial ten slips and then build up to an additional 65 slips over the 20-year planning horizon, based on the waiting list and documentation of demand. Transient parking should also be increased, if demand supports an increase.

4.10 Lease Lots and Hangars

An estimated 182 based aircraft on the Eastside are stored in hangars, including aircraft used for business and recreational purposes. As identified in the 2014 master plan, airports in extreme climates often store about 80 percent of their based aircraft in hangars. At FAI's Eastside, only about 32 percent of aircraft are stored in hangars. The desire for hangar parking was one of the biggest issues noted in the 2014 master plan and current master plan surveys. On the other hand, the high cost of hangar construction versus the relatively less expensive apron parking will cause some airplane owners who would prefer to park in a hangar to instead select less expensive apron parking.

There are currently 28 aircraft parked in T-hangars and 29 conventional hangars developed by private developers at FAI (2014 MP). FAI has been in discussions with several prospective tenants about development of private hangar space on a lot north of the East Ramp. As recommended in the 2014 MP, FAI should develop up to ten additional lease lots for approximately 30 aircraft over the 20-year planning horizon. There are no existing lease lots on the floatpond, but the airport has received some expressions of interest in lease lots with floatpond access. The Master Plan should identify lease space on the floatpond.

Recommendation: Identify space for up to ten lease lots, including lots on the floatpond, to be incrementally developed over the 20-year planning horizon.

4.11 Total Aircraft Parking

Table 4-8 shows a forecast of aircraft parking demand for Eastside wheeled aircraft, floatplanes, and aircraft in hangars over the 20-year planning horizon. The airport will see some small increase in occupied tiedowns initially, as the East Ramp redevelopment is constructed in 2022. Subsequent hangar development is shown to handle most of the growth in wheeled aircraft parking demand through 2040. It remains to be seen to what extent hangars will be built, so there should be some tiedown expansion capability identified beyond 240 tiedowns, in case hangars are found to be too expensive and they are not built. Floatplane demand will likely grow the most, though some of the floatplanes may also be hangered during winter months.

Table 4-8. Aircraft Parking Demand – FAI Eastside, 2018 – 2040

Year	Based Aircraft	Wheeled Tiedowns	Floatplanes	Aircraft in Hangars
2018	566	209	175	182
2040	705	240	250	215
Average Annual Growth**	1.0 percent	0.6 percent	1.9 percent	0.8 percent

Recommendation: Identify space for approximately 240 tiedowns, 250 floatplane slips, and for parking 215 aircraft in hangars by 2040. Identify space for additional aircraft parking beyond 2040.

4.12 Electrification of Tiedowns, Slips, and Lease Lots

Providing electrical service at tiedowns, slips, and for new lease lots is very popular among users of tiedowns and slips, and is essential for any new lease lots. However, not all tiedown and slip holders will be willing to pay the added cost for electric service. Extending power lines to the entire reconfigured tiedown apron makes sense so that the apron does not need to be torn up to extend power to more tiedowns at a later time. However, power pedestals only need to be provided for tiedowns where users are willing to pay the additional costs. Similarly, it may be most practical to provide power lines to all adjacent slips when pavement is being resurfaced.

Recommendation: The airport should develop a plan for phasing electricity into apron and float plane tiedowns areas and undeveloped lease lots. It is recommended that subsurface infrastructure for electricity and any desired comm/water/sewer for lease lots and fueling areas be placed during apron repaving. Successful development of lease lots along the apron and float pond will require these services be accessible. It is also recommended that the airport isolate tiedown electrical from airfield lighting to better assess and recoup costs from tiedown users. Conversely, the airport could have meters installed so users who want electricity may arrange this service directly with the local power company.

4.13 Helicopter Parking

Currently transient helicopters operate from a grassy area north of the East Ramp. This area is slated for lease lot development. An alternative area for transient helicopters should be identified.

The Alaska Division of Forestry, Alaska Fire Service and Bureau of Land Management staff indicate an interest in consolidating their helicopter firefighting and aircraft fleet and operations into one joint base location at FAI. These helicopter operations and other state and federal fixed wing firefighting operations and support facilities are currently located off-airport in several substandard and disconnected facilities which pose operational challenges. The fixed wing and support facilities are proposed to be located on the west side of FAI. State Forestry officials have requested at least a 10-acre site on the Eastside where 20 to 30 helicopters would be based and operate from. During peak firefighting days they estimate each helicopter could have up to four operations per day. Currently there is no funding allocated for the fixed wing or helicopter facilities, but FAI and the state and federal agencies have recognized that the first step toward building the new firefighting facilities at FAI is to identify potential sites in the master plan.

Recommendation: Identify an area for transient helicopter operations. Identify at least ten acres for State firefighting helicopter operations plus several additional lease lots for private helicopter operations on the Eastside.

4.14 Surface Condition

Most of the pavement on the East Ramp and Taxiway D is over 30 years old Most of the pavement on Runway 2R/20L is over 15 years old and sections have settled and heaved due to subsurface conditions. Most pavement on Taxiway C and the connector taxiways between Taxiway C and the runways is about 15 years old. In 2018, pavement conditions at the airport were surveyed, and recommendations were made to rehabilitate and provide corrective and preventative maintenance for these paved surfaces. Only Taxiway B, which is currently being repaved, will not need to be resurfaced or reconstructed over the next 15 years. As previously noted, the East Ramp and Runway 2R/20L are scheduled for resurfacing in the next 5 years.

Runway 2/20's gravel surface is in good condition, but will likely need resurfacing in the next 15 years.

Portions of the floatpond in the Floatpond Extension area and at the south floatplane ramp area have shallow water. Floatpond depth should be confirmed for the entire floatpond under a bathymetric survey, as recommended in the 2014 MP. The Seaplane Base Advisory Circular recommends a minimum depth of 4 feet and a recommended depth of 6 feet.

Recommendation: Resurface all paved and gravel surfaces, except Taxiway B and pavements recently upgraded with the Taxiway B project. Complete a bathymetric survey and address any floatpond depth issues.

4.15 Lighting, Marking, Signage

The lighting system for Runway 2R/20L is about 15 years old and will need to be replaced when this runway is resurfaced. Runway signs, lighting and markings for both runways should be relocated and updated as needed to fit the current ADG for the runways. For example, the hold lines for Runway 2R/20L do not match the requirements for ADG II or the current ALP. Signage should be regularly updated as needed to address incursion issues.

Recommendation: Replace Runway 2R/20L lighting system when the runway is resurfaced. Update runway signage, marking and lighting, including relocation of hold lines/signs on Runway 2R/20L to B-II distances.

4.16 Incursions, Fencing, and Wildlife Control

FAI's Eastside has experienced years of unauthorized runway access from aircraft, large mammals, vehicles, and pedestrians accessing lease lots, tiedowns, the floatpond, or just travelling through and around the airport with or without an aviation purpose.

Unauthorized users are often able to access FAI's primary (large air carrier) runway and TSA regulated areas from the East Ramp, creating additional safety and security hazards. Through education, signage, blockage of some roads, and automatic gate arms extending across some of the roads entering from University Avenue South, the airport, FAA and users have attempted to reduce incursions. The gate arms are no longer serviceable and do not function. Incursion prevention efforts have led to increased awareness, but more remains to be done as the incursion rate remains elevated. The Taxiway B project currently underway was intended install an aircraft gate to reduce incursions from the Eastside to Runway 2L/20R. The gate was removed from the project over concerns about how it would be controlled. The airport, FAA and others remain concerned that Taxiway B continues to allow unauthorized aircraft, vehicle, pedestrian and wildlife access to the west side of the airport.

Areas east and south of University Avenue South see continuous unauthorized use for recreation and other purposes. Due to limited staffing resources, the airport is unable to monitor and manage these activities. Unauthorized uses sometimes include criminal activity but can also lead to a public perception that these lands are permanent park and recreation properties, which could conflict with FAI's long range plans to develop the lands for aviation purposes.

Recommendations: Explore additional measures to reduce incursions, control wildlife, and minimize unauthorized activities on Taxiway B and Eastside airside and landside surfaces. Identify and implement a transient pick up/drop off area east of Taxiway D that avoids transient passengers from having to enter the apron area or cross taxiways on foot or by vehicle. Implement improved physical barriers, such as fencing, jersey barriers and signage to prevent access to airport lands east and south of University Avenue.

4.17 Aircraft Fueling

Access to Crowley's card-lock pump fueling facilities near the south ramp and Taxiway B requires floatplanes to taxi to the south end of the floatpond and hold in the channel when other aircraft are fueling or the floatplane ramp is congested. It is also located close to Taxiway B, adding to the potential for aircraft and vehicle incursions from Taxiway B and into the Runway 2R/20L RSA. Crowley currently indicates that not having access to a fiber optic cable at this site is hindering reliable communications for the credit card payment system. Alaska Aerofuel and users have also indicated interest in reconsidering the location and layout for the card-lock pump facility adjacent to the East Ramp for both ski and wheel equipped aircraft.

Recommendations: Evaluate options for the location of card-lock pump fueling facilities on the Eastside to improve accessibility, upgrade facilities, and reduce incursion potential.

4.18 Aircraft Wash

During surveys for the Eastside MP and the 2014 MP airport users consistently requested an aircraft wash facility. FAI staff indicate it would not be cost-effective for FAI to develop the facility, due to costs of construction and addressing environmental concerns. Consequently, FAI supports a privately developed aircraft wash facility.

Recommendation: Identify an area suitable for a privately developed aircraft wash facility.

4.19 Passenger/Pilot Facilities

The airport and its users have identified the need for improved terminal facilities for those flying from air taxi/charter companies. While FAI is not interested in owning and operating a public GA terminal, it supports private terminal development efforts, and has offered a Request for Interest (RFI) to explore private sector interest in developing a terminal. DOT&PF investment in owning and operating passenger terminal facilities is not common except at the large commercial service terminal buildings at ANC and FAI. DOT&PF does not presently own or operate any GA terminal facilities.

Transient pilots use an existing pilot lounge at the base of the ATCT; however, the facility is old and is lacking in some amenities. The airport plans to improve the pilot lounge to address these concerns.

Recommendations: Continue to explore options for private development of passenger terminal facilities, including possible private partnerships (AIDEA as one example). The airport intends to improve the existing pilot lounge. Identify a transient pickup/drop off area east of Taxiway D that avoids transient passengers from having to enter the apron area on foot or by vehicle.

4.20 Access and Circulation

University Avenue South, the primary access to the Eastside, needs to be resurfaced. Pedestrians (employees, customers, and those transiting the area for recreation purposes) need a pathway along the road. Currently there is a wider shoulder along portions of the east side of the road, but it does not extend to all lease lots and most travel along the west side where the lease lots are located.

Eastside users and their customers and friends have concerns about the lack of reliable public transportation between the Eastside and Westside as well as off-airport locations. Rental car companies do not pick up customers on the Eastside, and no shuttle is available. The MACS bus service does not serve the Eastside but it does serve the Westside and adjacent neighborhoods. Primary transportation to the Eastside is primarily by private vehicles and taxicabs.

Recommendations: Resurface University Avenue South and provide a year-round pedestrian path on the west side of the road connecting eastside businesses and

eastside to westside/passenger terminal areas. Explore options for improved transportation to the Eastside, such as MACS transit service, and improved service by rental car companies, the parking concession and FAI permitted ground transportation providers (shuttles, taxicabs/Uber/Lyft).

4.21 Public Parking

The southern public parking lot has highest demand due to its location closer to air taxi/charter businesses. At times the lot is nearly full, particularly during summer and fall. The north lot sees less demand. Neither lot has electrical service for engine block heaters, so those parking during cold temperatures often are unable to start their cars.

Recommendation: Explore options to expand public parking spaces and add electric plug ins.

5.0 ALTERNATIVES/RECOMMENDED PLAN

This chapter identifies and evaluates FAI Eastside development alternatives and presents a Recommended Plan. The alternatives were guided by facility requirements identified in chapter 4 as well as issues and ideas generated in surveys, the Advisory Committee, user comments and in public meetings. The master plan evaluated the alternatives using the Advisory Committee, meetings with airport staff and the FAA, and a public meeting on October 16, 2018. Following these meetings, a Recommended Plan was prepared and presented for an Advisory Committee review on February 11 and public review on February 13, 2019 (see Appendix A).

