Matanuska-Susitna Regional Aviation System Plan Study, Phase II

May 2017

DOWL

MATANUSKA-SUSITNA BOROUGH
REGIONAL AVIATION SYSTEM PLAN
PHASE II SITING STUDY

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Appendix A....Public Involvement
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Appendix C....Capital Cost Estimates
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LIST OF ACRONYMS

AAB ..... Aviation Advisory Board
AAC ..... Alaska Administrative Code
ADF&G ..... Alaska Department of Fish and Game
AIP ..... Airport Improvement Program
ANC ..... Ted Stevens Anchorage International Airport
CDP ..... Census Designated Place
CMGTW ..... Certificated Maximum Gross Take-off Weight
DEC ..... State of Alaska Department of Environmental Conservation
DOT&PF ..... State of Alaska Department of Transportation and Public Facilities
FAA ..... Federal Aviation Administration
GA ..... General Aviation
IDSHD ..... Iditarod Dog Sledding Historic District
LHD ..... Lake Hood Airport
MRI ..... Merrill Field Airport
MSB ..... Matanuska-Susitna Borough
NEPA ..... National Environmental Policy Act
NPIAS ..... National Plan of Integrated Airport Systems
RNAV ..... Area Navigation
SHPO ..... State Historic Preservation Office
SPB ..... Seaplane Base
SREB ..... Snow Removal Equipment Building
USFWS ..... United States Fish and Wildlife Service
VFR ..... Visual Flight Rules

EXECUTIVE SUMMARY

The Phase One Siting Study evaluated the need for additional airport facilities within the Matanuska Susitna Borough. It determined that there existed unmet demand for a seaplane base in the southern portion of the Borough. Twenty-three potential sites were analyzed and three sites were recommended for further investigation.

The primary objectives of the Phase Two Siting Study are to: 1) refine the evaluation of potential seaplane base sites in the southern Matanuska Susitna Borough undertaken in the Phase One Siting Study, and 2) recommend a long-term development program for a preferred site to yield a safe, environmentally acceptable, and financially sustainable seaplane base.

Starting with an expanded list of 41 potential seaplane base sites, this study used objective site selection criteria and an extensive public involvement process to identify a preferred site at Sevenmile Lake. Aircraft activity forecasting, seaplane base design analysis, and construction cost estimating were used to develop a 20-year program of improvements at the site intended to serve anticipated aviation needs. Incremental and cumulative cost estimates for the various development stages are shown in Table ES-1.

Table ES-1: Estimated Costs by Development Stage

	Estimated Costs by Development Stage			
	Initial 2020	**Near-Term 2025**	**Mid-Term 2030**	**Ultimate 2040**
Capital	$27,426,000	$30,874,000	$18,300,000	$ 54,500,000
Equipment	$ 510,000	$ 800,000	$ 0	$ 735,000
Building	$ 624,000	$ 1,248,000	$ 0	$ 5,616,000
Labor	$ 205,000	$ 304,000	$ 403,000	$ 544,000
Maintenance	$ 79,160	$ 110,460	$ 119,152	$ 318,212
Totals				
Stage	**$28,846,180**	**$33,338,485**	**$18,824,182**	**$ 61,715,252**
Cumulative	**$28,846,180**	**$62,184,665**	**$81,008,847**	**$142,724,099**

Provided that the new seaplane base was listed in the National Plan of Integrated Airport Systems, the seaplane base owner/operator (aka “sponsor”) qualified to receive Federal Aviation Administration Airport Improvement Program grants and could provide the required grant match funding, approximately 95 percent of eligible capital expenses could be reimbursed by the

federal government. Non-eligible capital as well as labor and maintenance expenses would be the responsibility of the seaplane base sponsor.

Annual operating cost (i.e., labor and maintenance) and revenue projections are compared in Table ES-2 to evaluate the financial sustainability of the facility. To meet costs, the facility would likely require an annual operating subsidy of approximately $267,000 upon opening. This subsidy could increase over the following 20 years to approximately $775,000 annually at full facility build-out.

Table ES-2: Projected Annual Operating Revenue and Cost by Development Stage

	2020	2025	2030	2040
Operating Revenue	$ 18,006	$ 37,692	$ 55,482	$ 87,465
Operating Cost	$284,160	$414,460	$522,152	$862,212
Deficit	-$266,154	-$376,768	-$466,670	-$774,747

This study also identifies potential capital and operating resources, and explores potential organizational strategies for the ownership and operation of the airport.

1.0 INTRODUCTION

1.1 Study Objectives

The primary objectives of the Phase Two Siting Study are to: 1) refine the evaluation of potential floatplane base seaplane base (SPB) sites in the southern Matanuska Susitna Borough (MSB) undertaken in the Phase One Siting Study, and 2) recommend a long-term development program for a preferred site to yield a safe, environmentally acceptable, and financially sustainable floatplane facility.

1.2 Public Involvement

Appendix A contains a summary of public involvement efforts conducted during the preparation of this study, including communications with interested individuals and groups, meetings with the MSB Airport Advisory Commission, Big Lake Community Council, Palmer Airport Advisory Commission, and the Wasilla Airport Advisory Commission. A survey of 237 aircraft owners and operators was also conducted and an informational display was staffed by the project team at the MSB Transportation Fair.

The MSB created a webpage on their website dedicated to the project. Information about the project, tasks, and documents can be viewed from there by any member of the public. The website can be viewed at http://www.matsugov.us/plans/rasp.

2.0 OVERVIEW OF PHASE I STUDY

The Phase One Siting Study evaluated the need for additional airport facilities within the MSB. It determined that there existed unmet demand for a seaplane facility in the southern portion of the MSB. Thirty-five potential sites were analyzed (Table 2-1) and three sites were recommended for further investigation (Table 2-2).

Table 2-1: Potential SPB Sites Evaluated in Phase I but Not Recommended

Public SPB Sites	Reasons Dropped from Consideration	Reconsider for Phase II
Subdivision in Palmer (Palmer Gravel Pit)	-May not be available to public -Uncertain timeline -Conflict with Skyranch Airpark -Proposed residential development	No
Wasilla Lake	-Existing recreation and residential development -Prior City opposition to a SPB there	No
Existing Private Airports	-Lack of capacity -May not be available to public -Existing recreation and residential development	No
Willow Airport	-Existing recreation and residential development -Existing community concerns about existing air taxi operations -Highway between lake and runway	No
Big Lake (existing ramp)	-Existing recreation and residential development -Highway between park and Big Lake Airport	No
Talkeetna Airport	-Community opposition to seaplane activity -Hydrologic issues of constructing a pond on the airport	No
Palmer Airport	-Limited space for pond	No
Wasilla Airport	-Use of Jacobsen Lake would require a control tower -Community opposition during last Master Plan -Current master plan recommends SPB on Wasilla Airport	**Yes**
Palmer Hay Flats	-Runway length of 2,700 feet -Conflicts with surrounding Game Refuge	No
Jacobsen Lake	-Conflict with Wasilla Airport would require control tower -Community opposition during Wasilla Airport Master Plan	No
Christensen Lake	-Community opposition to seaplane activity	No
Fish Lake	-Community opposition to seaplane activity	No

Lake Lucille	-Existing recreation and residential development -No public runway	No
Horseshoe Lake	-Existing recreation and residential development	No
Papoose Lakes	-Existing recreation and residential development -Remote location -Poor road access	**Yes**
Red Shirt Lake	-Remote location -No road access	No
Three-Mile Lake	-Existing Girl Scout camp -Lack of publicly owned land	No
Diamond Lake	-Existing recreation and residential development	No
Stephan Lake	-Existing residential development -Lack of good road access	No
Carpenter Lake	-Existing recreation and residential development -Lack of suitable publicly owned land	No
Other Lakes near Point Mackenzie	-Potential conflicts with Anchorage airspace	No

Private SPB Sites	Reasons Dropped from Consideration	Reconsider for Phase II
Beaver Lake Seaplane	- No public runway	No
Brocker Lake Seaplane	- Very small lake	No
Butte Municipal Airport	- No seaplane facility	No
Cottonwood Lake Seaplane	- No public runway	No
Finger Lake Seaplane	- No public runway	No
Gooding Lake Seaplane	- No public runway	No
Jones Landing Seaplane	- Very small lake - No runway	No
Jonesville Mine	- No seaplane facility	No
Morvro Lake Seaplane	- No public runway	No
Nancy Lake Seaplane	- No public runway	No
Niklason Lake Seaplane	- No public runway	No
Seymour Lake Seaplane	- No public runway	No
Visnaw Lake Seaplane	- No public runway	No
Wolf Lake	- Significant residential -Lake is constrained (too small) *Wolf lake was not originally examined.	No

Table 2-2: Phase I SPB Sites Carried Forward For Further Investigation

	Goose Bay Airport	Big Lake Airport	Sevenmile Lake
Airspace	Good	Good	Good
Winds	Poor	Fair	Good
Topography	Good	Good	Good
Geotechnical Data	None	Some	None
Land Ownership	Good	Good	Good
Land Use	Good	Fair	Good
Driving Distance/Road Access	Good Palmer - 33 miles Wasilla - 20 miles Anchorage - 27* miles	Good Palmer - 28 miles Wasilla - 15 miles Anchorage - 29* miles	Poor Palmer - 37 miles Wasilla - 24 miles Anchorage - 22* miles
Utilities	Fair	Fair	Poor
Environmental Impacts	Few	Some	Many
Public Support	Minimal	Some	More
Conceptual Layout RW Length	Water - 4,000' Land 5,000'	Water - 4,000' Land - 6,000'	Water - 6,000' Land - 6,000'
Estimated Cost: Short-term/Long-term	$27M/$26M	$28M/$55M	$37M/$38M

The study also found that there may be a need in the future for an additional airport in the northern portion of the MSB. Ten potential airport sites were evaluated but a preferred site was not identified. Airport sites in the northern portion of the MSB are not considered in the Phase II Report.

3.0 PHASE II STUDY

3.1 Refined Seaplane Base Site Selection

3.1.1 Proposed Initial Facility Requirements

An approximation of the size and shape of the SPB was developed as an aid for the initial screening of potential sites. It was determined that to facilitate seasonal landing gear change overs between floats, skis, and wheels, the facility should include both a waterlane and a gravel runway. To safely accommodate initial air traffic demand and comply with minimum Federal Aviation Administration (FAA) design standards, the waterlane and gravel runway should be approximately 2,500 feet by 200 feet and 3,200 feet by 60 feet respectively.