5.1 Alternatives Overview

Alternatives A-D are projects grouped by areas/topics as shown in Figures 5-1 to 5-4. As noted on these figures, some of the projects are potential CIP projects funded by FAI and FAA, while other projects were potentially funded by others or completed by FAI maintenance staff or airport users. The alternatives include:

- Alternative A: Runways and Waterlane Alternatives
- Alternative B: Taxiway and Incursions Alternatives
- Alternative C: Tiedown Apron and Slip Alternatives
- Alternative D: Lease Lots, Roads, and Parking Alternatives

In addition, FAI presented another group of projects and actions already in FAI's plans or already under consideration outside of the master plan. Actions/projects already planned or committed to included:

- Resurfacing Runway 2R/20L, Runway 2/20 and adjacent taxiways
- Dredging shallow areas of the floatpond extension
- Removing the firing range and fire training area
- Filling wildlife attraction ponds and removing trees
- Adding lease lots in Blocks 104 and 108.

Actions/projects already under discussion outside the master plan included:

- Limited air carrier use of Runway 2R/20L (following the public meeting the airport and carriers determined this was not worth further consideration)
- Possible gate or other changes to Taxiway B

5.2 Alternatives Descriptions

The projects included in each of the alternatives are further described in Tables 5-1 through 5-4 below and in Figures 5-1 to 5-4.

Table 5-1. Alternative A

Alternative A: Runways and Waterlane		Description
A1	Close South Floatplane Ramp to Eliminate Waterlane Conflicts	Close South Floatplane Ramp. Aircraft waiting to use the ramp/fueling area often queue in the channel, creating safety hazards for arriving and departing aircraft. Ramp use has also been associated with inadvertent entry onto Taxiway B and runway safety areas. If a second floatplane ramp is needed, consider another location.
A2A	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Floatpond Extension	Relocate floatplane fueling near existing floatplane ramp at the Floatpond Extension to reduce conflicts discussed above for A1. Location would need to consider potential use by wheeled/ski equipped aircraft.
A2B	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tiedown	Relocate floatplane fueling to the gravel tiedown area to reduce conflicts in A1. Location would need to consider potential use by wheeled/ski equipped aircraft.
A3	Reserve Land for Future GA Facilities and Add Selective Fencing	Reserve land east of University Avenue South to enable long term future development of GA facilities. The area currently sees unauthorized uses that pose safety hazards, create airport liability and could hinder future development.

Table 5-2. Alternative B

Alternative B: Taxiways and Incursions		Description
B1	Align Aircraft Parking to Block Direct Access from Roads/ Apron to Runways (Inset A)	Alter aircraft parking on the East Ramp so that parked aircraft are aligned with taxiways connecting to runways via Taxiways B, T, U, and V. Currently, apron taxilanes are aligned with connecting taxiways, which creates a clear path to the runways for aircraft, and unauthorized vehicles/pedestrians.
B2	Taxiway B - Delete Access from Float Pond Road	Close the connection between Float Pond Road and Taxiway B to prevent unauthorized access to Taxiway B by aircraft, vehicles and pedestrians. This was also considered in the 2014 MP.
B3	Taxiway C – Extend Controlled Surface to Full Length of Taxiway C	Extend the controlled surface of Taxiway C to prevent unnecessary and inadvertent crossings of the runways by vehicles and aircraft and to provide ATC time to identify an unauthorized presence prior to runway entry.
B4	Taxiway D - Straighten Taxiway and Add Adjacent Apron Vehicle Lanes	Remove the jog in Taxiway D by straightening the taxiway. Add vehicle driving lanes adjacent to the lease lot boundary to deconflict vehicle and aircraft traffic on Taxiway D and the apron.
B5	Taxiway R - Exit Only, Shift or Delete Taxiway	Consider allowing exit-only use by aircraft. Shift the taxiway north or south, or delete altogether if not needed because it is close to Taxiway S. These changes would eliminate aircraft access to the middle third of the runway and prevent direct access to the runway from lease areas to the east.
B6	Taxiway S – Exit Only, Remove Direct Access to Apron, or Delete Taxiway	Consider allowing exit-only use by aircraft. Block direct access to the runway using parked aircraft (B1) or an island or deleting the taxiway if not needed because it is close to other taxiways. These changes would eliminate aircraft access to the middle third of the runway and prevent direct access to the runway from lease areas to the east.
B7	Taxiway T – Shift Taxiway South and Narrow Taxiway to Align with Threshold; Remove Direct Access to Apron; Adjacent Runup Area	Shift Taxiway T south to align with the threshold of Runway 20L and to eliminate taxiing on the safety area. Eliminate direct access from the apron to the runway via Taxiway T using parked aircraft (see B1) or an island. Provide a runup area adjacent to the relocated Taxiway T.
B8	Taxiway U – Remove Direct Access to Apron	Remove direct access from the apron to the runway via Taxiway U using parked aircraft (see B1) or an island.
B9	Taxiway V – Remove Direct Access to Apron; Exit Only; Shift Connector to Float Pond Road	Consider allowing exit-only use by aircraft, or blocking direct access to the runway using parked aircraft (B1) or an island. Shift the TW V segment between Float Pond Road and the runway. These changes would eliminate aircraft access to the middle third of the runway, discourage runway crossings, and prevent direct access to the runway from lease areas to the east.

Alternative B: Taxiways and Incursions		Description
B10	Reconfigure Float Pond Road as a Taxilane	Replace Float Pond Road with a taxiway that provides for wingtip clearances for aircraft taxiing on the new taxiway and buildings and parked aircraft on adjacent slips. This will require shifting the paved surface toward the ski strip.
B11	New South End Taxiway Connector at Taxiway Q (Long Term)	Provide for the long-term option of a new taxiway that connects the Eastside to the Westside. This would replace or supplement Taxiway B, if needed.
B12	Reduce Vehicle Incursions Alternatives	Various options below to reduce vehicle incursions.
B12A	Relocate Float Pond Access Road, Add Gate	Relocate Float Pond Access Road on the north end of the Eastside. New less direct access would reduce unwanted traffic on the airfield and provide access to new lease areas. Gate would prevent unauthorized access to slips.
B12B	Repair Inoperable Road Gate Arms	Repair existing gate arms by adding pavement sensors to make them operable. Consider adding gate arms to other roads. Gate arms would slow and deter access, but not prevent it.
B12C	Reduce Number of Apron Access Roads on South University Ave	Eliminate some of the nine access roads entering the East Ramp and lease lots.
B12D	Add Security Gates and Complete Fencing to All Lease Lots Along South University Ave	Construct continuous fencing and gates on all lease lots and roads along University Avenue South.
B13	Delete Compass Rose (Not on Drawing)	Delete the existing compass rose at Taxiway V as it cannot be certified at this location, the need is limited, and another location meeting certification standards is not apparent.

Table 5-3. Alternative C

Alternative C: Tiedown Apron and Slips		Description
C1	Resurface and Reconfigure East Ramp	Various potential elements of an East Ramp project described below.
C1A	Consolidate Ski Tiedowns Adjacent to Ski Strip (numbers TBD)	Consolidated ski tiedowns on the East Ramp adjacent to the ski strip would reduce taxi distances, reduce crossings of snow surfaces by wheeled aircraft, and reduce airport maintenance of snow surfaces.
C1B	Increase Pull Through Tiedowns (numbers TBD)	Increase the number of pull through tiedowns, which are very popular. There are 90 pull through tiedowns and transient tiedowns today.
C1C	Increase Tiedown Electrical Service with Power Cost Recovery Fees or User Meters	Increase the number of tiedowns with electrical service, which are very popular. Give priority to ski equipped aircraft. There are 156 tiedowns and transient tiedowns with electric service today. Construction of electrical service is expensive and power costs are high, so some sort of cost recovery will be necessary.
C1D	Existing Transient Parking / Fueling Site Shifted West and North to Block Taxiway B Access	Create a lease lot on the apron for fueling, with improved airplane accessibility and sited to block access to Taxiway B.
C1E	Relocate Transient Parking to South End of Ski Tiedowns	Relocate transient parking so it can be used with the new consolidated ski tiedown area (C1A) as well as by wheeled aircraft.
C2	New Privately Developed General Aviation (GA) Facility (Where?)	Encourage a new privately built general aviation facility. This could potentially be a new joint-use terminal and/or a new pilots lounge.
C3	Transient Helicopter Parking	Several options noted below.
C3A	Relocate Transient Helicopters to East of University with Large Helicopter Lease Area	Develop a large helicopter lease area with transient parking on the East side of University Avenue. This site was also recommended in the 2014 Master Plan.
C3B	Relocate Transient Helicopters to West Side or East Side Ave Lease Lot (Not on Drawing)	Relocate transient helicopters to private lease lots on the Eastside or Westside.
C4	Increase Approximately 24 Slips (Inset A)	Phased construction of new slips on fingers of land similar to those already provided along the east shore of the floatpond.
C5	Provide Slip Electrical Service with Power Cost Recovery Fees or User Meters	Provide electrical service to floatplane slips. There are no slips with electric service today. Construction of electrical service is expensive and power costs are high, so some sort of cost recovery will be necessary.

Table 5-4. Alternative D

Alternative D: Lease Lots, Roads, and Parking		Description
D1	**Add Lease Lots**	**Several options to add lease lots described below.**
D1A	Float Pond Commercial Lease Lots North of Floatpond Extension	Phased development of new commercial lease lots with floatplane and wheeled plane access north of the Floatpond Extension, where there are currently floatplane slips. This project is linked to B12A. This project will require building replacement slips (C4) first.
D1B	Float Pond Commercial Lease Lots East of Floatpond Extension	Phased development of new commercial lease lots with floatplane and wheeled plane access north of the Floatpond Extension, where there are currently floatplane slips. Extend Taxiway C and electric service to these lots. This project is linked to B12A. This project will require building replacement slips (C4) first.
D1C	Commercial Lease Lots East of Campground	Phased development of new commercial lease lots with wheeled plane access east of the campground. Extend Taxiway D and electric service to the lots. This project is linked to B12A. This project was recommended in the 2014 Master Plan.
D1D	Shift University Avenue South to Create Commercial Lease Lots	Relocate a segment of University Avenue South and the adjacent rail line and create commercial lease lots in a pattern similar to other Eastside lots to the north.
D1E	Commercial Lease Lots East of University (Long Term)	Extend a taxiway to the east side of University Avenue South and create tiedowns and commercial lease lot area. This should be accomplished when the other lease lots have been developed, which is likely to be in the long term.
D2	Public Aircraft Viewing Area (Where?)	Identify an area for public viewing of Eastside operations. The site should not encourage incursions and other security/safety concerns.
D3	Resurface University Avenue; Provide Pedestrian Path	Resurface University Avenue South and provide a pedestrian path on the west side of the road.
D4	Expanded Public Parking; Provide Electrical Service	Expand public parking as needed, and provide electric plug ins for vehicles.

Alternative D: Lease Lots, Roads, and Parking		Description
D5	Designated Snow Storage Area	Construct a snow storage area east of University Avenue South.
D6	Improve Ground Transportation Between East and West Sides of Airport (not on drawing)	Continue to explore improved transportation services by taxicabs, rental car companies, and MACS transit service.

This page intentionally left blank.

FIGURE 5-1 A. RUNWAYS AND WATERLANE ALTERNATIVES

	Project	CIP Cost
A1	Close South Floatplane Ramp to Eliminate Waterlane Conflicts	N/A, M&O Cost
A2A	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Floatpond Extension	N/A, Tenant Cost
A2B	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tie Down	N/A, Tenant Cost
A3	Reserve Land for Future GA Facilities and Add Selective Fencing	$

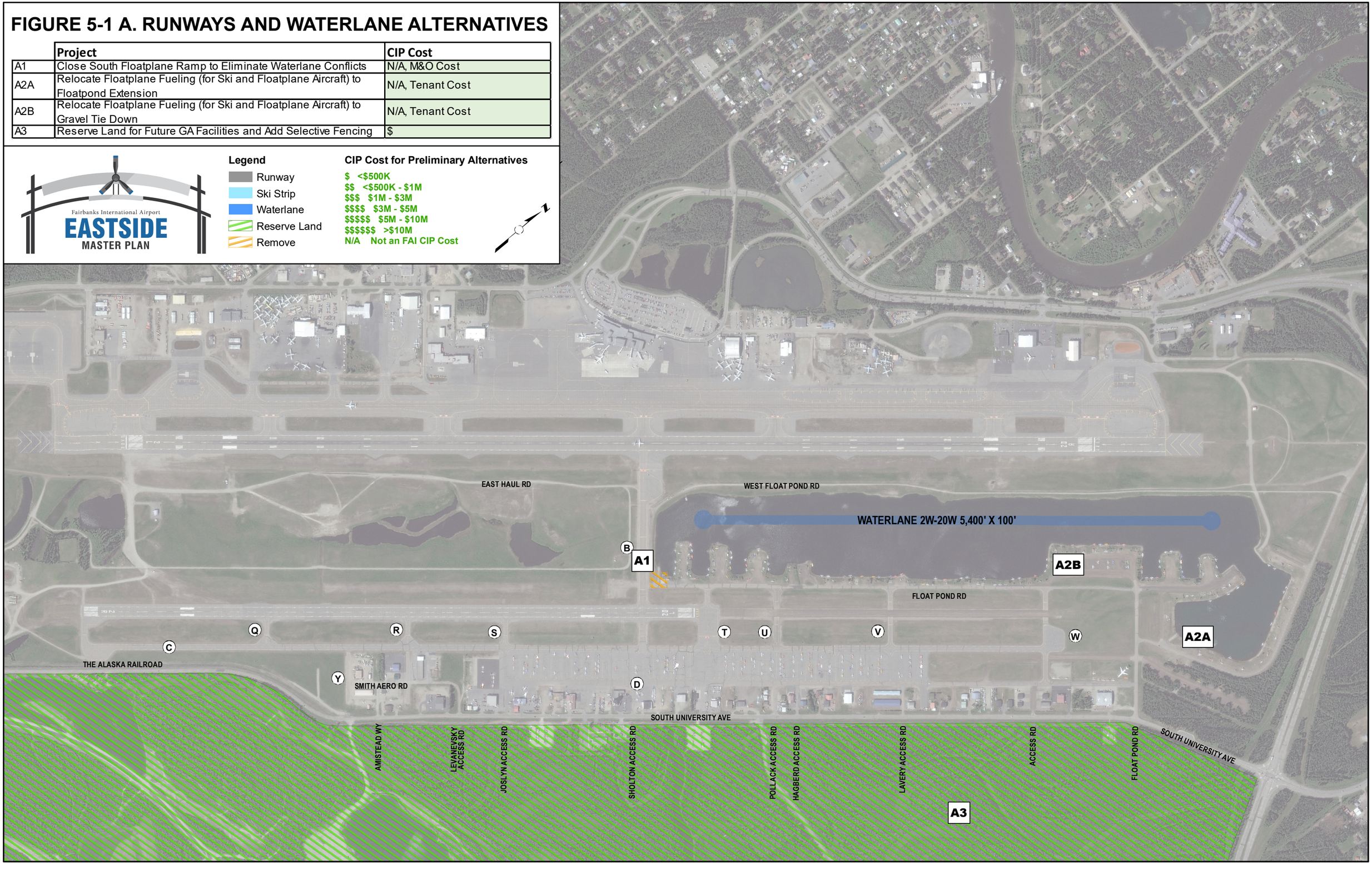
Fairbanks International Airport
EASTSIDE
MASTER PLAN

Legend

- Runway
- Ski Strip
- Waterlane
- Reserve Land
- Remove

CIP Cost for Preliminary Alternatives

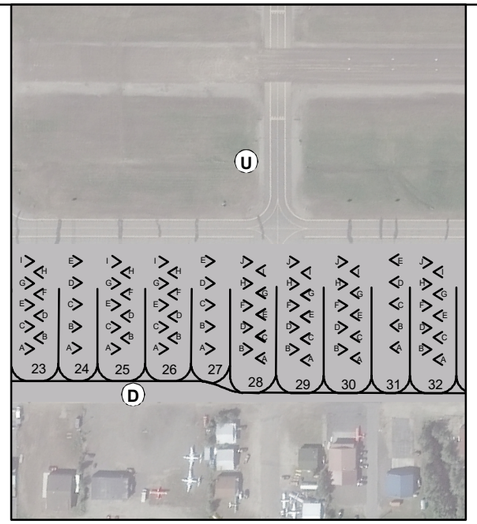
$ <$500K
$$ <$500K - $1M
$$$ $1M - $3M
$$$$ $3M - $5M
$$$$$ $5M - $10M
$$$$$$ >$10M
N/A Not an FAI CIP Cost



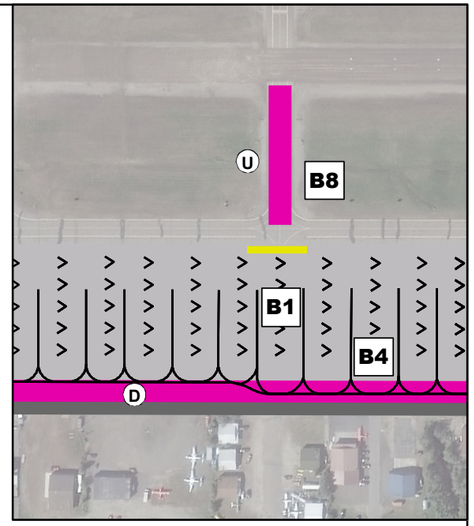
This page intentionally left blank.

FIGURE 5-2 B. TAXIWAYS AND INCURSIONS ALTERNATIVES

	Project	CIP Cost
B1	Align Aircraft Parking to Block Direct Access from Roads/Apron to Runways (Inset A)	Part of C1
B2	TW B - Delete Access From Float Pond Road	$
B3	TW C - Extend ATCT Controlled Surface to Full Length of TW C	N/A, M&O Cost
B4	TW D - Straighten TW and Add Adjacent Apron Vehicle Lanes	Part of C1
B5	TW R - Exit Only, Shift or Delete TW	$
B6	TW S - Exit Only, Remove Direct Access to Apron or Delete TW	$
B7	TW T - Shift TW South and Narrow TW to Align with Threshold, Remove Direct Access to Apron, Adjacent Runup Area	$
B8	TW U - Remove Direct Access to Apron	Part of C1
B9	TW V - Remove Direct Access to Apron, Exit Only, Shift Connector to Float Pond Road	$
B10	Reconfigure Float Pond Road as a Taxilane	$$$$
B11	New South End Taxiway Connector at TW Q (Long Term)	$$$$$
B12	Reduce Vehicle Incursions Alternatives	
B12A	Relocate Float Pond Access Road, Add Gate	$$$
B12B	Repair Inoperable Road Gate Arms	$
B12C	Reduce Number of Apron Access Roads on South University Ave	$
B12D	Add Security Gates And Complete Fencing to All Lease Lots Along South University Ave	$$
B13	Delete Compass Rose (Not on Drawing)	N/A, M&O Cost



EXISTING LAYOUT
INSET A



PROPOSED LAYOUT
INSET A - B1, B4, B8

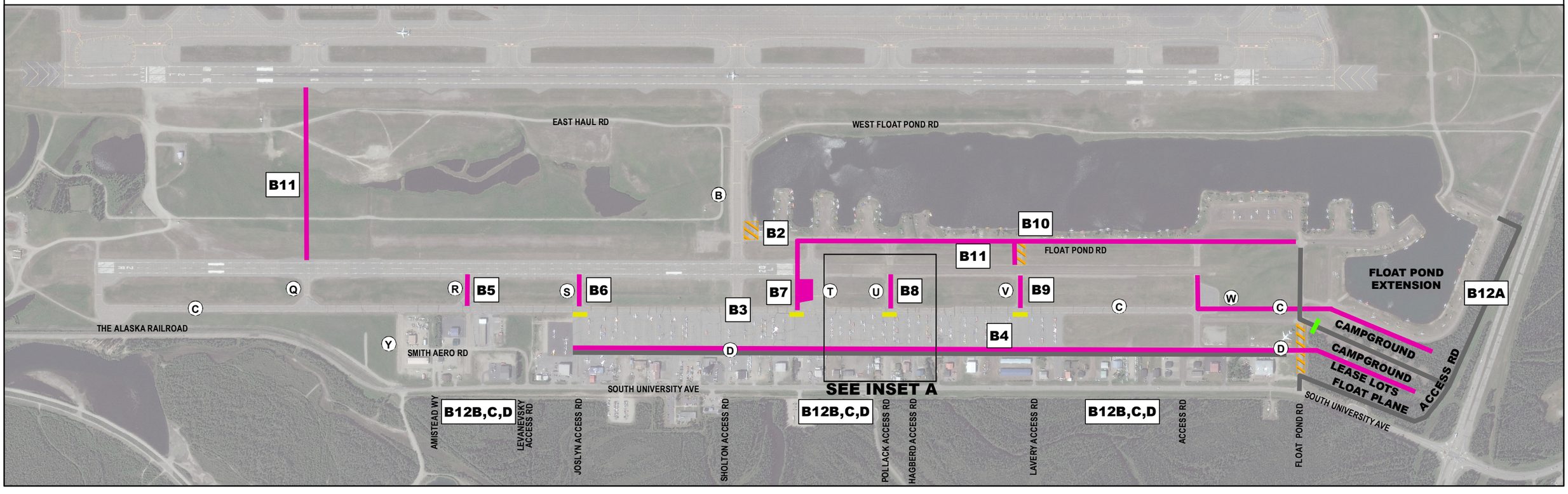
Fairbanks International Airport
EASTSIDE
MASTER PLAN

Legend

- Island
- Gate
- Road
- Taxiway
- Remove

CIP Cost for Preliminary Alternatives

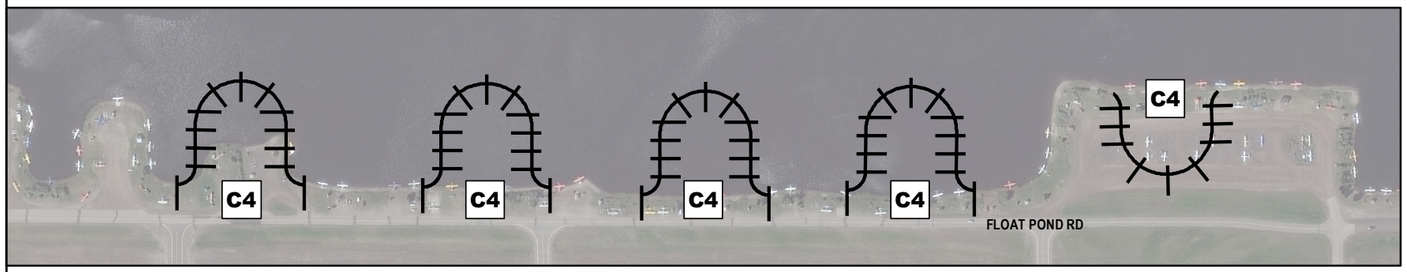
$ <$500K
$$ <$500K - $1M
$$$ $1M - $3M
$$$$ $3M - $5M
$$$$$ $5M - $10M
$$$$$$ >$10M
N/A Not an FAI CIP Cost



This page intentionally left blank.

FIGURE 5-3 C.TIE DOWN APRON AND SLIPS ALTERNATIVES

	Project	CIP Cost
C1	Resurface and Reconfigure East Ramp	$$$$$$ (funding already committed in 2020)
C1A	Consolidate Ski Tie Downs Adjacent to Ski Strip (numbers TBD)	Part of C1 Cost
C1B	Increase Pull Through Tie Downs (numbers TBD)	Part of C1 Cost
C1C	Increase Tie Down Electrical Service With Power Cost Recovery Fees or User Meters	Part of C1 Cost
C1D	Existing Transient Parking / Fueling Site Shifted West and North to Block Taxiway B Access	Part of C1 Cost
C1E	Relocate Transient Parking to South End of Ski Tie Downs	Part of C1 Cost
C2	New Privately Developed General Aviation Facility (Where?)	N/A, Private Costs
C3	Transient Helicopter Parking	
C3A	Relocate Transient Helicopters to East of University with Large Helicopter Lease Area	$
C3B	Relocate Transient Helicopters to West Side or East Side Ave Lease Lot (Not on Drawing)	N/A, Private Costs
C4	Increase Approximately 24 Slips (Inset A)	$$$
C5	Provide Slip Electrical Service With Power Cost Recovery Fees or User Meters	$$$



INSET A

Fairbanks International Airport
EASTSIDE
MASTER PLAN

Legend

- Ski Tie-Down
- Transient Aircraft
- Helicopter
- Road
- Taxiway
- Gate

CIP Cost for Preliminary Alternatives

$ <$500K
$$ <$500K - $1M
$$$ $1M - $3M
$$$$ $3M - $5M
$$$$$ $5M - $10M
$$$$$$ >$10M
N/A Not an FAI CIP Cost

EAST HAUL RD
WEST FLOAT POND RD
B
C4
C5
FLOAT POND RD
SEE INSET A
FLOAT POND EXTENSION
C5
Q
R
S
T
U
V
W
C
THE ALASKA RAILROAD
C1B
C1C
C1D
C1B
C1E
C1A
C1B
C1C
Y
SMITH AERO RD
D
SOUTH UNIVERSITY AVE
C3A
AMISTEAD WY
LEVANEVSKY ACCESS RD
JOSLYN ACCESS RD
SHOLTON ACCESS RD
POLLACK ACCESS RD
HAGBERD ACCESS RD
LAVERY ACCESS RD
ACCESS RD
FLOAT POND RD
SOUTH UNIVERSITY AVE

This page intentionally left blank.