3.1.2 Proposed Initial Selection Criteria

Based on discussions with airport advisory commissions, the MSB Aviation Advisory Board (AAB), and the public, the project team refined the list of siting criteria used in the Phase I study to re-evaluate potential airport sites. These factors are those which will have the greatest bearing to determine the feasibility of each potential site. Additional factors such as cost will be considered after the initial screening process is complete and a few sites are selected for a more detailed study. The criteria include:

Airspace

A future seaplane facility must have airspace that is compatible with the many other public and private airports in the MSB. The airspace should be free of existing conflicts while also having the potential for future expansion and more demanding instrument approaches. Factors that might affect airspace compatibility at locations in the MSB include:

- Anchorage Class C and Part 93 airspace
- Existing patterns and approaches at publicly owned airports in the MSB
- Future precision approach at Wasilla Airport
- Existing patterns for private airports
- Training routes used by the military

Winds

The prevailing wind at a potential airport site must be identified to determine the optimal alignment of the water lane or runway. Across the MSB, wind direction is affected by differences in topography. Along the coastline from the southern end of the MSB up and to the east end of the MSB the winds tend to favor the Northeast to Southwest direction. In the central and northern areas of the MSB, the winds favor a North/South orientation.

Topography

In addition to affecting wind direction, the degree to which an airport site is level and well-drained is important in determining the cost of initial construction and on-going maintenance. To

ensure safety, airspace in the approaches to the waterlane and runway must also be free of penetrating terrain and vegetation (i.e., trees).

Wetlands

The State of Alaska and the MSB have taken great care to document and preserve wetlands within the MSB. The evaluation of potential sites emphasized avoidance whenever possible and minimization whenever wetlands could not be avoided.

Land Ownership

The ideal airport site would be one that is already publically-owned or requires the acquisition of relatively few parcels from few owners. Acquisitions from few owners are often less impactive to the community and can usually be accomplished quicker. Sites with predominantly MSB owned land is preferred.

Land Use

Residential and certain institutional land uses are particularly sensitive to the noise and traffic that can be generated at or near airports. A new airport site will need to be located and designed to minimize conflicts with the surrounding land use.

Driving Distance

The airport should be located where driving distance for the primary users is minimized. Users will travel to the facility from Anchorage, Palmer, and Wasilla. Ideally the preferred site will be located centrally to the three cities. A Knik Arm Crossing may be built in the future. Driving distances with the Crossing will be identified as well, but will not carry any weight in the selection of a preferred site.

Utilities

The availability of electricity is a must for a commercial service seaplane. Utilities such as water, gas, heat oil, septic, fiber (internet) and phone lines are not a priority in the initial stages of developing an airport site and can follow at a later date.

Environmental Impacts

Potential environmental impacts involve a wide range of considerations including, but not limited to, wildlife, water quality, tree removals, recreational areas, and noise.

Public Support

Finding a site that is compatible with the needs and desires of local communities will be critical to the success of a future SPB.

Size of Site Meets Ultimate Requirements

Each site will be evaluated to determine whether it can accommodate and initial construction, as well as provide for future growth.

3.1.2.1 Initial Screening

A new list of potential SPB sites was compiled for evaluation in Phase II. This list consisted of the three preferred sites identified in Phase I (Goose Bay, Big Lake, and Sevenmile Lake) and five new sites identified for evaluation in Phase II (Flat Horn Lake, Muleshoe Lake, Section 9 Gravel Pit, Section 6 Gravel Pit, and Cow Lake). Two sites dropped during the Phase I evaluation were also added for reconsideration: Wasilla Airport, because a SPB was considered during the development of the Airports Master Plan, and Papoose Lake, because of its central location and physical attributes.

These sites were evaluated using the criteria identified in Section 3.1.2. The results of this evaluation are shown in Table 3.1-1.

These results were presented to the MSB AAB and discussed with the board and MSB staff. Additional pros and cons for the sites identified by the AAB and MSB staff are shown in Table 3.1-2.

Table 3.1-1: SPB Sites Evaluated in Phase II

	1 **Goose Bay Airport**	2 **Big Lake Airport**	3 **Sevenmile Lake**	4 **Flat Horn Lake**	5 **Muleshoe Lake**	6 **Wasilla Airport**	7 **Papoose Lakes**	8 **Section 9 Gravel Pit**	9 **Section 6 Gravel Pit**	10 **Cow Lake**
Airspace	Fair	Good	Good	Good	Fair	Good	Fair	Fair	Fair	Good
Winds (Alignment)	Poor	Fair	Good	Good	Fair	Fair	Fair	Good	Fair	Good
Topography	Fair	Good	Fair	Good	Fair	Fair	Good	Poor	Fair	Good
Wetlands (Few, Some, Many)	Some	Some	Many	Some	Many	Many	Some	Some	Some	Some
Land Ownership	Fair	Fair	Good	Fair	Fair	Good	Poor	Good/Fair	Fair/Poor	Good
Land Use	Fair	Poor	Good	Fair	Good/Fair	Fair	Poor	Good	Good	Fair
Driving Distance/Road Access	Good	Good	Poor	Poor	Fair	Good	Fair	Fair	Good/Fair	Poor
	Palmer - 33 miles Wasilla - 20 miles Anchorage - 27 miles*	Palmer - 28 miles Wasilla - 15 miles Anchorage - 29 miles*	Palmer - 37 miles Wasilla - 24 miles Anchorage - 22 miles*	Palmer - 47 miles Wasilla - 36 miles Anchorage - 31 miles*				Palmer - 42 miles Wasilla - 26 miles Anchorage - 20 miles*		Palmer - 44 miles Wasilla - 33 miles Anchorage - 28 miles*
Utilities	Fair	Good	Fair/Poor	Poor	Poor	Good	Fair	Fair	Fair	Poor
Environmental Impacts	Some	Some	Many	Some	Many	Many	Some/Many	Few	Some	Some
Public Support	-	-	-	-	-	-	-	-	-	-
Size of Site Meets Minimal Requirements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size of Site Meets Ultimate Requirements	No	No	Yes	Yes	-	Yes	-	No	No	Yes

Table 3.1-2: Comparison of Phase II SPB Sites – MSB and AAB Comments

Top 10 Airports

Site	Pros	Cons
Goose Bay Airport	- Existing gravel runway - MSB owned land nearby - Close to Anchorage - Off main road system	- Game refuge nearby - Potential lack of water availability - Crosswind airfield - Restricted airspace
Big Lake Airport (New Pond)	- Existing runway - Central location - Established commercial activity - Community/town center nearby	- Compatible land issues in airspace - Re-alignment of existing runway will be needed - Dredging of pond - Potential parkway connector through optimal development space
Sevenmile Lake	- MSB owned land nearby - Existing lakes could be connected - Optimal location - Good airspace available - Location centrally located	- Current status in wetlands bank - No immediate road connectivity - Historic Iditarod Trail runs through lake
Flat Horn Lake	- Large lake with good orientation - MSB land around north section of lake - Available airspace - Off planned main road system	- No public development nearby - Currently a remote location - Concerns of water depth - Distance from cities is poor - Land is parceled out to private owners
Muleshoe Lake	- Relatively undeveloped land - Good orientation for winds	- Poor road access available - Potential VOR conflicts - Wetlands - Existing airspace concerns
Wasilla Airport	- Little development costs needed - Existing runway and development areas	- Lack of water availability - Would be channel not lake - Would be low Airport priority
West Papoose Lake	- Near public road access and infrastructure - Good central location	- Lack of MSB land around lake - Existing residential land and recreational activity
Section 9 Gravel Pit	- Good location - Good public road access	- Dredging of a channel needed - Topography could be challenging - Part 77 airspace concerns - Water availability
Section 6 Gravel Pit	- MSB owned land around area - Could meet ultimate needs	- Dredging of a channel needed - Dense residential development nearby - Public road re-alignment needed for development
Cow Lake	- MSB and CIRI land around lake - Large lake to meet ultimate needs - Clear airspace	- Driving distance is far from cities - No adequate access to lake - Poor local weather conditions - Costly development

3.1.2.2 Top 3 Sites

Following consideration of the evaluation criteria and comments received from MSB staff and the AAB, the Phase II list of potential sites was narrowed to three sites: Cow Lake, Sevenmile Lake, and the Section 9 Gravel Pit site as shown in Figure 3.1-1. These sites required the acquisition of little or no privately-owned property; had few nearby airspace conflicts, and could accommodate growth forecasted for a 20-year planning period.

Figure 3.1-1: Top 3 Sites

3.1.2.3 Online Survey of Aircraft Owners and Operators

An on-line survey was made available in late 2015 for aircraft owners and operators, and aviation businesses residing in the MSB, or otherwise using aviation facilities in the MSB (see Appendix A). The purpose of the survey was to get an indication of unmet demand for aircraft parking within the MSB. Notice of the availability of the survey was sent directly to the Alaska membership of:

- Aircraft Owners and Pilots Association;
- Alaska Airman's Association;
- Alaska Air Carriers Association;
- Alaska Seaplane Pilots Association; and
- The MSB AAB.

In addition, the survey was mentioned and links provided in the following public venues and other communications:

- Mat-Su Transportation Fair (10/22/15);
- Article in the Frontiersman (10/11/15);
- Article in the Alaska Dispatch (11/12/15);
- Article on Channel 11 News (11/21/15);
- Channel 2 News Interview (12/07/15);
- MSB Public Service Announcement on various radio stations;
- Front page of MSB website;
- MSB Facebook page; and
- MSB Twitter.

Responses to the survey were received from 237 parties. Because of the small sample size compared to the population, the results of this survey are not considered statistically significant;

however, they do provide some interesting information worth reviewing here. The following are selected results from the survey.

- 231 responded that they owned or operated aircraft in the MSB - they owned 252 aircraft total. Most aircraft were single engine, and a few multi-engine aircraft. A few helicopters and ultralight or experimental aircraft were also reported.
- 151 of those aircraft (about 60 percent) are on floats for at least part of the year. Assuming that seaplane operators responded to the survey in a higher percentage than wheeled aircraft owners because of interest in establishing a new public-use SPB, this percentage is likely high.
- 35 respondents owned a business as follows:
  - 10 Aircraft Maintenance
  - 8 Passenger Service
  - 2 Fuel Sales
  - 19 other types of business
- 58 respondents (32.2 percent) said they will obtain additional aircraft in the next 5 years. At least 55.8 percent of those aircraft will be on floats for at least part of the year.
- 67 of 179 respondents (37.4 percent) operate a transient aircraft within the MSB.
- 67.2 percent of transient users would like a float dock, and 59.6 percent would like tie-downs for transient aircraft at the new facility.
- 91.9 percent of transient users would like fuel, 40.3 percent would like maintenance services, 29.0 percent would like a terminal building, and 24.2 percent would like other amenities for transient aircraft, such as navigational aids and weather reporting, and car rentals and parking for cars, and restaurants at a new facility.