FIGURE 5.4 D. LEASE LOTS, ROADS, AND PARKING ALTERNATIVES

	Project	CIP Cost
D1	Add Lease Lots	
D1A	Float Pond Commercial Lease Lots North of Floatpond Extension	$$$
D1B	Float Pond Commercial Lease Lots East of Floatpond Extension	$$$
D1C	Commercial Lease Lots East of Campground	$$$
D1D	Shift University Avenue South to Create Commercial Lease Lots (Long Term)	$$$$
D1E	Commercial Lease Lots East of University (Long Term)	$$$$
D2	Public Aircraft Viewing Area (Where?)	M&O Cost
D3	Resurface University Avenue; Provide Pedestrian Path	N/A, FHWA Cost
D4	Expanded Public Parking; Provide Electrical Service	$$$$
D5	Designated Snow Storage	$$
D6	Improve Ground Transportation Between East and West Sides of Airport (not on drawing)	N/A, Borough or Private

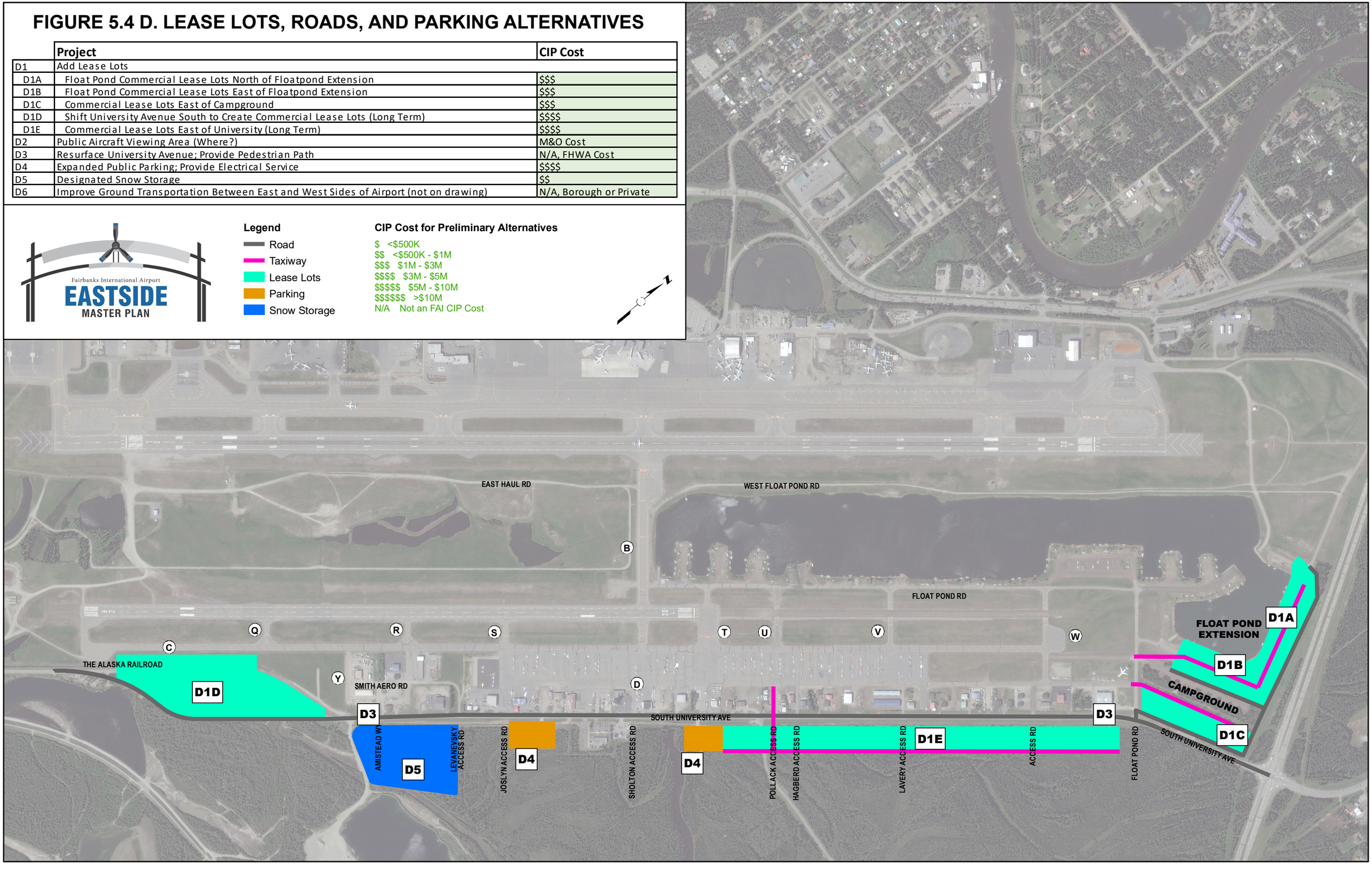
Fairbanks International Airport
EASTSIDE
MASTER PLAN

Legend

- Road
- Taxiway
- Lease Lots
- Parking
- Snow Storage

CIP Cost for Preliminary Alternatives

$ <$500K
$$ <$500K - $1M
$$$ $1M - $3M
$$$$ $3M - $5M
$$$$$ $5M - $10M
$$$$$$ >$10M
N/A Not an FAI CIP Cost



This page intentionally left blank.

5.3 Alternatives Evaluation

The alternatives were evaluated with input from airport staff, the FAA, the Advisory Committee and at a public meeting held on October 16, 2018. During the evaluation process most of the above projects were recommended, some were studied further and refined, and decisions were made about whether they were to be included in: 1. the Capital Improvement Program (CIP), 2. Other Non-CIP Actions accomplished outside of the CIP by airport staff or others, or 3. Long Term Projects to be accomplished 20 or more years in the future.

Information about Advisory Committee and public meeting ranking and comments on each of the projects and actions is included in Appendix A.

Following the alternatives evaluation, the following preliminary recommendations were made for each alternative.

Table 5-5. Evaluation/Recommendations for Each Alternative

Alternative A: Runways and Waterlane		Evaluation/Recommendation
A1	Close South Floatplane Ramp to Eliminate Waterlane Conflicts	**Recommended - Non-CIP Action to close ramp. Recommend CIP project for new ramp near gravel tiedown area.** Also see A2B below.
A2A	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Floatpond Extension	**Not recommended.** Needs to be more centrally located and accessible.
A2B	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tiedown	**Recommended - Non-CIP Action.** Recommend relocation of floatpond fueling away from Taxiway B and to the same area as new floatplane ramp. Discussed with tower the safety issue of floatplanes taxiing and step taxiing full length of waterlane to access ramp and fueling.
A3	Reserve Land for Future GA Facilities and Add Selective Fencing Use of Runway 2R/20L by Air Carriers	**Recommended – Long Term.** FAA land use compliance inspection also recommended increased oversight/management of undeveloped airport land being used for community recreation. **Not recommended.** After further discussions with air carriers, the cost of meeting part 139 requirements for this runway exceeded expected air carrier fuel savings. Reviewed runway length required assuming no air carrier use, and proposed shortening runway and adding gate across Taxiway B.

Alternative B: Taxiways and Incursions		Recommendations/Action
B1	Align Aircraft Parking to Block Direct Access from Roads/ Apron to Runways (Inset A)	**Recommended CIP.** Part of Apron Resurfacing in C1.
B2	Taxiway B - Delete Access from Float Pond Road	**Recommended - Non-CIP Action.** M&O can implement.
B3	Taxiway C – Extend Controlled Surface to Full Length of Taxiway C	**Hold for further consideration.** Consider feasibility after evaluating whether fencing and gates will work on the apron and based on overall apron reconfiguration in C1.
B4	Taxiway D - Straighten Taxiway and Add Adjacent Apron Vehicle Lanes	**Recommended CIP.** Part of apron rehabilitation.
B5	Taxiway R - Exit Only, Shift or Delete Taxiway	**Recommend shift in CIP.** Part of runway rehabilitation. Exit only not necessary because there are not crossings of runway.
B6	Taxiway S – Exit Only, Remove Direct Access to Apron, or Delete Taxiway	**Recommend shift in CIP.** Part of runway rehabilitation. Exit only not necessary because there are not crossings of runway.
B7	Taxiway T – Shift Taxiway South and Narrow Taxiway to Align with Threshold; Remove Direct Access to Apron; Adjacent Runup Area	**Not recommended.** Runway length/location evaluation shows Taxiway T would no longer be needed.
B8	Taxiway U – Remove Direct Access to Apron	**Recommended - Non-CIP Action.** Airport/tower to require no vehicle crossings of ski strip except for maintenance/operations/emergency response.
B9	Taxiway V – Remove Direct Access to Apron; Exit Only; Shift Connector to Float Pond Road	**Recommend offset west segment in CIP.** Part of Floatpond Road project. Airport/tower to require no vehicle crossings of ski strip except for maintenance/operations/emergency response.
B10	Reconfigure Float Pond Road as a Taxilane	**Recommended CIP.**
B11	New South End Taxiway Connector at Taxiway Q (Long Term)	**Recommend connector at F in long term.** TW Q is in touchdown area of both runways.

Alternative B: Taxiways and Incursions		Recommendations/Action
B12	**Reduce Vehicle Incursions Alternatives**	
B12A	Relocate Float Pond Access Road, Add Gate	**Recommended CIP.** Based on public comment, shift road to west of campground and retain road segment between C and D to enable trailered aircraft movements between floatplane ramp and D.
B12B	Repair Inoperable Road Gate Arms	**Not recommended.** Recommend gates and fencing instead.
B12C	Reduce Number of Apron Access Roads on South University Ave	**Recommended.** Recommended with gates and fencing.
B12D	Add Security Gates and Complete Fencing to All Lease Lots Along South University Ave	**Recommended CIP.** Specific location requires in-depth discussions with each leaseholder at time of implementation.
B13	Delete Compass Rose (Not on Drawing)	**Recommended,** unless a new site is found after other needs are addressed.

Alternative C: Tiedown Apron and Slips		Recommendations/Actions
C1	**Resurface and Reconfigure East Ramp**	
C1A	Consolidate Ski Tiedowns Adjacent to Ski Strip (numbers TBD)	**Recommended CIP.** Emphasize pull through and wider taxilanes for aircraft maneuverability. Part of apron rehabilitation.
C1B	Increase Pull Through Tiedowns (numbers TBD)	**Recommended CIP.** Part of apron rehabilitation.
C1C	Increase Tiedown Electrical Service with Power Cost Recovery Fees or User Meters	**Recommended CIP.** Part of apron rehabilitation.
C1D	Existing Transient Parking / Fueling Site Shifted West and North to Block Taxiway B Access	**Recommended CIP.** On apron location options to be determined with apron rehabilitation.
C1E	Relocate Transient Parking to South End of Ski Tiedowns	**Recommended CIP.** On apron location options to be determined with apron rehabilitation.
C2	New Privately Developed General Aviation (GA) Facility (Where?)	**Recommended - Non-CIP Action.** Airport to continue discussions with users/developers, including possible public private partnerships (AIDEA as one example).