Tables 3.1-3 and 3.1-4 show where all survey respondents lived, and where they based their aircraft. Because the Anchorage and MSB areas have connecting road systems, some pilots base their aircraft in areas accessed by road away from where they live for various reasons such as availability of parking, cost of parking, and aviation services available.

Table 3.1-3: Where Do You Live?
Aircraft Owners and Operators Willing to Base an Aircraft at Sevenmile Lake

Residence	Number	Percent
Out of State	2	5.1%
Anchorage Bowl	17	43.6%
Eagle River/Chugiak	6	15.4%
Meadow Lakes	3	7.7%
Palmer	2	5.1%
Big Lake/Wasilla	2	5.1%
Wasilla	2	5.1%
Skwentna	1	2.6%
Soldotna	2	5.1%
Talkeetna	1	2.6%
Fairbanks	1	2.6%
TOTAL RESPONSES	**39**	**100.0%**

Source: Online survey of aircraft owners and operators using the MSB, November 2015.

Table 3.1-4 shows the same aircraft owners/operators as are presented in Table 3.1-3, but indicates where these aircraft are based. Table 3.1-4 counts number of aircraft, not number of respondents, so the totals in this table are higher than in Table 3.1-3.

Table 3.1-4: Where is Your Aircraft Currently Based?
Aircraft Owners and Operators Willing to Base an Aircraft at Sevenmile Lake

Where Based Now	Number	Percent
Lake Hood	9	19.1%
Other Private MSB Lake	5	10.6%
Wasilla	4	8.5%
ANC	4	8.5%
Birchwood	4	8.5%
Palmer	3	6.4%
Fire Lake	3	6.4%
Soldotna	3	6.4%
Talkeetna	2	4.3%
Big Lake	2	4.3%
Wolf Lake	2	4.3%
Out of State	2	4.3%
Lake Louise	1	2.1%
Private MSB Strip	1	2.1%
Merrill Field	1	2.1%
Sand Lake - Anchorage	1	2.1%
TOTAL RESPONSES	**47**	**100.0%**

Source: On-line survey of aircraft owners and operators using the MSB, November 2015.

The following is information about the 39 survey respondents who said they would be willing to move to a facility at Sevenmile Lake.

- 39 of 121 owner/operators who have a total of 50 aircraft would consider moving. The aircraft tend to be single engine Pipers, Cessnas, and Maules, with 1 Piper twin engine, but no helicopters or ultralights.
- 5 businesses would consider moving, including 1 fuel seller, 2 aircraft mechanics, 1 flight school, and 1 bed & breakfast with flightseeing.

We also asked what types of aircraft parking the respondents currently have. The majority of respondents and the majority of those willing to move to Sevenmile Lake would be looking for a tie-down or seaplane slip that they can rent or lease.

Table 3.1-5: Current Aircraft Parking
Aircraft Owners and Operators Willing to Move Their Aircraft to Sevenmile Lake

	All Respondents	Respondents Willing to Move
Lease or rent tie-down or slip	101	16
Lease or rent hangar or dock	23	1
Own land with tie-down or slip	44	8
Own Hangar or dock	58	7
No Answer	11	7
TOTAL RESPONSES	**237**	**39**

Source: On-line survey of aircraft owners and operators using the MSB, November 2015.

Sevenmile Lake

- 39 - Would consider moving to Site 1
- 23 - Would consider relocating business to Site 1
- 16 - Would open a new business at Site 1

Cow Lake

- 24 - Would consider moving to Site 2
- 12 - Would consider relocating business to Site 2
- 8 - Would open a new business at Site 2

Section 9 Gravel Pit

- 23 - Would consider moving to Site 3
- 15 - Would consider relocating business to Site 3
- 11 - Would open a new business at Site 3

3.2 Final Site – Detailed Evaluation

This portion of the report evaluates the Sevenmile Lake site in greater detail according to how it meets basic airport design standards, environmental requirements, property needs, and other considerations.

3.2.1 Design Standards

Table 3.2-1 summarizes design standards appropriate for the forecasted use of the facility.

Table 3.2-1: Preliminary SPB and Runway Facility Standards Summary

	Initial[1]	**Long-Term**[2]
Water Lane	**GA Seaplane Operations**	**Commercial Operations**
Airport Reference Code	**A-I**[3]	**A-II**
Waterlane Length	2,500'	5000'
Waterlane Width	100' (200' operating area)	500'
Minimum Sea Lane Depth (SES/MES)	3'/6'	10'
Waterlane Protection Zone Length	1000'	1000'
Waterlane Protection Zone Inner Width	250'	500
Waterlane Protection Zone Outer Width	450'	700'
Turning Basins	200'/200'	200'/200'

[1] Based on Previous FAA Design Advisory Circular

2 Based on 2013 FAA Design AC

3 Small Aircraft

Runway	Initial	Long-Term
Airport Reference Code	**A-I[1]**	**C-II**
Weather Minimums	**Not Lower than 1 mile**	**Non-Precision runway < 3/4 mile visibility**
Design Aircraft	Beech Bonanza Piper Seneca Beaver	Cessna Citation III, VI, VIII, X Gulfstream II, III, IV CRJ-200, 700
Runway Length	3,300' - Gravel	6,000' - Grooved Asphalt
Runway Width	60'	100'
Runway Shoulder Width	10'	10'
Runway Safety Area Width	120'	500'
Runway Safety Area Length Beyond RW End	240'	1000'
Obstacle Free Zone Width and Length	250'/200'	300'/200'
Runway Object Free Area Width	250'	800'
Runway Object Free Area Length Beyond RW End	240'	1,000'
Runway Protection Zone Length	1000'	2,500'
Runway Protection Zone Inner Width	250'	1,000'
Runway Protection Zone Outer Width	450'	1,750'
Runway Separation, Runway centerline to:		
Holding position	125'	250'
Parallel taxiway/taxilane centerline	150'	400'
Aircraft parking area	125'	500'
Building restriction line	370'[4]	745'[5]

GA = General Aviation

[4] The FAA no longer has fixed-distance standards for the BRL Location. The indicated setback distances are based on providing 7:1 Transitional slope and runway visibility zone and protected areas clearance over a 35-foot building situated at the same base elevations as the adjacent runway and can be adjusted in accordance with local conditions

[5] "…"

3.2.2 Existing Imagery and Topographic Mapping

Figure 3.2-1 shows the Sevenmile Lake Project Area. This figure, as well as many of the figures presented in this report, was prepared using LIDAR imagery acquired by the MSB in 2010.

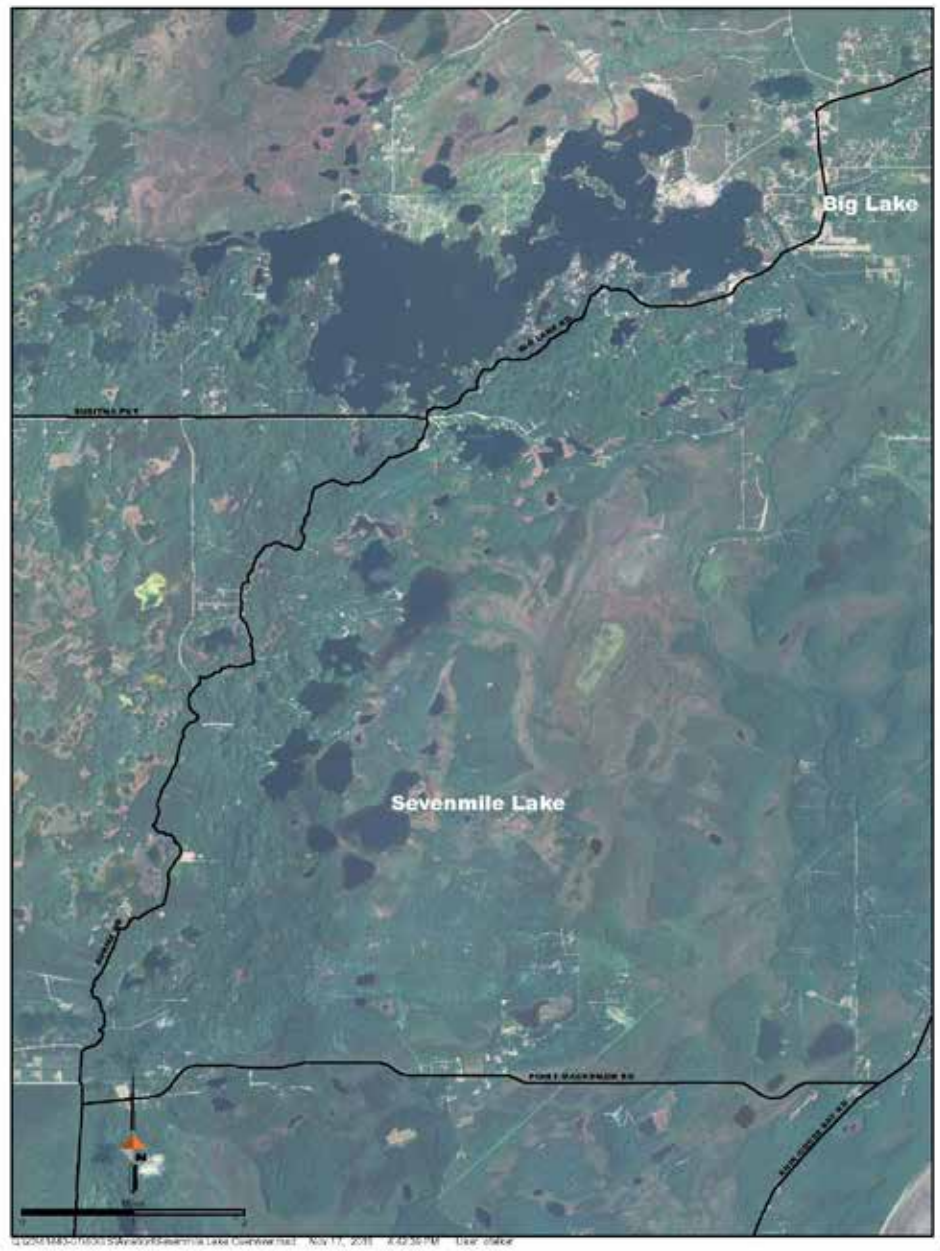


Figure 3.2-1: Sevenmile Lake Project Area

3.2.3 Environmental Overview

This environmental overview summarizes existing environmental conditions for key environmental resources within the project area and identifies key data gaps, such as studies or analyses, likely needed to support environmental documentation and permitting.

Air Quality

According to Alaska Administrative Code (AAC), 18 AAC 50.15, the Sevenmile Lake area in the MSB is designated a Class II area, meaning insufficient data exists to determine compliance with national standards for ambient air quality. Class II areas are allowed moderate pollution increases unless otherwise restricted by the State.