C3	Transient Helicopter Parking	
C3A	Relocate Transient Helicopters to East of University with Large Helicopter Lease Area	**Recommended - Non-CIP Action.** Show on ALP.
C3B	Relocate Transient Helicopters to West Side or East Side Ave Lease Lot (Not on Drawing)	**Recommended - Non-CIP Action.** Airport coordinate with leaseholders and add information in the Alaska Supplement.
C4	Increase Approximately 24 Slips (Inset A)	**Recommended CIP.** Shorten fingers to provide more space for taxiing. Reserve space for access to new floatplane ramp and for taxiing aircraft to pull away from waterlane. Consider deeper fingers after Floatpond Road is shifted.
C5	Provide Slip Electrical Service with Power Cost Recovery Fees or User Meters	**Recommended CIP.**

Alternative D: Lease Lots, Roads, and Parking		Recommendations/Actions
D1	**Add Lease Lots**	
D1A	Float Pond Commercial Lease Lots North of Floatpond Extension	**Recommended CIP.** Build new slips before new lease lots displace slips.
D1B	Float Pond Commercial Lease Lots East of Floatpond Extension	**Recommended CIP.** Build new slips before new lease lots displace slips.
D1C	Commercial Lease Lots East of Campground	**Recommended CIP.**
D1D	Shift University Avenue South to Create Commercial Lease Lots	**Recommended CIP.** Include rail realignment.
D1E	Commercial Lease Lots East of University (Long Term)	**Recommended Long Term.**
D2	Public Aircraft Viewing Area (Where?)	**Recommended** Viewing area at existing restaurant to support an airport business, discourage incursions, and has no cost.
D3	Resurface University Avenue; Provide Pedestrian Path	**Recommended CIP.** Include rail relocation and seek FHWA funding.
D4	Expanded Public Parking; Provide Electrical Service	**Recommended CIP.** Expansion and power to southern lot, which sees greater use. northern lot to be used seasonally for snow storage.
D5	Designated Snow Storage Area	**Recommended - Non-CIP Action.** Locate on northern public parking lot. M&O can implement.
D6	Improve Ground Transportation Between East and West Sides of Airport (not on drawing)	**Recommended - Non-CIP Action.** Airport to continue to explore bus service by Borough and ways to improve permitted ground transportation and rental car service.

5.4 Recommended Plan, CIP, and Implementation Plan

A draft Recommended Plan and Capital Improvement Program were prepared based on the guidance from the alternatives analysis described above. As discussed above, the Recommended Plan included: 1. a Capital Improvement Program (CIP), 2. Other Non-CIP Actions accomplished outside of the CIP by airport staff or others, and 3. Long Term Projects to be accomplished 20 or more years in the future.

During the alternatives evaluation, the air carriers informed FAI and the project team that they were no longer interested in considering use of Runway 2R/20L for air carrier operations. Consequently, the project team reevaluated the runway's length, and determined approximately 4,000 feet was required. While there is no indication that air carriers would need to use RW 2R/20L during the 20-year planning horizon, based on direction from the 2014 Master Plan, the Eastside Master Plan also recommended retaining the long-term flexibility to extend the runway to serve air carriers should conditions change. As the Recommended Plan was being developed, the planning team looked at various options for shortening RW 2R/20L, and recommended an approximately 4,500-foot-long runway, from its existing south threshold to Taxiway S. This location maintains the existing approach and navaids to RW 2R, provides maximum distance between RW 2R/20L and RW 2/20, and lines up well with Taxiway S at the north end of the runway. It also places the north end close to the primary carriers that use the runway.

The draft Recommended Plan and detailed Eastside Apron alternatives were presented at an Advisory Committee Meeting on February 11, 2019 and a public meeting on February 12, 2019. For both meetings, attendees were asked to identify the preferred timing for each project, comment on each of the projects and recommendations, and comment on and rank the apron alternatives. The Advisory Committee and public meeting participants generally supported the Recommended Plan; however, there were mixed opinions about the fencing and gate project 6. Four apron redevelopment options were presented (see Appendix B). The Advisory Committee and public meeting participants supported apron option 2A. The Meeting minutes and presentations for both meetings can be found in Appendix A. Some of the comments are also incorporated into the Implementation Plan in 5.4.1.

Following the meetings, the project team and FAI staff reviewed project ratings and comments, made some revisions, selected the preferred apron layout, 2A, and reviewed and updated project cost estimates. Primary changes to the Recommended Plan resulting from the Advisory Committee and public meetings, and FAI staff input, are summarized below.

This page intentionally left blank.

Table 5-6. Changes to Recommended Plan Based on Public Review

Capital Improvement Program (CIP) Projects	Primary Changes Made Following February 11 Advisory Committee Meeting and February 12 Public Meeting
1. Resurface/Reconstruct/Lighting Runway 2R/20L; Taxiway B Gate	• Provided bigger runnup area at TW S. • Shifted TW R north to improve tower visibility of aircraft on taxiway. • Noted potential for a pull off area east of TW B gate if there are aircraft taxiing in both directions. • Confirmed shortened runway would not have negative impacts on Runway 20L approaches and RPZ. • Continue to explore non-movement area locations for Twy B gate to secure west side. This option may not be needed long-term if fencing and gates are placed protecting East Ramp surfaces.
2. Reconstruct/Reconfigure East Apron, Provide Power to Tiedowns	• Selected option 2A. • Ski aircraft all pull through and all in rows extending from TWC to TWD. • Shifted fueling area and transient parking closer to existing pilot lounge, but not so close as to encourage passengers to enter onto apron. • Provided larger aircraft parking areas near fueling area on the west side for wheeled aircraft and on the east side for ski aircraft. • Added aircraft wash area. • Showed TW C as ADG II for its entire length, to allow larger aircraft to access new lease lots on north end.
3. Floatpond Dredging, Slip Expansion, Floatplane Ramp, and Float Pond Taxilane Feasibility	• In Implementation Plan noted option of locating ramp on north side of first new floatplane finger instead of the south side of the gravel tiedown area to address taxiing floatplanes in winds. • In Implementation Plan added note to consider a dock adjacent to ramp. • In Implementation Plan added note to consider docks as an alternative to building fingers. • Removed slips at end of the fingers to address concerns expressed about winds and nearby taxiing aircraft.
4. Resurface and Realign University Avenue, Provide Pedestrian Path, Expand Lease Area (FHWA)	• Added bus pullout for transit buses.
5. Expand Public Parking; Provide Electrical Service, Add Fencing/Signs	• No changes.
6. Continuous Fencing and Gates Along Lease Lots (fence/gate locations to be determined with tenants)	• Added gate to prevent access west of float pond.
7. Slip Expansion Phase 1, Floatplane Ramp, and Float Pond Taxilane Development	• See Project 3.
8. Extend Taxiways C and Power and Relocate Float Pond Road for Lease Lot Expansion	• Adjusted Taxiway C connection location to match relocated Taxiway C in Project 2.
9. Extend Taxiway D and Power and Relocate Float Pond Road for Lease Lot Expansion	• No changes.
10. Slip Expansion and Power Phase 2	• See Project 3.
11. Resurface Ski Strip	• No changes.

Other Non-CIP Actions	Primary Changes Made Following February 11 Advisory Committee Meeting and February 12 Public Meeting
A. Taxiway B - Delete Access from Float Pond Road	No changes.
B. Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tiedown Area	Show new fueling area in gravel tiedown area, but if the fueling area relocation does not happen until after the new floatplane fingers are built, consider the option of locating fueling on the north side of the first new finger. This is related to some concerns expressed about taxiing into the fueling area with a tailwind.
C. Close South Floatplane Ramp	Keep the south floatplane ramp open and monitor to be sure the limited use of this ramp does not impact floatpond takeoffs and landings or continue causing incursions into Runway 20L/2R RSA
D. Prohibit Vehicle Crossings of Ski Strip, Except for Maintenance and Operations	Add an uncontrolled TW T connector between TW C and Floatpond Taxilane after shortening 20L/2R. This will allow aircraft and vehicle traffic to avoid crossing the ski strip.
E. New Privately Developed General Aviation (GA) Facility (location to be determined)	Noted in description that this could be a common-use or multi-use terminal, available for multiple tenants, possibly with restaurant and bar, close by auto parking, possibly including pickup/drop off of transient passengers. Noted public portions of the terminal could be eligible for FAA funding, but airfield projects would be higher priorities for AIP funding.
F. Future Helicopter Lease Area East of University Avenue	Noted the need for tree removal.
G. Relocate Transient Helicopter Operations to West Side Lease Lots (not on drawing)	Noted use of private facilities may involve payment of fees and restrictions on operating hours.
H. Promote Improved Transportation Between East and West Sides (not on drawing)	No changes.
I. Tree Removal (not on drawing)	No changes.
J. Develop Snow Storage Area	Noted need for ongoing airport/tenant communications about snow removal.

Long Term Projects > 20 Years	Primary Changes Made Following February 11 Advisory Committee Meeting and February 12 Public Meeting
K. Commercial Lease Lots and Tiedowns East of South University Avenue	No changes.
L. Taxiway F Connector	No changes.
M. Reserve Land for Future General Aviation Facilities	No changes.

The Final Recommended Plan, with CIP costs, is shown in Figure 5-5.

The CIP considers funding constraints (limited IARF) and opportunities (FAA funding priorities and use of FHWA funds), addresses highest priorities first (fix imminent pavement failure or addressing FAA design standards), and considers proper sequencing of projects that are linked (build new slips before replacing existing slips with lease lots).

The CIP projects are listed in sequential order, and with the following timeframes:

- Phase I – Near term (0 – 5 years)
- Phase II – Medium term (6 – 10 years)
- Phase III Long term (11 – 20 years)

Because conditions, needs, and funding opportunities will change over the 20-year planning horizon, actual implementation may vary from this CIP. Timeframes, scopes of work, and costs for projects in the earlier years are more certain than projects in the later years. The 20-year capital improvement program totals $60.1 million (in 2019 dollars, not considering inflation). The costs are rough, order-of-magnitude "planning level" costs. Actual costs will differ based on the final project scope and design.

5.4.1 *Implementation Plan*

The CIP with implementation considerations is shown in Table 5-7. Cost estimate details can be found in Appendix D.

This page intentionally left blank.

Capital Improvement Program (CIP) Projects		CIP Timing	CIP Costs
1a	Resurface/Reconstruct/Lighting Runway 2R-20L	1-5 Years	$ 11,500,000
1b	Resurface/Reconfigure Taxiways for Runway 2R-20L	1-5 Years	$ 9,810,000
2	Reconstruct/Reconfigure East Apron	1-5 Years	$ 36,900,000
3	Floatpond Dredging, Slip Expansion, Floatplane Ramp, and Float Pond Taxilane Planning Study	1-5 Years	$ 500,000
4	Resurface and Realign University Avenue, Provide Pedestrian Path, Expand Lease Area (FHWA)	1-5 Years	$ 15,100,000
5	Expand Public Parking; Provide Electrical Service, Add Fencing/Signs	1-5 Years	$ 1,700,000
6	Continuous Fencing and Gates Along Lease Lots (fence/gate locations to be determined with tenants)	1-5 Years	$ 2,700,000
7	Slip Expansion Phase 1, Floatplane Ramp, and Float Pond Taxilane Development	6-10 Years	$ 20,200,000
8	Extend Taxiways C and Power and Relocate Float Pond Road for Lease Lot Expansion	6-10 Years	$ 7,700,000
9	Extend Taxiway D and Power and Relocate Float Pond Road for Lease Lot Expansion	11-20 Years	$ 5,500,000
10	Slip Expansion and Power Phase 2	11-20 Years	$ 6,400,000
11	Resurface Ski Strip	11-20 Years	$ 1,600,000
Total			$ 119,610,000