An air quality analysis would not typically be required, unless a substantial increase in air emissions is anticipated due to a change in fleet mix. An analysis may be needed to address temporary construction equipment emissions and fugitive dust during construction. Consultation with FAA during the project design and National Environmental Policy Act (NEPA) phase will determine whether Emissions Dispersion Modeling System is required for this project.

Noise

FAA regulations stipulate that a noise analysis is required if a facility meets or exceeds either 700 jet operations or 90,000 propeller operations annually. Projected air traffic levels at the Sevenmile Lake SPB are well below this criterion; therefore, a noise analysis is not required.

Seasonal residences exist in the project area. Once the construction activity is complete, noise associated with the airport is not expected to increase substantively from current noise levels in the project area.

Hazardous Material

A search of State of Alaska Department of Environmental Conservation's (DEC) Contaminated Sites databases reported no contaminated sites within the project area.

Biotic Resources

The Matanuska-Susitna Valley is home to a high degree of species richness. Large mammals such as caribou, moose, mountain goat, sheep, and brown and black bears are abundant, as are smaller mammals such as hare, spruce grouse, and ptarmigan. Waterfowl and other migratory birds also migrate through this area. Clearing and grubbing is not permitted within the migratory bird window of May 1 to July 15 in the project area, per the Migratory Bird Treaty Act except as permitted by federal, state, and local.

According to the United States Fish and Wildlife Service's (USFWS) on line *Alaska Bald Eagle Nest Atlas, no* bald eagle nests are known to occur in the project area, however, a survey may be needed to confirm this during the design and NEPA phase.

If active bald or golden eagle nests are found within the project area, a primary zone of a minimum 330 feet will be maintained as an undisturbed habitat buffer around nesting eagles. If topography or vegetation does not provide an adequate screen or separation, the buffer will be extended to 0.25 mile, or a sufficient distance to screen the nest from human activities. Within the secondary zone (between 330 and 660 feet), no obtrusive facilities or major habitat modifications shall occur. If nesting occurs in sparse stands of trees, treeless areas, or where activities will occur within line-of-site of the nest, this buffer shall extend up to 0.5 mile. No blasting, logging, or other noisy, disturbing activities within the primary or secondary zones should occur during the nesting period (February 1 to August 31).

Wetlands

A review of the USFWS National Wetland Inventory website (www.wetlandsfws.er.usgs.gov/wtlnds/launch.html) indicated that wetlands are present in the project area. Wetland delineation will be needed to clearly identify wetland boundaries and to assess the function and value of both wetlands and Waters of the US. A wetland (Section 404) Permit from the United States Army Corps of Engineers and Water Quality Certification (Section 401) from DEC may need to be obtained prior to construction.

Anadromous Fish Streams/Essential Fish Habitat

A review of the Alaska Department of Fish and Game (ADF&G) *Atlas to the Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* (www.gis.sf.adfg.state.ak.us) identified no anadromous lakes or streams within the project area. However, resident fish are likely present in Sevenmile Lake. There is no essential fish habitat within the project area. A Fish Habitat (Title 16) Permit from the ADF&G may need to be obtained prior to construction.

Threatened and Endangered Species

There are no federally listed or candidate species present in the project area. Furthermore, there are no designated or proposed critical habitats in the project area. Formal Section 7 consultation is not necessary for this project.

Historic and Archeological

The proposed project is located within the Iditarod Dog Sledding Historic District (IDSHD). The IDSHD is a historic vernacular landscape that illustrates the historic significance of dog sledding in the area. The IDSHD consists of trails, travel routes, kennels, clubs, roadhouses, and natural features that demonstrate use of natural systems and features, spatial organization, circulation, buildings/structures, and cultural traditions associated with dog sledding. The trails of the IDSHD historic and current dog sledding trail system stretch between the Knik Arm coastline and the Susitna River. These trails are now used by dog mushers as well as multiple other users, including all-terrain vehicles, snow machines, horseback riders, hikers, and skiers.

In addition to the Historic District, a prehistoric site was recorded on the banks of Sevenmile Lake. Consultation with the State Historic Preservation Office (SHPO) and local Tribes will be required for this site. Given the likelihood of adverse impacts to the site, it will need to be tested and assessed for eligibility for the National Register of Historic Places, and mitigation measures followed.

The Matanuska-Susitna Regional Aviation System Plan will need to initiate contact with the SHPO, other agencies to assess potential impacts to the IDSHD and develop mitigation measures.

Local Land Use Plans, Local Parks

There are no local land use plans for Sevenmile Lake and its vicinity. The project area is located on property owned by the MSB. No property acquisition is expected.

During construction there may be a temporary increase of solid waste within the community. The MSB would need to determine whether there is capacity to allow minor solid waste generated through construction (cardboard, shipping pallets, etc.) to be burned and disposed of at the landfill.

Protected Land Status

The project area includes no state or federal wildlife refuges, critical habitat areas, wild and scenic rivers or sanctuaries. Additionally, no farmland (prime or unique, state or local) exists within the project area.

Floodplains and Water Quality

A review of Alaska's Final 2010 Integrated Water Quality Monitoring and Assessment Report (DEC, 2010) indicated Sevenmile Lake is not listed as impaired. All streams outside the project area eventually drain into Knik Arm. The closest reservoir is more than 20 miles away from Sevenmile Lake. A search of the National Flood Insurance Program Floodplain Maps revealed that Sevenmile Lake is not located within the 100-year floodplain. For any water withdrawals, a Temporary Water Use Permit from the State of Alaska Department of Natural Resources may need to be obtained prior to construction.

3.2.4 Property Ownership and Surrounding Land Use Types

With the exception of approximately three acres of private property on the west side of Sevenmile Lake, all upland property in the immediate vicinity of the project is undeveloped land owned by the MSB. Sevenmile Lake itself may be owned by the State of Alaska as land

underlying navigable waters. There are no local land use plans for Sevenmile Lake and its vicinity. The airport site is within the area that the Pioneer Mitigation Bank is licensed to serve but the project site is not under a protected title interest (i.e., a conservation easement). A subdivision in private ownership is located about 3/4 mile NNW of Sevenmile Lake and the MSB's Sevenmile Ridge Interim Materials District is located about one mile to the WSW as shown in Figure 3.2-2.

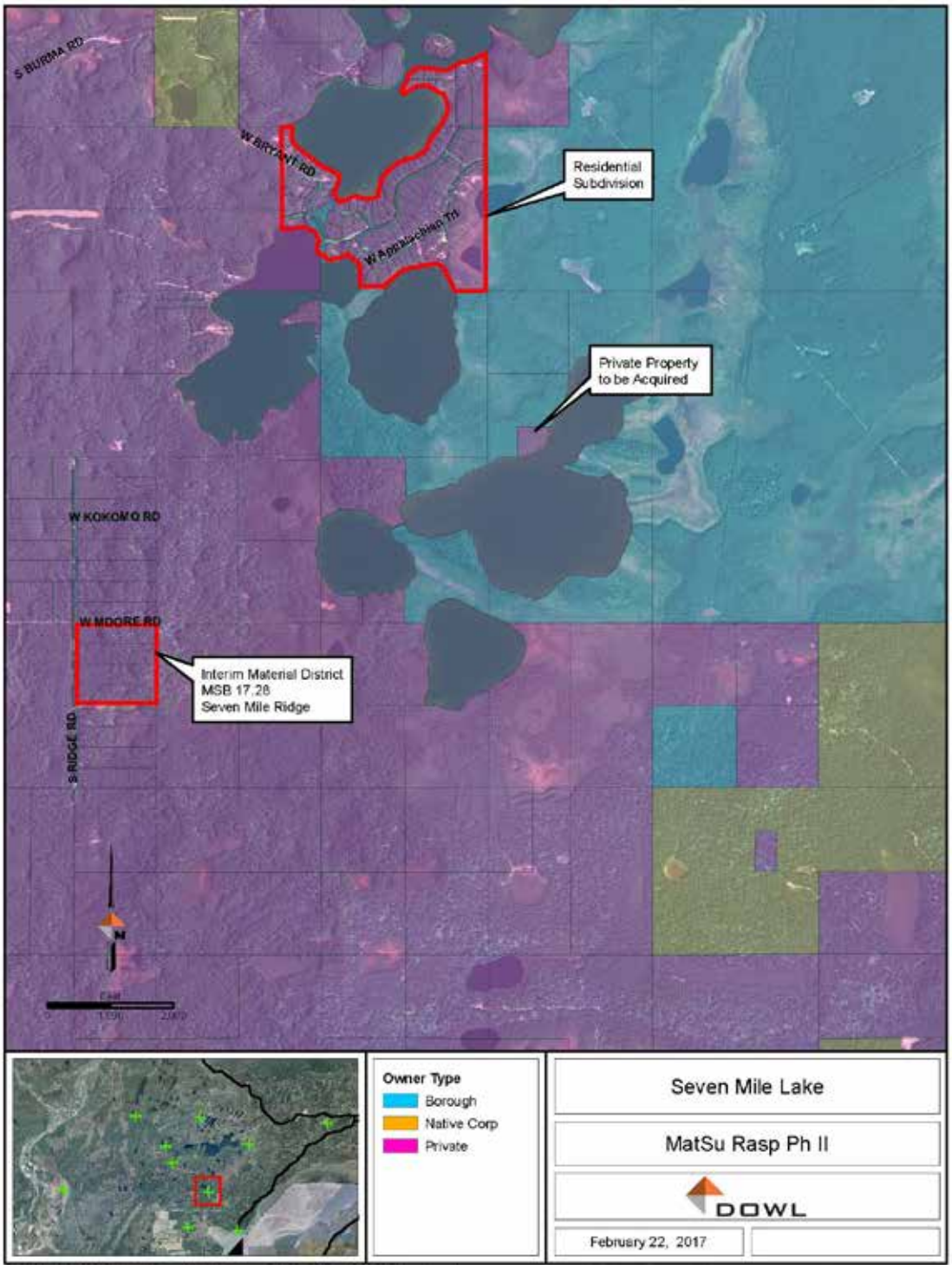


Figure 3.2-2: Sevenmile Lake

3.2.5 Airspace, Navigational Aids and Potential for Instrument Approaches

The Phase I report recommended that the future facility be able to facilitate an instrument landing approach as part of long-term planned development. An instrument approach would allow aircraft to take off and land at the airport when weather conditions are not suitable for visual flying.

The FAA prepared a preliminary evaluation of the feasibility of an instrument approach using the orientation and layout of the proposed airport together with wind data and terrain mapping, The FAA determined that area navigation (RNAV) (GPS type) approach was feasible. The approach would be clear of any known obstacles and registered airspaces in the immediate vicinity. The protected airspace for the approach is shown in Figure 3.2-3. Pilots flying this instrument approach would need special certified equipment in their plane. The airport would need a certified weather station and runway approach lighting that would match the weather minimums that are determined for the instrument approach.