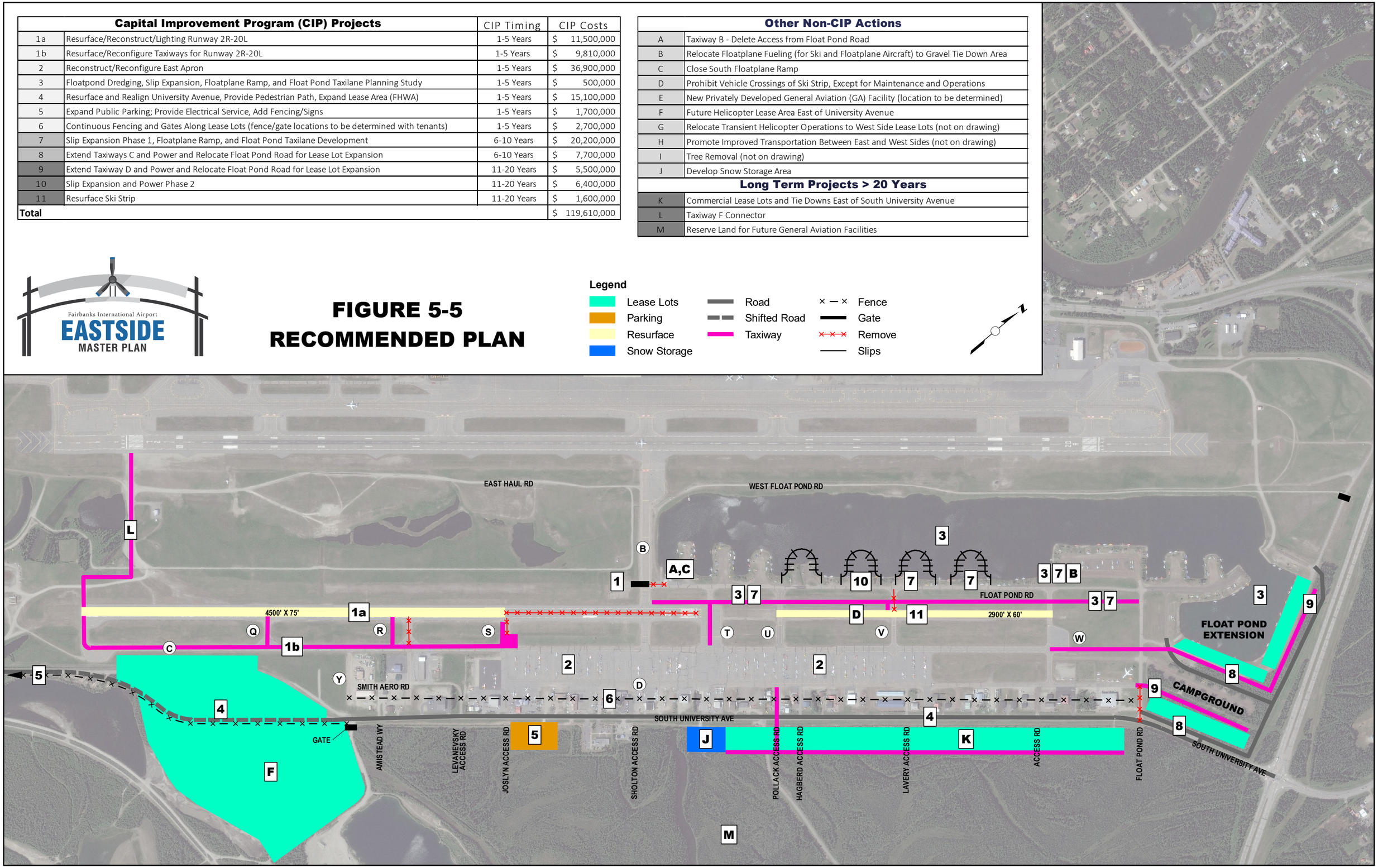
Other Non-CIP Actions	
A	Taxiway B - Delete Access from Float Pond Road
B	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tie Down Area
C	Close South Floatplane Ramp
D	Prohibit Vehicle Crossings of Ski Strip, Except for Maintenance and Operations
E	New Privately Developed General Aviation (GA) Facility (location to be determined)
F	Future Helicopter Lease Area East of University Avenue
G	Relocate Transient Helicopter Operations to West Side Lease Lots (not on drawing)
H	Promote Improved Transportation Between East and West Sides (not on drawing)
I	Tree Removal (not on drawing)
J	Develop Snow Storage Area
Long Term Projects > 20 Years	
K	Commercial Lease Lots and Tie Downs East of South University Avenue
L	Taxiway F Connector
M	Reserve Land for Future General Aviation Facilities

Fairbanks International Airport
EASTSIDE
MASTER PLAN

FIGURE 5-5
RECOMMENDED PLAN

Legend

- Lease Lots
- Parking
- Resurface
- Snow Storage
- Road
- Shifted Road
- Taxiway
- Fence
- Gate
- Remove
- Slips



This page intentionally left blank.

Table 5-7. Implementation Plan - CIP

Capital Improvement Program (CIP) Projects		Timing	Costs/Funding Sources	Description	Implementation Considerations
1a	Resurface/Reconstruct/Lighting Runway 2R/20L	1-5 Years	**Total $11,500,000** AIP $10,781,250 IARF $ 718,750	Shorten and resurface paved Runway 2R/20L to approximately 4,515 feet by 75 feet. Reconstruct sections with poor subsurface conditions and sinking/heaving pavement. Provide new runway lighting. Relocate FAA REIL and PAPI's for 20L and move runway holdlines and signs to B-II distances. Construct taxiway connectors to edge of RSA. Install powered aircraft gate across Taxiway B, west of the runway and a non-powered gate north of the floatpond to prevent vehicles from driving around the west side of the floatpond.	**Preparatory Actions:** FAA coordination on navaids. Possible further investigation of geotechnical conditions. **Interrelationships Between Projects:** Consider if runway electrical replacement should factor in any needs for the taxiway and apron electrical system and power to new lease lots. Consider separate existing/future tiedown electrical from airfield lighting electrical to capture costs and better prepare for metering tiedown electrical use. Consider reuse of waste material for other projects/needs. **Operational Issues:** Handling Eastside runway use during construction. Removal of pavement from the eliminated runway section to avoid pilot confusion. Who controls taxiway B gate? Where will the controlled surface be located after the runway is shortened and Taxiway R is relocated? **Other Considerations:** Consideration was given to shifting the runway north to avoid areas with poor soils. However, even with shifting north, the runway would overlap areas of poor soils, including some in the touchdown area. Keeping the south end in its current location means no changes to Runway 2R navaids and approaches and reduces potential RPZ and approach surface impacts on the Runway 20L end. Consider relocating the survey monument inside the RUNWAY 2R/20L holdlines to prevent surveyors from needing to occupy the airfield.
1b	Resurface/Reconfigure Taxiways for Runway 2R/20L	1-5 Years	**Total $9,810,000** AIP $9,196,875 IARF $ 613,125	Resurface the sections of Taxiway C adjacent to Runway 2R/20L. Resurface connecting taxiways and shift Taxiways S and R. Replace taxiway lighting. Provide runnup areas at taxiways C and S.	**Preparatory Actions:** Consider designing at same time as 1a. **Interrelationships Between Projects:** See 1a. **Operational Issues:** Handling Eastside runway and taxiway use during construction. **Other Considerations:** Size Taxiway S runnup area to accommodate multiple aircraft and meet FAA design guidance for runup areas. Orient runup parking north-south so aircraft runups do not impact aircraft on TW C and the Eastside ramp.
2	Reconstruct/Reconfigure East Apron	1-5 Years	**Total $36,900,000** AIP $34,593,750 IARF $ 2,306,250	Reconstruct apron and adjacent portions of Taxiway D. Shift Taxiway C to within 150 feet of centerline of RUNWAY 2/20 and expand apron into this area. Consolidate ski tiedowns on north end, straighten TWD and add adjacent 2 lane driving surface. Increase pull through tiedowns and lighted tiedowns. Resurface connector taxiways U, V, W. Relocate transient parking and private fueling lease areas with access for ski and wheeled aircraft. Provide a temporary transient parking area near the pilot lounge and add a fence/personnel-gate to eliminate access to the airfield from Sholton Access Road.	**Preparatory Actions:** Confirm type of tiedown (push back or pull through and electrical or no-electrical) for each existing tiedown permittee. Confirm which leaseholders will need seasonal ski tiedowns. Confirm if airport will provide power at cost to tiedown or GVEA to provide meter and bill tiedown permittees. Reconfirm final locations and numbers of DG2 taxilanes on the apron to provide passage from lease lots to Taxiway C. Reconfirm how close to make the transient parking and fueling area to the pilot lounge. Consider if any tie downs should be gravel without electric plug ins, at a lower tie down rate, for aircraft that fly infrequently. **Interrelationships Between Projects:** Will require runway shortening first. Electric power extension should consider power needs for projects 6, 7, 8, 9, and 10. **Operational Issues:** Identify any potential changes to controlled surfaces on Taxiway C. Provide temporary tiedowns. Sequence construction to maintain taxiway access along TW's C and D. Identify how much of TW D needs to be maintained with snowpacked surface to serve ski aircraft on apron and at lease lots. Maintain north section of TW C adjacent to ski strip with snow pack. Maintain ski tiedown area with snow pack. **Other Considerations:** Design apron electrical so it can be expanded into adjacent hangar/lease area. This option could be amended to include lease areas on the north and south ends, if leaseholders on the south end determine that they need additional lease space. This would shift the tiedowns northward and reduce lease area on the north end. Size the Taxiway U runup area to accommodate multiple aircraft, avoid impacts on aircraft on Taxiway C or the apron, and in accordance with FAA design standards.

Capital Improvement Program (CIP) Projects		Timing	Costs/Funding Sources	Description	Implementation Considerations
3	Floatpond Dredging, Slip Expansion, Floatplane Ramp, and Float Pond Taxilane Planning Study	1-5 Years	**Total $500,000** AIP $468,750 IARF $ 31,250	Complete a bathymetric survey, materials investigation, and environmental overview to assess the feasibility, methods, and design concept for floatpond dredging, an initial phase of slip expansion, expansion of power to new slips and existing slips to the north, construction of a new floatplane ramp in the gravel tiedown area, and conversion of Floatpond Road to a taxilane.	**Preparatory Actions:** Confirm if airport will provide power at cost to tiedown or GVEA to provide meter and bill slip permittees. **Interrelationships Between Projects:** Build new slips before eliminating slips when the new ramp is built and new lease lots are built in project 8. **Operational Issues:** Bathymetric survey during floatpond operations. **Other Considerations:** Some users have expressed preferences to locate the floatplane ramp and new fueling area on the first new finger, so floatplanes can taxi into the ramp into the prevailing winds. Others prefer a tailwind afforded by the proposed site on the gravel tiedown area. Both options could be considered in the feasibility study. Pilots also suggested a dock next to the ramp would allow aircraft to tie up while moving a vehicle to the ramp or while waiting to use the ramp. The functionality and cost of building floatplane docks instead of fingers with slips should be explored. Slip design should also consider whether slips should be located at the ends of the fingers where they are more subject to winds and taxiing aircraft in the taxi channel next to the waterlane. Several options for Floatpond Taxilane are included in Appendix x to the master plan report, including deepening the floatplane fingers or locating a row of ski tiedowns between Floatpond Road and the new taxiway. The gravel tiedown area could also be expanded east toward the new taxiway, to add more tiedowns.
4	Resurface and Realign University Avenue, Provide Pedestrian Path, Expand Lease Area (FHWA)	1-5 Years	**Total $15,100,000** FHWA $13,590,000 IARF $ 1,510,000	Resurface University Avenue South and provide an adjacent multi-use pathway. Continue resurfacing and path all the way around the south end of the airport and to the terminal curbside area, approximately 4.6 miles. Provide bus pullouts. Realign a section of University Avenue South and the adjacent railroad tracks to provide for more lease space along Taxiway C.	**Preparatory Actions:** Work with FMATS to secure FHWA funding. FMATS indicates they are supportive of the project, but it is more likely to be funded in the medium to long term because of other project priorities. Airport may have to provide matching funds. Wetlands permitting. **Interrelationships Between Projects:** None. **Operational Issues:** Road access during construction. **Other Considerations:** Additional rail upgrades may be considered to support rail delivery of fuel to the airport.
5	Expand Public Parking; Provide Electrical Service, Add Fencing/Signs	1-5 Years	**Total $1,700,000** IARF $1,700,000	Expand public parking and provide electric plug ins for parked vehicles. Construct fencing, gates and signage in select areas on the east and south sides of the airport to promote safety and reduce unauthorized use of airport property.	**Preparatory Actions:** Coordination with parking concessionaire. Wetlands permitting. **Interrelationships Between Projects:** May be able to use waste material from runway or apron as fill for parking lot expansion. **Operational Issues:** Parking during construction. **Other Considerations:** Addressing public opposition to restricting access where people are accustomed to recreating. This project responds to FAA land use inspection issues.
6	Continuous Fencing and Gates Along Lease Lots (fence/gate locations to be determined with tenants)	1-5 Years	**Total $2,700,000** AIP $2,531,250 IARF $ 168,750	Construct fencing and gates along lease lots to control access to the airfield. Construct powered gates across selective roads accessing the airfield. Construct fence and non-powered gates on lease lots.	**Preparatory Actions:** Work with tenants to confirm feasibility and define fence/gate locations and determine which roads do not need to connect to the airfield. Identify method to trigger automatic gate openers and if badging is required, complete badging of airport users in advance of the project. Determine how new lease lot development areas to the north will fit into fencing/gate plan. **Interrelationships Between Projects:** Power for gates might be considered with project 2. **Operational Issues:** Badging or other system to trigger powered gates. **Other Considerations:** Develop a fence/gate configuration before it is mandated so airport and users have the most control over the layout and opener system. Take advantage of FAA interest in funding this project. This project meets documented FAI Wildlife Hazard Management Plan (WHMP) goal for excluding large mammals from airfield. TSA may require addition of controlled Eastside areas to Airport Security Program.