The FAA determined that there would be minimal impact to local airspace, including the instrument approach for Big Lake Airport. Further analysis by FAA Air Traffic Control Specialists would be required to determine the extent of any impact it might have on air traffic for the Joint Base Elmendorf Richardson and the Ted Stevens Anchorage International Airport (ANC).

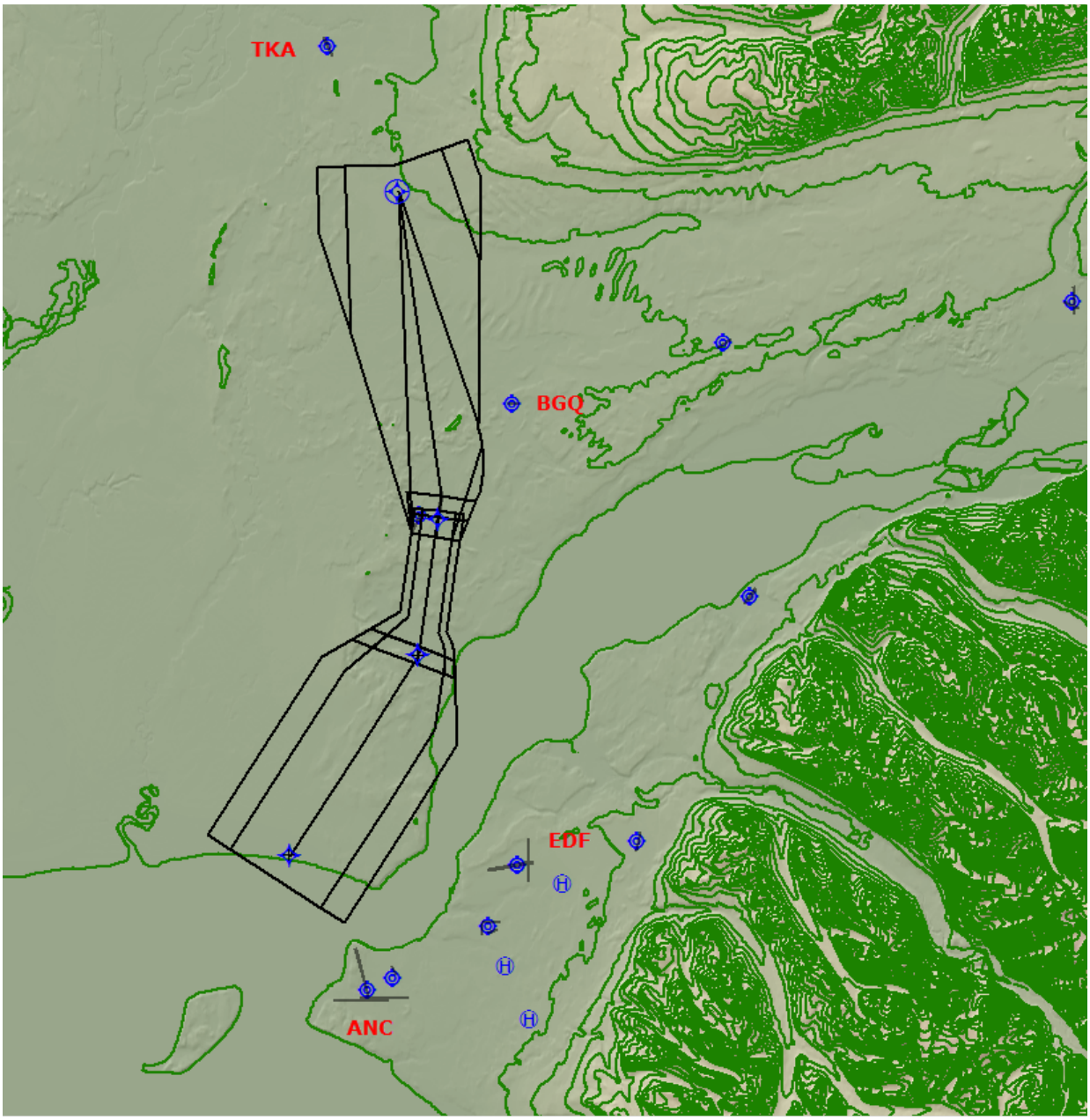


Figure 3.2-3: Sevenmile Lake – Potential Instrument Approach Protected Airspace

3.2.6 Wind Data and Runway Orientation

An important factor influencing runway orientation and the number of necessary runways at an airport is wind. Ideally, runways should be aligned with the prevailing wind. Wind conditions affect all airplanes to varying degrees. Generally, the smaller the airplane, the more it is affected by wind – particularly crosswinds. Runway wind coverage is calculated as the percent of time that a runway orientation has favorable winds and acceptable crosswind velocities. The FAA identifies the desirable wind coverage for an airport as 95 percent. If the wind coverage for a

particular runway is less than 95 percent, a crosswind runway is recommended. In the case of the proposed Sevenmile Lake SPB, at least two years of on-site wind data collection would be required by the FAA before a definitive alignment determination would be possible. However, a gravel runway aligned in a generally north-south direction should provide the ability to land or takeoff 95 percent of the time in visual flight rules (VFR) conditions. Given the configuration of the lake, it should be possible to align the waterlane to provide 96 percent wind coverage in VFR conditions. Both of these values meet or exceed the FAA threshold wind coverage criteria for the safe operation of small aircraft. Accordingly, a crosswind waterlane and crosswind runway should not be needed.

3.2.7 Roads Utilities

Driving Distance and Road Access

The proposed airport site is located roughly 37 miles away from Palmer, 24 miles from Wasilla, and 65 miles from Anchorage (assuming the Knik Arm Crossing is not built). Currently there is no road access to the site; however there are trails that can access the lake year round (including part of the Iditarod trail, towards the south end of the lake). Point MacKenzie Road is currently the nearest paved road located roughly two miles south of the site. Burma Road is located west of the site and provides access to Stephan Lake and the surrounding neighborhood.

Due to the abundance of turns, the current condition of the road, and the number of private drives along Burma Road, it was determined that the access road into the site should intersect Point MacKenzie Road instead of Burma. The proposed access road will follow a section line running north/south and will impact minimal property owners as most of the surrounding land is undeveloped. The gravel road will be 1.9 miles from the intersection of Point MacKenzie to the site, and will be 24 feet wide.

Utilities

Currently, there are no utilities located on the proposed site. Electricity and phone/internet can be accessed from the Stephan lake subdivision located roughly one mile northwest of the site. Phone and internet may not be needed as nearby cell towers could allow for cell phone usage and wireless internet. A gas transmission line runs parallel to Point Mackenzie Road; however the

nearest tie-in point to the line is at the intersection of Point Mackenzie Road and Burma Road. A well and septic system will also need to be provided since municipal water and sewer service is unavailable.

3.2.8 Site Geology/Soils/Hydrology

Geology

Sevenmile Lake is in the Susitna Lowland, a part of the Cook Inlet-Susitna Lowland physiographic subprovince that borders Cook Inlet. The present topography around the lake is the product of major glacial advances that invaded the area, as well as the effect of lacustrine (lake), alluvial (river/creek), and eolian (wind-blown) deposits consequent with or subsequent to the advances (Wahrhaftig 1965).

The mapped surficial geology around Sevenmile Lake includes several deposits types (Reger 1981). The north and western areas consist primarily of glacial deposits and till consisting of dense gravelly sand and sandy gravel with silt and boulders. The glacial deposits are quite variable in thickness, but are generally 10 to more than 20 feet thick. The eastern and southern areas of the lake edge are primarily muskeg and peat with intermittent outcrops of till represented by low hills before transitioning to higher hills consisting of till and glacial deposits. The peat deposits are variable but typically range from 3 to 10 feet with deeper areas up to 20 feet thick. Additionally, an eolian sand deposit is mapped on the southeast side of the lake and typically ranges 3 to 20 feet in thickness. Scattered throughout the glacial and eolian deposits are occasional pockets of peat in the low areas.

Site Hydrology

Sevenmile Lake is a paternoster lake and is connected to smaller unnamed lakes by wetlands and streams that drains to Goose Creek, and eventually enters Cook Inlet. Sevenmile Lake is most likely groundwater-fed. There are no records of water level fluctuations within this lake. Sevenmile Lake and the surrounding area have not been mapped as a floodplain (FEMA.gov, 2016).

There are few climatological stations within the vicinity of Sevenmile Lake and Point Mackenzie Station is located six miles away has been keeping a record since 1980 (Western Regional Climate Center, 2016). The average total precipitation is 19 inches and the average total snowfall is 61 inches for the Point Mackenzie area. August is the rainiest month and December is the snowiest month. Ice forms on Sevenmile Lake in late October and melts by late May. The Matanuska Agricultural Experiment Station located 30 miles away estimated 15 inches for the mean annual evapotranspiration.

3.3 Airport Concept Plan

3.3.1 Forecasts (5/10/20 years)

3.3.1.1 Forecast of Aviation Activity at Sevenmile Lake SPB

Methods

The Sevenmile Lake air traffic forecast is consistent with the Federal Aviation Administration Advisory Circular 150/5070-6B, and July 2001 guidance paper entitled "Forecasting Aviation Activity by Airport." The forecast was developed using historic air traffic data and prior forecasts, as well as interviews with air carriers, aviation support businesses, private pilots, airport management, and other parties knowledgeable of aviation activities within the MSB. In addition, demographic and economic trends for the MSB and surrounding areas were examined through interviews and published sources, and used to develop this forecast. A list of the sources used to develop this report is presented at the end of this section. Sources interviewed for this report often provided information based on their expertise and judgment. Judgment of the forecaster was also used to develop the air traffic forecast. Forecasts for low and high growth scenarios are presented in this report.

3.3.1.2 Socioeconomic Profile of Matanuska Susitna Borough

The MSB incorporates 24,683 square miles in Southcentral Alaska, north of the Municipality of Anchorage, south of the Denali Borough, and follows the Glenn Highway east to Lake Louise, nearly reaching the Valdez-Cordova Census Area. The area includes the Alaska, Chugach, and Talkeetna mountain ranges, valleys of the Matanuska and Susitna watersheds, and the major drainages of the Susitna, Matanuska, Knik, and Talkeetna Rivers. Incorporated in 1964 as a

Second Class Borough, the MSB's 2015 estimated population was 100,178. At this time, only three communities in the MSB are incorporated – Houston, Palmer and Wasilla. In addition, 24 community councils are currently recognized by the MSB.

Most communities within the MSB are accessible by road to Anchorage in the south and Fairbanks in the north. In addition, the Alaska Railroad route that links Anchorage and Fairbanks crosses through the MSB. Of the publicly-operated airports in the MSB, eight are state operated, and two are operated by the cities of Palmer and Wasilla. According to the 2008 Regional Aviation System Plan, over 200 private airstrips and seaplane facilities are located in the MSB.

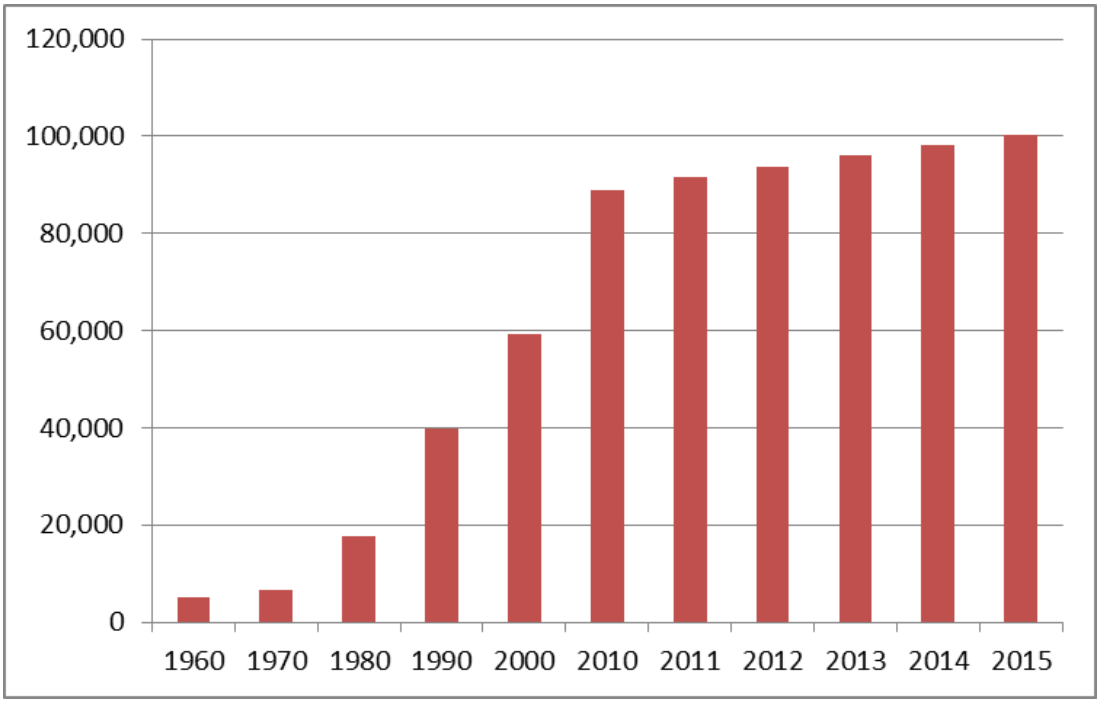
The MSB first attracted outside laborers and workers in the 1920s to engage in coal and gold mining, and the construction of the Alaska Railroad. Homesteaders and farmers also came to the area in the 1930s as a part of President Franklin D. Roosevelt's "New Deal" resettlement plan, boosting the region's population. Expanded farming, connection to Anchorage and access to Alaska's road system fueled further expansion. As the economy of the state and especially of Anchorage has grown, so has the population of the MSB, which is only about an hour's drive from Alaska's largest city. Because of an abundance of available land allowing for diverse housing options and lower housing prices, the MSB is experiencing continued population growth. This growth of population, in turn, has attracted retail and other businesses to the MSB. The increased availability of goods and services has lowered costs to live in the MSB and made the area more attractive to new residents.

While there is still some mining and agriculture activity in the MSB, most of the economy is based on supporting the resident population (February 2013 Trends Article, and 2015 Neal Fried interview). Recent construction of large retail outlets has greatly increased employment in the retail trade industry. According to the Alaska Department of Labor and Workforce Development (April 2015 Trends Article), only about 55 percent of the workers living in the MSB also worked in the MSB in 2013. About 30 percent of MSB residents working were employed in Anchorage, and 15 percent worked in other areas of the state.

Population

According to the Alaska Department of Labor and Workforce Development estimates in 2016, the 2015 population of the MSB was 100,178, about 84 percent of which was white. In 2014, the median age of MSB residents was 35.1 years, slightly older than the statewide average of 34.4 years. Also in 2014, 30,227 residents (about 31 percent) were under 20 years old. Nearly 10 percent of MSB residents (9,621) were aged 65 and older in 2014, and 51.6 percent of MSB residents were male. The average household size for MSB residents in 2010 was 2.75 persons.

The MSB has one of the fastest growing populations in the state, with an average annual growth rate of 5.5 percent between 1960 and 2015. That growth has slowed in recent years, with an average annual growth rate of 2.4 percent between 2010 and 2015. Figure 3.3-1 presents population change in the MSB from 1960 to 2015.



Source: Alaska Department of Labor and Workforce Development, 2015.

Figure 3.3-1: MSB Population Growth, 1960 to 2015

The MSB contains 28 officially-recognized communities, three of which are incorporated (*Alaska Taxable 2015*). Table 3.3-1 presents population estimates by Census Designated Place

(CDP) in the MSB for 2000 to 2015 developed by the Alaska State Demographer. A CDP can contain one or more communities.

Table 3.3-1: MSB Population by Place, 2000 to 2015

Place	April 2000	April 2010	July 2012	July 2013	July 2014	July 2015	Annual Growth 2000-2015	Annual Growth 2010-2015
Matanuska-Susitna Borough	59,322	88,995	93,740	95,994	98,377	100,178	3.6%	2.4%
Big Lake CDP	2,435	3,350	3,486	3,585	3,581	3,629	2.7%	1.6%
Buffalo Soapstone CDP	761	855	864	869	893	907	1.2%	1.2%
Butte CDP	2,561	3,246	3,407	3,409	3,432	3,498	2.1%	1.5%
Chase CDP	43	34	35	42	41	37	-1.0%	1.7%
Chickaloon CDP	213	272	243	244	241	252	1.1%	-1.5%
Eureka Roadhouse CDP	28	29	26	19	38	42	2.7%	7.7%
Farm Loop CDP	975	1,028	1,040	1,103	1,101	1,144	1.1%	2.2%
Fishhook CDP	2,565	4,679	5,026	5,084	5,387	5,500	5.2%	3.3%
Gateway CDP	3,802	5,552	5,934	6,192	6,558	6,903	4.1%	4.5%
Glacier View CDP	238	234	234	235	244	243	0.1%	0.8%
Houston city	1,202	1,912	2,004	2,037	1,967	2,096	3.8%	1.9%
Knik River CDP	582	744	743	744	760	732	1.5%	-0.3%
Knik-Fairview CDP	6,985	14,923	16,110	16,304	17,134	17,617	6.4%	3.4%
Lake Louise CDP	88	46	50	53	47	38	-5.4%	-3.7%
Lakes CDP	6,604	8,364	8,715	8,778	8,974	9,000	2.1%	1.5%
Lazy Mountain CDP	1,160	1,479	1,555	1,524	1,571	1,578	2.1%	1.3%
Meadow Lakes CDP	4,720	7,570	8,184	8,257	8,368	8,381	3.9%	2.1%
Palmer city	4,705	5,937	6,112	6,079	6,061	6,135	1.8%	0.7%
Petersville CDP	16	4	5	3	3	2	-12.9%	-12.9%
Point MacKenzie CDP	226	529	573	1,533	2,019	1,920	15.3%	29.4%
Skwentna CDP	111	37	35	33	33	36	-7.2%	-0.5%
Susitna CDP	37	18	16	13	17	16	-5.4%	-2.3%
Susitna North CDP	985	1,260	1,374	1,380	1,397	1,427	2.5%	2.5%
Sutton-Alpine CDP	1,080	1,447	1,425	1,427	1,406	1,419	1.8%	-0.4%
Talkeetna CDP	731	876	891	859	839	859	1.1%	-0.4%
Tanaina CDP	5,056	8,197	8,601	8,859	8,893	9,073	4.0%	2.1%
Trapper Creek CDP	423	481	474	474	474	475	0.8%	-0.3%
Wasilla City	5,504	7,831	8,190	8,355	8,332	8,468	2.9%	1.6%
Willow CDP	1,657	2,102	2,151	2,116	2,038	2,000	1.3%	-1.0%
Balance	3,829	5,959	6,237	6,384	6,528	6,751	3.9%	2.5%

Source: Alaska Department of Labor and Workforce Development, 2015.
CDP = Census Designated Place. A CDP can contain one or more communities.

Between 2000 and 2015, the fastest growing areas in the MSB were Point MacKenzie CDP (15.3 percent annual growth), Knik-Fairview CDP (6.4 percent annual growth), and Fishhook

CDP (5.2 percent annual growth). Growth in MSB school enrollment continues to rise despite declining school enrollment in many other areas of the state (February 2013 Trends Article).

Economic Activity

This section presents a general economic overview of the MSB. The air traffic forecast for the new seaplane facility presented later in this report is based mainly on established demand for the facility, determined through analysis of historic trends and results of online surveys and interviews with government agencies, industry leaders, aviation-related businesses, and other knowledgeable parties. Growth in specific economic sectors as reported below can be a catalyst for that demand. However, aircraft owner and operator survey results, although not statistically significant because of the small sample size, suggest that most of the demand for this new facility derives from recreational flying, and is not associated with any particular economic sector except the visitor industry.

The economy of the MSB is somewhat defined by the fact that the area is close to Anchorage (Wasilla is about 50 miles by road), yet has more available land for housing and lower housing prices. The greater availability and lower cost of housing in the MSB and its reasonable commuting distance to Anchorage is a major reason for the strong population growth in the MSB (February 2013 Trends Article, and 2015 Neal Fried interview). In 2014, 33 percent of all new housing units in the state were permitted in the MSB, even though the MSB has only 13 percent of the state's population (Alaska Department of Labor and Workforce Development, 2015). In 2014, the average housing purchase price in the MSB ($255,055) was 79 percent of the average purchase price in Anchorage ($322,512).

The annual per capita personal income for MSB residents in 2013 was $46,149, which is 92 percent of the statewide average ($50,150), but 103 percent of the national average ($44,765) in the same year (U.S. Bureau of Economic Analysis, 2015). The median household income for MSB residents in 2013 was $73,831, slightly higher than the statewide average of $71,583 (U.S. Bureau of Economic Analysis, 2015). In recent years as more retail outlets and health care and other services have been developed in the MSB, more of resident's disposable income remains in the MSB (February 2013 Trends Article, and 2015 Neal Fried interview).

Table 3.3-2 presents the number of businesses, average annual employment and earnings by industry in the MSB in 2015. The majority of the jobs are within the service producing industries, some of the largest industries being retail sales and health care. Government is also a major employer within the MSB. These support industries serve an existing resident population, and create limited revenue and business from outside the local areas. The industries with the highest average earnings are Local Government, Mining, Construction, and Manufacturing. Recreation and Tourism is also a strong economic sector in the MSB.