Capital Improvement Program (CIP) Projects		Timing	Costs/Funding Sources	Description	Implementation Considerations
7	Slip Expansion Phase 1, Floatplane Ramp, and Float Pond Taxilane Development	6-10 Years	**Total $20,200,000** AIP $18,937,500 IARF $ 1,262,500	Construct 2 floatplane fingers and provide additional floatplane slips. Provide power to the new slips and existing slips to the north. Complete floatpond dredging, construct a new floatplane ramp in the gravel tiedown area, and convert Floatpond Road to a taxilane.	**Preparatory Actions:** Confirm if airport will provide power at cost to tiedown or GVEA to provide meter and bill slip permittees. **Interrelationships Between Projects:** This project will be designed based on the feasibility work in project 3. Build new slips before eliminating slips when the new ramp is built and new lease lots are built in project 8. **Operational Issues:** Construction in an operational floatpond. **Other Considerations:** Possibly break into several separate projects if funding limitations require smaller projects.
8	Extend Taxiways C and Power and Relocate Float Pond Road for Lease Lot Expansion	6-10 Years	**Total $7,700,000** AIP $7,218,750 IARF $ 481,250	Extend Taxiway C and power north to new lease lot development area. Relocate Floatpond Road access to the area.	**Preparatory Actions:** Timing of construction partly based on expressions of interest in leasing the area. Considering issuing a Request for Interest to assess user interest. **Interrelationships Between Projects:** Determine how fencing/gate plan in project 6 fits into the plan. It is possible that fencing and gate changes would make it unnecessary to relocate the existing access on Floatpond Road. **Operational Issues:** Road access during construction. Maintain access to floatplane ramp, transient tiedowns and campground. **Other Considerations:** Preliminary concept shown in Appendix C. Preserve trees to maintain campground aesthetics.
9	Extend Taxiway D and Power and Relocate Float Pond Road for Lease Lot Expansion	11-20 Years	**Total $5,500,000** AIP $5,156,250 IARF $ 343,750	Extend Taxiway D and power north to new lease lot development area. Extend Floatpond Road and Taxiway for additional floatplane accessible lease lots, if supported by user interest.	**Preparatory Actions:** Timing of construction partly based on expressions of interest in leasing the area. Considering issuing a Request for Interest to assess user interest. **Interrelationships Between Projects:** None. **Operational Issues:** None. **Other Considerations:** Preliminary concept shown in Appendix C.
10	Slip Expansion and Power Phase 2	11-20 Years	**Total $6,400,000** AIP $6,000,000 IARF $ 400,000	Construct another floatplane finger and provide additional floatplane slips. Expand power to new slips and existing slips to the south.	**Preparatory Actions:** Confirm if airport will provide power at cost to tiedown or GVEA to provide meter and bill slip permittees. **Interrelationships Between Projects:** This project will be designed based on the feasibility work in project 3. Build new slips before eliminating slips when the new ramp is built and new lease lots are built in project 9. **Operational Issues:** Construction in an operational floatpond. **Other Considerations:** May build two fingers if supported by demand and funding is available.
11	Resurface Ski Strip	11-20 Years	**Total $1,600,000** AIP $1,500,000 IARF $ 100,000	Resurface the RUNWAY 2/20 with gravel. Change RDG to A-1 Small.	**Preparatory Actions:** Monitor surface condition and resurface when needed. **Interrelationships Between Projects:** None. **Operational Issues:** Runway use during construction. **Other Considerations:** None.
	Total CIP Cost		**Total $119,610,000** **AIP** $ 96,384,375 **FHWA** $ 13,590,000 **IARF** $ 9,635,625		

This page intentionally left blank.

Implementation considerations for Non-CIP Actions and Long-Term Projects are shown in Table 5-8.

Table 5-8. Implementation Plan – Other Non-CIP Actions and Long-Term Projects

Other Non-CIP Actions		Implementation Considerations
A	Taxiway B - Delete Access from Float Pond Road	None
B	Relocate Floatplane Fueling (for Ski and Floatplane Aircraft) to Gravel Tiedown Area	Some user opinions about locating this on the first new finger.
C	Close South Floatplane Ramp	Do not implement at this time, may not be necessary if fueling area is relocated. Monitor conflicts with waterlane operations and 20L RSA. Users suggest ramp use will be low and limited to spring/fall and will be reduced by having another ramp in the gravel tiedown area.
D	Prohibit Vehicle Crossings of Ski Strip, Except for Maintenance and Operations, Emergency Response	Consider providing an uncontrolled vehicle/aircraft route on Taxiway T, between the paved and gravel runways after 20L/2R is shortened.
E	New Privately Developed General Aviation (GA) Facility (location to be determined)	Some interest in a common use or multi-use terminal, possibly with restaurant, bar, close-by auto parking, transient pickup/drop off area.
F	Future Helicopter Lease Area East of University Avenue	Trees on adjacent property may need to be removed so that the tower can see this lot. Wetlands permitting would need to be part of development.
G	Relocate Transient Helicopter Operations to West Side Lease Lots (not on drawing)	Use of lease lots could involve paying additional fees and operating hours restrictions but would make fueling more convenient.
H	Promote Improved Transportation Between East and West Sides (not on drawing)	Ongoing work to provide bus service, improve access to rental cars and FAI permitted ground transportation providers.
I	Tree Removal (not on drawing)	None
J	Develop Snow Storage Area	Consider discussing at spring/fall snow meetings. Consider inviting snow hauling contractors to see if airport tenants want to work together to contract for snow hauling. Ensure any contractor is familiar with airfield evironment prior to work. Consider adopting rate/fee, individual tenant agreements and/or an Operational Order to provide guidance on use and address environmental concerns.

Other Non-CIP Actions		Implementation Considerations
Long Term Projects > 20 Years		
K	Commercial Lease Lots and Tiedowns East of South University Avenue	When demand dictates. Will need to develop a safe aircraft crossing of University Avenue South.
L	Taxiway F Connector	Long term, only if needed.
M	Reserve Land for Future General Aviation Facilities	Long term, only if needed.

5.4.2 *Environmental Analysis*

5.4.2.1 Introduction

This section assesses the potential for environmental impacts and identifies additional analysis or permits required for CIP projects described above and briefly discusses the likely NEPA class of action, based on environmental categories identified by FAA Order 1050.1F. This environmental analysis assumes all CIP projects would be funded by the FAA or otherwise require an FAA action, thus necessitating environmental documentation required under the National Environmental Policy Act (NEPA). While project 4 is more likely to receive FHWA funding, the environmental documentation would be very similar to that required by the FAA. While project 5 may be funded with International Airport Revenue funding, this analysis shows what impacts and permits might be required if FAA funds are used instead.

Most CIP projects are anticipated to require a Categorical Exclusion (CE), per FAA Order 1050.1F paragraph 5-1; however, the class of action would be determined by the responsible FAA official, who may determine "extraordinary circumstances" exist, and require an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

Under paragraph 5-6 (1050.1F) are a list of actions that are typically covered by CEs. The following are actions from this list applicable to most CIP projects:

- Actions involving acquisition, repair, replacement, maintenance, or upgrading of grounds, infrastructure, buildings, structures, or facilities that generally are minor in nature.
- Acquisition of land and relocation associated with a categorically excluded action.
- Federal financial assistance, licensing, or ALP approval for the following actions, provided the action would not result in significant erosion or sedimentation, and will not result in a significant noise increase over noise sensitive areas or result in significant impacts on air quality.
    - Construction, repair, reconstruction, resurfacing, extending, strengthening, or widening of a taxiway, apron, loading ramp, or runway safety area (RSA), including an RSA using Engineered Material Arresting System (EMAS); or
    - Reconstruction, resurfacing, extending, strengthening, or widening of an existing runway.
- Placing earthen fill into previously excavated land with material compatible with the natural features of the site, provided the land is not delineated as a wetland; or minor dredging or filling of wetlands or navigable waters for any categorically excluded action, provided the fill is of material compatible with the natural features of the site, and the dredging and filling qualifies for an U.S. Army Corps of Engineers nationwide or a regional general permit.

Of the 11 CIP projects evaluated, five CIP projects (projects 1, 2, 3, 4, 7) may potentially include extraordinary circumstances, due to potential impacts related to hazardous materials and wetlands.

5.5 Environmental Analysis

Each CIP project will need to be further evaluated for potential impacts to environmental categories per Chapter 4 of 1050.1F once design has advanced. Most categories have associated impact thresholds, which are detailed below

For most categories, only minor impacts are anticipated. Minor impacts are those which do not meet impact thresholds or require a permit but will require documentation of the analysis. For most CIP projects, analysis in the CE would be necessary to determine if impacts exist, and to what extent. Additionally, most CIP projects are anticipated to require either a flood hazard permit or a Section 404 permit, due to work under the ordinary high-water mark, or for fill in wetlands. Those projects requiring Section 404 permits may qualify for a Nationwide Permit.

Table 5-9 summarizes the potential for impacts and analysis or permits required for each CIP project and environmental category.

Table 5-9. CIP Projects and Applicable Environmental Categories

CIP Project	Air Quality	Biological resources *	Climate	Coastal resources	Section 4(f)	Farmlands	Hazardous materials, solid waste, and pollution prevention	Historical, architectural, archeological, and cultural	Land use	Natural resources and energy	Noise and compatible land use	Socioeconomics, environmental justice, and children's environmental health and safety	Visual effects	Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)
1	m	m	m	N/A	N/A	N/A	A	A	A	m	A	m	m	m
2	m	m	m				A	A	A	m	m	m	m	m
3	m	A	m				A	A	A	m	m	m	m	I
4	m	A	m				A	A	A	m	m	m	m	I
5	m	m	m				A	A	A	m	m	m	m	I
6	m	m	m				m	A	A	m	m	m	m	m
7	m	A	m				A	A	A	m	m	m	m	I
8	m	m	m				m	A	A	m	m	m	m	m
9	m	m	m				m	A	A	m	m	m	m	m
10	m	A	m				m	A	A	m	m	m	m	I
11	m	m	m				m	A	A	m	m	m	m	m

* includes fish, wildlife, and plants
"m" denotes negligible to minor impacts
"A" denotes need for additional analysis to determine impacts
"I" denotes impact anticipated or permit required
N/A: Resource category not present

Coastal resources, farmlands, and Wild and Scenic Rivers are not present in the project area and will not be discussed in this plan.

The following summary of resources is based on the 2014 Master Plan Update for the Fairbanks International Airport (FAI 2014). When applicable, other sources are denoted.

5.5.1 *Section 4(f) Properties*

Section 4(f) of the Department of Transportation Act is designed to protect public recreation lands from being incorporated into transportation facilities and to protect the activities, features or attributes of the resource from being diminished. Resources protected by Section 4(f) are publicly owned parks, recreation areas, wildlife and waterfowl refuge of national, state, or local significance; and historic sites of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. No Section 4(f) lands have been identified for FAI.

5.5.2 *Air Quality*

NEPA Significance Threshold: The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards, as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.

None of the CIP projects are anticipated to result in a significant increase in the number or type of aircraft operations as the CIP projects involve upgrades and revitalization of current airport property. None of the CIP projects would significantly change the location of airport operations or make them closer to nearby residential areas

Compliance with state and federal air quality regulations should minimize any adverse effects resulting from the CIP projects. There are three air quality permits issued to FAI and more analysis is needed to assess the CIP projects under these permits. Air emissions during construction would likely occur during the summer, which is likely negligible.

5.5.3 *Biological Resources (Including Fish, Wildlife, and Plants)*

NEPA Significance Threshold: The U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat. The FAA has not established a significance threshold for non-listed species.

Factors to Consider: Whether the action would have the potential for:

- A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large project area (e.g., a new commercial service airport);
- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats;
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or
- Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.

There are no listed federally threatened or endangered species in Fairbanks.

Undeveloped land adjacent to FAI include wetlands, riparian, and forest habitat which provide support a wide variety of wildlife and birds. Northern pike are reported to be in the FAI float pond.

Although most of the CIP projects would occur in developed or disturbed areas, CIP projects 3, 4, 5, 7, would require in-water work or impacts to wetlands and upland habitat. All other CIP projects would primarily occur within previously developed areas

and be expected to have minimal effects on either fish or wildlife. None of the CIP projects are anticipated to lead to a long-term or permanent loss of plant or wildlife species, cause adverse impacts to special status species or their habitats, result in a substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or cause an adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality, or ability to sustain a minimum population level required for population maintenance.