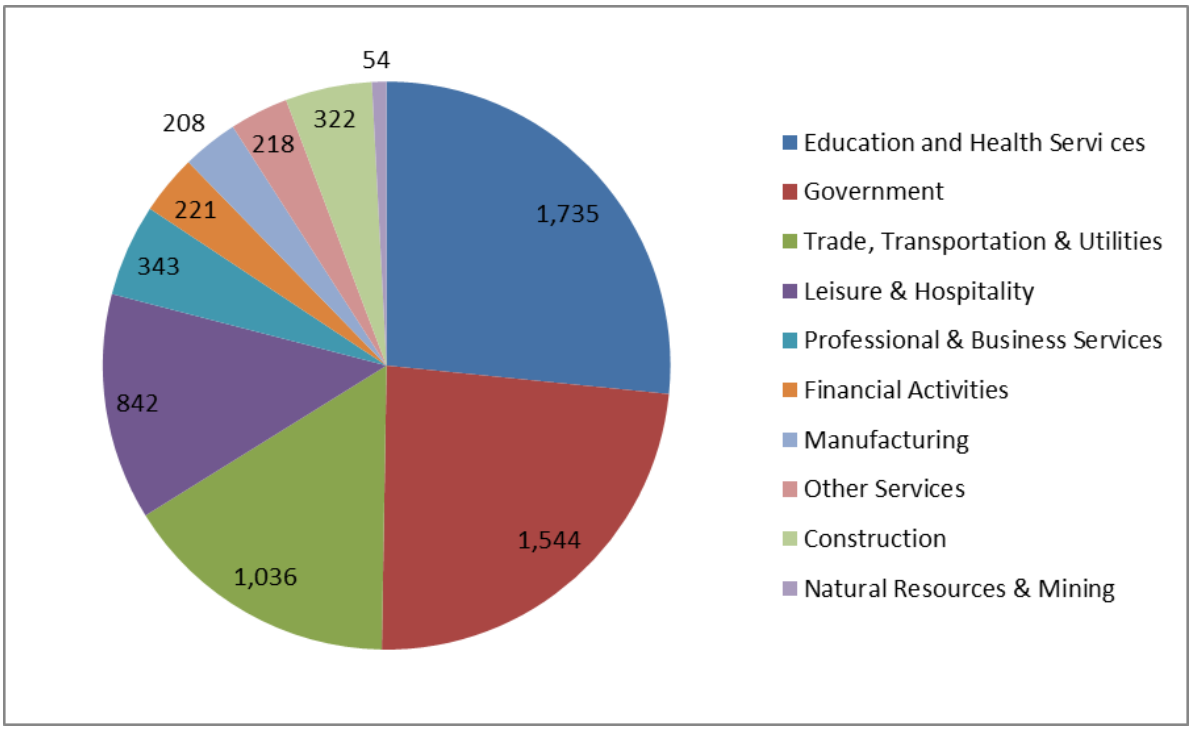
Table 3.3-2: Employment and Earnings in the MSB by Industry for 2015

Industry	Number of Businesses	Average Monthly Employment	Total Wages	Average Monthly Wages
TOTAL INDUSTRIES	2,116	22,835	$975,754,876	$3,561
TOTAL GOVERNMENT	103	5,051	$258,520,126	$4,265
Federal Government	19	213	$ 18,351,614	$7,180
State Government	76	1,545	$ 81,353,603	$4,388
Local Government	8	3293	$158,814,909	$4,019
PRIVATE OWNERSHIP	2,013	17,784	$717,234,750	$3,361
NATURAL RESOURCES AND MINING	34	171	$ 8,988,751	$4,380
Agriculture, Forestry, Fishing, Hunting	18	82	$ 1,536,850	$1,562
Mining	16	89	$ 7,451,901	$6,977
CONSTRUCTION	414	2,058	$146,107,903	$5,916
MANUFACTURING	39	422	$ 32,457,291	$6,409
TRADE, TRANSPORTATION AND UTILITIES	355	4,970	$167,723,894	$2,812
Retail Trade	213	3,919	$113,930,263	$2,423
Transportation and Warehousing	90	689	$ 29,726,269	$3,595
INFORMATION	26	444	$ 27,795,607	$5,217
FINANCIAL ACTIVITIES	122	772	$ 34,651,007	$3,740
PROFESSIONAL AND BUSINESS SERVICES	268	1,237	$ 62,163,826	$4,188
EDUCATIONAL AND HEALTH SERVICES	279	4,159	$169,074,005	$3,388
Educational Services	29	393	$ 13,158,739	$2,790
Health Care and Social Assistance	250	3,766	$155,915,266	$3,450
LEISURE AND HOSPITALITY	261	2,759	$ 48,640,241	$1,469
Arts, Entertainment and Recreation	52	381	$ 7,238,920	$1,583
Accommodation and Food Services	209	2,378	$ 41,401,321	$1,451
OTHER SERVICES	169	768	$ 18,757,666	$2,035
UNCLASSIFIED ESTABLISHMENTS	46	25	$ 874,559	$2,915

Source: Alaska Department of Labor and Workforce Development, Employment and Earnings Data, 2016.

The unemployment rate in the MSB was 7.8 percent, compared to a statewide rate of 6.5 percent in 2015 (Alaska Department of Labor and Workforce Development, Unemployment Statistics, 2016).

Figure 3.3-2 presents MSB job growth by industry between 2004 and 2015. Most of the growth industries in the MSB are those that support the resident population. Only three of the fastest growing industries receive most of their revenue from outside of the MSB (Leisure and Hospitality, Manufacturing, and Natural Resources & Mining) and each will be addressed later in this report.



Source: Alaska Department of Labor and Workforce Development, 2015

Figure 3.3-2: Job Growth in the MSB Between 2004 and 2015

The fastest growing support industry sector in the MSB is Education and Health Services. This industry is showing strong growth statewide as it matures and as the population of Alaska ages. As more medical care for MSB residents is being provided locally, additional economic growth has occurred in this sector, and continued growth is expected.

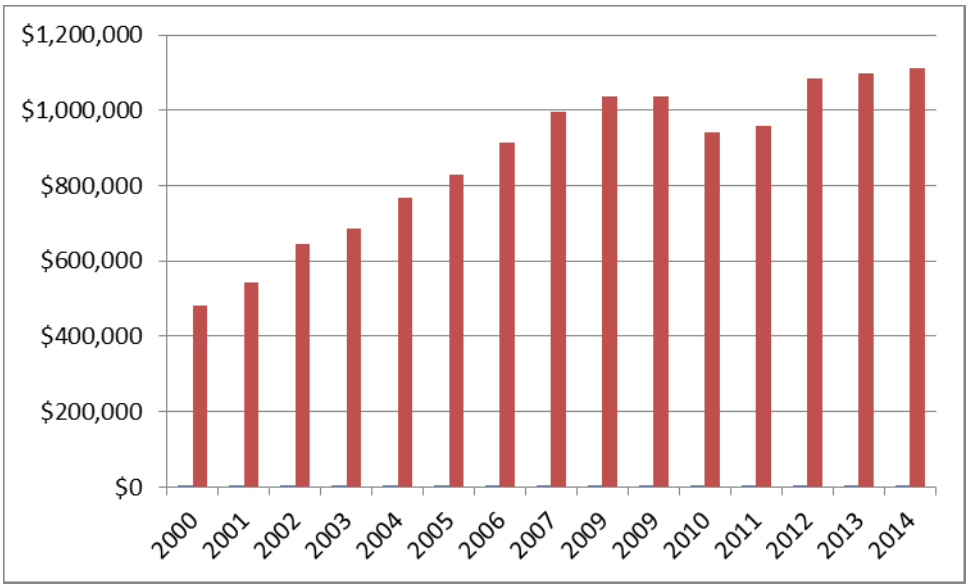
Government is another support sector showing strong growth in the MSB. The Trade, Transportation, and Utilities sector has also shown strong growth in the past decade, and reflects the opening of new retail establishments in the MSB in recent years.

Recreation and Tourism

The Recreation and Tourism sector (categorized as Leisure and Hospitality by Alaska Department of Labor and Workforce Development) has experienced strong growth in Alaska and the MSB in the past decade despite the economic recession that began in late 2008. The MSB has abundant recreational opportunities, and is located between the two most populous areas of the state. Anchorage and Fairbanks area residents travel to the MSB year around for recreation. In addition, the area is visited by travelers from out of state in group tours or traveling independently. Many visitors travel through the MSB to reach Denali National Park, one of the most popular attractions in Alaska. In fact, the southern portion of Denali National Park and all of Denali State Park are within the MSB boundaries.

Many opportunities for sport fishing and hunting, cultural/historical experiences, and other recreational activities are found within the MSB. Access to and through the MSB is primarily via major roadways and rail facilitates. Remote areas are accessible only via riverboat or air, and many visitors use those transportation services to reach remote recreation areas and lodges. Winter tourism is more prevalent in the MSB than in most places in Alaska due to the large population centers on either side of the MSB, and the major winter draw of the Iditarod sled dog race, which has its restart in Wasilla or Willow (depending on weather). The Hatcher Pass area in the MSB already draws winter recreation enthusiasts, and developments are being planned for that area to expand recreational opportunities. Recent lowered fuel prices may also be creating demand for recreational travel.

Figure 3.3-3 presents MSB bed taxes collected between 1990 and 2014. The MSB estimates that there are about 1,985 rooms available to accommodate visitors in the MSB in 2015. The bed tax of five percent has remained unchanged since it was implemented in 1990. The bed taxes collected in 2014 was $1,113,367. Despite the economic slowdown in 2009 and 2010, the average annual growth rate of bed taxes between 2000 and 2014 was 5.7 percent.



Source: Matanuska-Susitna Borough, 2015.

Figure 3.3-3: Bed Taxes Collected in the MSB, 2000 to 2014

Several airports in the MSB support recreational activities such as flightseeing tours, glacier landings, and mountaineering support and rescue operations. Remote lodges and hunting and fishing areas are also accessed through MSB airports. As capacity for growth at Anchorage area airports is limited, MSB airports will see growth in visitor and recreational flying.

Transportation and Industrial Development

The MSB's 9,000-acre industrial and commercial port district at Point MacKenzie continues to be developed. Infrastructure at the site includes a newly expended bulk head barge dock, a 1,200-foot deep-draft dock that can accommodate Panamax and Cape Class vessels, a 7,000 square foot terminal building, and about 9,000 acres of uplands available for industrial and commercial development.