In July of 2015, the Fairbanks Soil Water Conservation District, General Aviation Association, and Fairbanks International Airport employees conducted an invasive plant survey of the Fairbanks Airport Float Pond. Sixteen locations along the pond's perimeter were sampled. Elodea was not found at any sampling location. Sampling has continued annually, most recently in 2018, and no elodea has been detected. Construction in the Float Pond has the potential to introduce new invasive species to the project site through construction equipment or by importing fill containing invasive species.

A Fish Habitat Permit from the State of Alaska Department of Fish and Game may be required for CIP projects 3, 7, and 10 as construction work may occur below the ordinary high-water mark of the floatpond.

5.5.4 *Climate*

NEPA Significance Threshold: The FAA has not established a significance threshold for Climate.

Draft Council on Environmental Quality (CEQ) guidance affirmed the applicability of NEPA and the CEQ regulations to greenhouse gases (GHG) and climate. The CEQ guidelines ask agencies to consider two factors: the potential effects of a proposed action (as indicated by GHG emissions), and the implication of climate change for environmental effects of a proposed action. Of the six recognized GHG, only carbon dioxide is a direct product of aircraft combustion. There are no significance thresholds regarding GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions.

None of the CIP projects would change the number of aircraft operations; there would be no measurable increase of GHGs.

5.5.5 *Hazardous Materials, Solid Waste, and Pollution Prevention*

NEPA Significance Threshold: The FAA has not established a significance threshold for hazardous materials, solid waste, and pollution prevention.

Factors to Consider: The action would have the potential to:

- Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;

- Involve a contaminated site (including but not limited to a site listed on the National Priorities List). Contaminated sites may encompass relatively large areas. However, not all of the grounds within the boundaries of a contaminated site are contaminated, which leaves space for siting a facility on non-contaminated land within the boundaries of a contaminated site. An EIS is not necessarily required. Paragraph 6-2.3.a of FAA Order 1050.1F allows for mitigating impacts below significant levels (e.g., modifying an action to site it on non-contaminated grounds within a contaminated site). Therefore, if appropriately mitigated, actions within the boundaries of a contaminated site would not have significant impacts;
- Produce an appreciably different quantity or type of hazardous waste;
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- Adversely affect human health and the environment.

Nineteen contaminated sites are documented in the project area and a groundwater plume of PFAS has been identified that underlies most of FAI. Eighteen of these hazardous sites are immediately adjacent to the apron and include five active sites and one site with institutional controls. CIP Projects 1, 2, 3, 4, 5, 7, 10, and 11 are all in close vicinity to a contaminated site. Prior to any initiation of ground disturbance, ADEC will be consulted with to comply within any applicable institutional controls.

None of the CIP projects are anticipated to violate any applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; produce an appreciably different quantity or type of hazardous waste; generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or adversely affect human health and the environment.

5.5.6 *Historical, Architectural, Archeological, and Cultural Resources*

NEPA Significance Threshold: The FAA has not established a significance threshold for Historical, Architectural, Archeological, and Cultural Resources.

Factors to Consider: The action would result in a finding of Adverse Effect through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact).

The following is from the 2014 MP:

> *The 2004 FAI Master Plan indicated that the State of Alaska Office of History and Archaeology's Alaska Heritage Resource Survey (AHRS) did not identify any historic, archaeological, architectural or cultural resources at that time. Changes in access protocol to the AHRS database since 2004 have drastically limited access, therefore a new search could not be conducted.*

The existing footprint of FAI has been substantially altered and is unlikely to contain any prehistoric artifacts. Any future expansion into the largely undeveloped area to the east of University Avenue South would likely require a cultural resources survey and coordination with the State Historic Preservation Officer (SHPO).

In order to be eligible for the National Register of Historic Places (NRHP), a historic place must meet certain eligibility requirements including age, integrity, and historic significance. The age requirement for NRHP eligibility is 50 years. According to the AHRS property database, there are at least three buildings located to the north of the passenger terminal that were built between 1951 and 1958 and are therefore older than 50 years. The AHRS property database also lists several buildings on airport property along South University Avenue and Airport Industrial Road that were constructed between 1968 and 1970 (Figure 2-27) and will reach the 50-year age requirement for NRHP eligibility beginning in the year 2018. Any future developments should take into consideration the potential for historic eligibility of these buildings. It should be noted that an age of 50 years or greater does not automatically qualify a structure as eligible for the NRHP, as the building's integrity and historic significance must also be taken into account.

The closest NRHP-listed site is the Chena Pump House, which is located approximately a mile west of the airport on the other side of the Chena River.

As the CIP projects are further developed, the airport and FAA would be required by federal law to conduct an environmental review process under NEPA and Section 106 of the National Historic Preservation Act (NHPA). These two processes are separate, but the Section 106 process is coordinated with NEPA and contributes to its development and analysis. Consultation with the State Historic Preservation Office (SHPO), tribal governments, the airport, and other interested entities identified by them, would be required pursuant to Section 106 of the NHPA. Opportunities to avoid, minimize, and mitigate impacts resulting from airport development would be addressed in these processes. Concurrence from the SHPO regarding impacts to historic resources would be required for all CIP projects. No adverse effects are anticipated to result from CIP projects.

5.5.7 *Land Use*

NEPA Significance Threshold: The FAA has not established a significance threshold for Land Use.

Factors to Consider: There are no specific independent factors to consider for Land Use. The determination that significant impacts exist in the Land Use impact category is normally dependent on the significance of other impacts.

All of the CIP projects listed in Table 7-1 have the potential to require a consistency review of land use and development restrictions within the project area.

The majority of the proposed CIP projects consist of maintenance and upgrade of existing airport facilities. Some of the proposed CIP projects may result in a need to change lease boundaries or relocate slips or facilities. If federal funds are used for CIP projects include property acquisition, the federal funding could trigger compliance with Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Polices Act of 1970 (Uniform Act). The Uniform Act is designed to provide for fair and equitable treatment for entities whose real property is being acquired, or who must move as a result of a project receiving federal funds. Each CIP project will need to be evaluated to determine if the project triggers the Uniform Act.

5.5.8 *Natural Resources and Energy Supply*

NEPA Significance Threshold: The FAA has not established a significance threshold for Natural Resources and Energy Supply.

Factors to Consider: The action would have the potential to cause demand to exceed available or future supplies of these resources.

None of the CIP projects are anticipated to require more than a minor increase in energy demands.

5.5.9 *Noise and Compatible Land Use*

NEPA Significance Threshold: The action would increase noise by a Day-Night Average Sound Level[1] (DNL) 1.5 decibels (dB) or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

Factors to Consider: Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question. For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low, and a quiet setting is a generally recognized purpose and attribute.

Most of the CIP projects involve upgrades and revitalization of current airport property and are not anticipated to result in substantive changes in the aircraft operation

[1] The 24-hour average sound level, in dB, for the period from midnight to midnight, obtained after the addition of ten dB to sound levels for the periods between midnight and 7 a.m., and between 10 p.m. and midnight, local time.

numbers or noise levels. Project 1 involves shortening the runway but is not expected to increase noise levels or significantly change which areas are impacted by noise.

5.5.10 *Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks*

NEPA Significance Threshold: The FAA has not established a significance threshold for Socioeconomics, Environmental Justice or Children's Environmental Health.

5.5.10.1 Socioeconomics

Factors to Consider: The action would have the potential to:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);
- Disrupt or divide the physical arrangement of an established community;
- Cause extensive relocation when sufficient replacement housing is unavailable;
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or
- Produce a substantial change in the community tax base.

The proposed CIP projects would improve safety and increase mobility and accessibility within the Airport. None of the CIP projects are anticipated to induce substantial economic growth in an area, either directly or indirectly; disrupt or divide the physical arrangement of an established community; cause extensive relocation when sufficient replacement housing is unavailable; cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or produce a substantial change in the community tax base.

5.5.11 *Environmental Justice*

Factors to Consider: The action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to:

- Significant impacts in other environmental impact categories; or
- Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.

5.5.11.1 Children's Environmental Health

Factors to Consider: The action would have the potential to lead to a disproportionate health or safety risk to children.

None of the CIP projects are anticipated to result in significant impacts in other environmental impact categories or impact an environmental justice population.

5.5.12 *Visual Effects (Including Light Emissions)*

NEPA Significance Threshold: The FAA has not established a significance threshold for Light Emissions or Visual Resources/Visual Character.

5.5.12.1 Light Emissions

Factors to Consider: The degree to which the action would have the potential to:

- Create annoyance or interfere with normal activities from light emissions; and
- Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.

None of the CIP projects are anticipated to significantly increase lighting or measurably affect the visual character of the area due to light emissions.

5.5.13 *Visual Resources/Visual Character*

Factors to Consider: The extent the action would have the potential to:

- Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
- Contrast with the visual resources and/or visual character in the study area; and
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

The proposed CIP projects would not change the visual character of the area, contrast with the existing character the airport, or block or obstruct any visual resources.

None of the CIP projects are anticipated to create annoyance or interfere with normal activities from light emissions; affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.

5.5.14 *Water Resources (Including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)*

5.5.14.1 Wetlands

NEPA Significance Threshold: The action would:

- Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- Be inconsistent with applicable state wetland strategies.

A U.S. Army Corps of Engineers (USACE) Section 404 permit for the placement of fill in Waters of the U.S. is likely required for implementation of CIP projects 3, 4, 5, 7, and 10. The extent of impacts and whether impacts would qualify for a nationwide permit are unclear given the preliminary nature of design.

5.5.14.2 Floodplains

NEPA Significance Threshold: The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, Floodplain Management and Protection.

According to Federal Emergency Management Agency (FEMA) flood insurance maps (Community Panel 025009 0183), The project area lies within Zones A (100-year floodplain without base flood elevation), AE (100-year floodplain with base flood elevations), and X500 (500-year floodplain protected by levees.

None of the CIP projects are anticipated to cause notable adverse impacts on natural and beneficial floodplain values.

5.5.14.3 Surface Waters

NEPA Significance Threshold: The action would:

- Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or
- Contaminate public drinking water supply such that public health may be adversely affected.

Factors to Consider: The action would have the potential to:

- Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;
- Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

Although much of the area is paved, there are waterbodies (small ponds, larger open bodies of water, intermittent and annual waterways) present in the study area.

The Tanana River, ponds, remnant sloughs and wetlands are the receiving waters for all storm water discharges from FAI.

No permits from DEC would be needed as stormwater runoff would consist of sheet flow with no point sources of discharge.

Construction related to CIP projects may cause a temporary degradation of water quality. Dredging and repairing/replacing of floatplane ramps would cause a temporary degradation of water quality by increasing turbidity. Implementation of best management practices for minimizing impacts would reduce the potential for water quality effects during construction.

None of the CIP projects are anticipated to exceed established water quality standards; contaminate public drinking water supply such that public health may be adversely affected; adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or present difficulties based on water quality impacts when obtaining a permit or authorization.

5.5.14.4 Groundwater

NEPA Significance Threshold: The action would:

- Exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; or
- Contaminate an aquifer used for public water supply such that public health may be adversely affected.

Factors to Consider: The action would have the potential to:

- Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values;
- Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

From the 2014 MP:

> *The airport is situated near the confluence of the Tanana giver (to the south) and the Chena River (to the west). Groundwater has been reported in most of the boreholes drilled at the airport, at depths generally ranging from about 10 to 20 feet. Based on data reported in Claar and Lilly (1997), the groundwater flow across ranges seasonally between the northwest and southwest (towards the Chena giver), and the depth of groundwater is influenced by both the Tanana and Chena givers, which fluctuate throughout the year.*

Groundwater in the project area is shallow, and due to the extensive contamination, could be impacted. According to the ADEC, drinking water wells in the Dale Road neighborhood sampled in 2017 had contamination present related to the PFAS plume.

Prior to any initiation of ground disturbance within the PFAS plume area, ADEC will be consulted to determine best management practices for minimizing impacts to groundwater.

None of the CIP projects are anticipated to exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; contaminate an aquifer used for public water supply such that public health may be adversely affected; adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values; adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or present difficulties based on water quality impacts when obtaining a permit or authorization.

Fairbanks International Airport

EASTSIDE MASTER PLAN

PREPARED FOR:

Fairbanks International Airport
AeroNexus®

PREPARED BY:

DOWL

WITH A GRANT FROM:

FEDERAL AVIATION ADMINISTRATION