A 32-mile long rail link is being developed to connect Point MacKenzie with the existing Alaska rail system, and major roadways in the area are being improved. Although a Knik Arm Crossing has been planned in this area, State and Federal budget concerns reduce the likelihood of that Crossing being built in the foreseeable future. This report assumes the Knik Arm Crossing will not be developed. This is a conservative assumption so that demand will not be overstated.

Natural Resources

Although agricultural production and mining activities occur at lower levels than in the past, they still contribute to the economy of the MSB. In addition, some timber harvest and production occurs within the MSB. While there are no fishing ports within MSB boundaries, many MSB residents participate in and benefit from fish harvest and processing activities in other parts of the state.

Agriculture

The U.S. National Agricultural Statistics Service designates areas of agricultural production in Alaska. The Anchorage area agricultural production statistics are made up mostly of production within the MSB, and represents more than half the agricultural value within Alaska. That production value, which includes the value of crops and livestock, has declined over time. Anchorage area agricultural production in 2012 was valued at about $30 million, down from about $31.8 million in 2007 (U.S. Department of Agriculture, 2012 Census of Agriculture for the Anchorage Alaska Area). Some value-added processing of agricultural products occurs within the MSB now, and the MSB is planning for development of an agricultural processing and product development center.

Mining

Mining activity in the MSB has also declined, and current activity in the industry is mostly restricted to sand and gravel extraction. Some gravel deposits are located near the rail lines, and materials are shipped by rail to Anchorage for construction projects there. With the development of bulk shipment infrastructure at Point MacKenzie, even more sand and gravel is being shipped to the Anchorage area (Matanuska Susitna Borough Regional Aviation System Plan, Phase I and Neal Fried Interview, 2015).

The MSB has both hard rock and placer deposits of gold and associated metals, and large coal fields exist within MSB boundaries. In addition, there has been interest in methane gas exploration and extraction in the MSB, and natural gas pipelines have been considered. Development is dependent on the prices of these resources, and the recent lowered prices reduce

the likelihood of production in the near future. Development may occur as prices rise and mining becomes feasible (Southeast Strategies, 2015).

Government

The government sector employed about 5,051 people in the MSB in 2015 (Alaska Department of Labor and Workforce Development, Employment and Earnings Statistics, 2016). The majority of those jobs are with local MSB or city governments (including school districts). State of Alaska employment in the MSB includes jobs at Denali State Park, the University of Alaska Mat-Su College campus, and the Alaska Railroad. In addition, the Alaska Department of Natural Resources Division of Forestry's firefighting operations for southern half of Alaska, located at the Palmer Airport, provides jobs within the MSB. Federal agencies include the U.S. Park Service's Denali National Park, the main Alaska offices of U.S. Department of Agriculture Rural Development, the National Resource Conservation Service, the Alaska Tsunami Warning Center, and FAA Flight Service Stations. Between 2004 and 2015, the MSB gained 1,544 jobs in the government sector (Alaska Department of Labor and Workforce Development, Employment and Earnings Statistics, 2016).

3.3.2 Matanuska Susitna Borough Aviation

The following section describes current aviation system and activity in the MSB, and developing trends in aviation that will impact its future. The information and data was developed from reviews of published sources, interviews with airport managers and other knowledgeable parties, and professional knowledge. A list of the publications reviewed and parties interviewed is included at the end of this section.

Existing Aviation System

The MSB accommodates 10 publicly-operated airports and over 200 private airstrips and seaplane landing areas. FAA Flight Service monitoring occurs at Talkeetna and Palmer airports, and is supervised from the regional Flight Service Station in Kenai. Scheduled air service is available at only one airport within the MSB (Skwentna), as that community is not connected to the regional road system. All other publicly-operated airports in the MSB are on the road system. The major airports within the MSB are within about two hours driving time from ANC.

According to Mapquest, Wasilla Airport is 50 miles, Palmer Municipal Airport is 50.6 miles, Willow Airport is 78 miles, and Talkeetna Airport is 121 Miles from ANC. Passengers and freight coming into ANC can be conveniently transported at a lower cost to communities within the MSB via the road system, decreasing demand for scheduled passenger and cargo service to most MSB airports. Charter service is available at most publicly-operated and several private landing areas within the MSB. Following is a brief description of air traffic at the publicly-operated airports in the MSB.

- Palmer Airport: Publicly-operated airport owned and managed by the City of Palmer. The Airport has little commercial aviation activity, however, two flight schools, and a centralized maintenance facility for a statewide air carrier are located at the Airport. A State Division of Forestry Aviation fire center is located on the Airport, and has seasonal operations between March (training) and August. Most of the other traffic is private General Aviation (GA). Military traffic is frequent and includes planes and helicopters, which sometimes stop for fuel.
- Wasilla Airport: Publicly-operated airport owned and managed by the City of Wasilla. The Airport accommodates some charter traffic, but most of the traffic is from GA aircraft. Some local GA flight instruction occurs, and companies, schools, and military from outside Wasilla sometimes train there.
- Talkeetna Airport: Publicly-operated airport owned and managed by the State of Alaska Department of Transportation and Public Facilities (DOT&PF). While there is no scheduled commercial air service at Talkeetna, there is flightseeing activity and charter traffic associated with the mountain climbing season, such as flying climbers and gear to and from base camps. The U.S. Park Service and military engage in search and rescue flights using the Talkeetna Airport.
- Willow Airport: Publicly-operated airport owned and managed by DOT&PF. The Airport has no scheduled service, but charter and tour activity is growing. A seaplane lake is located south across the highway from the runway, and is one of the few areas where commercial seaplane maintenance is available in the MSB.

- Big Lake Airport: Publicly-operated airport owned and managed by DOT&PF. The Airport has no scheduled service, but charter and tour activity is growing. Much of the traffic at the Airport is from local-based GA aircraft. Some seaplanes use the Airport to receive maintenance services.
- Skwentna Airport: Publicly-operated airport owned and managed by DOT&PF. This is the only major publicly-operated airport in the MSB off the road system, and is mainly used for mail, cargo (including fuel) and passenger transport for the community of about 75 people. Additional seasonal traffic at the Airport includes fishing charters in summer, and activity association with the Iditarod sled dog race in winter.
- Summit, Goose Bay, and Sheep Mountain Airports: Publicly-operated airports owned and managed by DOT&PF. These airports receive little traffic, and have few or no based aircraft.
- Lake Louise Airport: Publicly-operated airport owned and managed by DOT&PF. The Airport has only one based aircraft, and receives little traffic.

Around 200 private air strips, air parks, and water landing areas also exist in the MSB. An exact count is unknown, as not all of these facilities are registered with FAA. According to the FAA 5010 Airport Master Records, about 50 percent of the aircraft based at the MSB's 142 registered airports are at private airports. An estimated 60 to 70 landing areas in the MSB are not registered with FAA. Several private facilities were contacted, and capacity and demand for those facilities is discussed later in this report.

Publicly-operated airports are popular locations for aviation-related businesses to locate. They provide service for airport users and revenue for airport operations through land and/or facility lease, and through attracting users to these airports. A recent economic report developed for the MSB estimated that in 2014, the 8 large publicly-operated airports in the MSB were responsible for 380 jobs, $21 million in labor income, and $17.5 million in business sales within Alaska (Northern Economics, 2015). This report is included in Appendix B of this document. Sometimes, businesses that are not related to aviation also locate at publicly-operated airports. Table 3.3-3 shows leases at MSB publicly-operated airports by type.

Table 3.3-3: Total Leases by Economic Category At MSB Airports

Airport	Aircraft Services (e.g., fueling, maintenance)	Airline: Passenger and Cargo	Government	Passenger Concession or Other not Specified	Total, All Categories
Willow	7	3	3	2	15
Palmer	5	2	3	4	14
Talkeetna	2	6	4	2	14
Big Lake	4	1	0	2	7
Wasilla	2	2	0	2	6
Skwentna	0	1	1	0	2
Goose Bay	0	0	0	0	0
Lake Louise	0	0	0	0	0
Total All Airports	**20**	**15**	**11**	**12**	**58**

Source: Northern Economics, Inc., 2015; Alaska Department of Community, Commerce, and Economic Development (DCCED), 2015.

In addition to the airports and landing areas located within the MSB, there are a few airports close to the MSB that contribute significantly to the air traffic in the MSB (interviews with ANC Air Traffic Control Tower, Palmer FAA Flight Service Station, and airport managers at Merrill Field Airport (MRI), Lake Hood Airport (LHD), and Birchwood Airports). MRI has capacity for about 1,100 small aircraft (mostly GA). The nearby LHD has capacity for 335 seaplanes and 437 small wheeled aircraft. There is also significant air taxi business at both MRI and LHD. Birchwood Airport, just north of the Anchorage Bowl, has capacity for about 130 small aircrafts. A few MSB residents keep their aircraft at these airports, and a few residents of the Anchorage area keep their aircraft at airports in the MSB. Many Anchorage aircraft owners fly into the MSB for recreation and to receive services for their aircraft.

Aviation Forecast Summary for Publicly-operated Airports in the MSB

Table 3.3-4 presents the consolidation of the forecasts for all publicly-operated airports in the MSB through 2040 developed from the Matanuska Susitna Borough Regional Aviation System Plan, Phase I and the most updated aviation forecast data available for each of these airports. This forecast includes air traffic at Palmer, Wasilla with Wasilla Lake, Big Lake, Willow with

Willow Lake, Talkeetna, Skwentna, Goose Bay, Sheep Mountain, Summit, and Lake Louise Airports.

The consolidated forecast of MSB airports predicts a nearly doubling of operations and a 275 percent increase in based aircraft in 25 years. Commercial enplanements and operations are expected to nearly double over the same time period. Growth in GA operations is expected to double, while military operations are expected to increase 1.74 times by 2040. Based aircraft are expected to grow at a higher annual rate than other air traffic indicators.

Table 3.3-4: Consolidated Publicly-operated Airport Forecast MSB, 2015 to 2050

	2015	2020	2025	2030	2035	2040	Annual Change
Based Aircraft	417	585	690	817	968	1,150	4.1%
Commercial Enplanements	67,620	75,408	84,133	93,914	104,884	117,195	2.2%
Commercial Operations	21,196	23,534	26,156	29,099	32,405	36,101	2.2%
Military Operations	996	1,112	1,240	1,383	1,547	1,730	2.2%
Local GA Operations	72,020	90,626	105,172	122,403	140,214	160,560	3.3%
Itinerant GA Operations	76,618	86,875	97,865	110,430	124,537	140,563	2.5%
Total Operations	170,830	202,147	230,433	263,315	298,703	338,954	2.8%

Sources: Matanuska-Susitna Borough Regional Aviation System Plan, Phase I; Palmer (2015), Wasilla (2012), Willow (2009), and Talkeetna (2001 adjusted) Airport Master Plans; FAA 5010 Airport Master Records; and FAA Terminal Area Forecasts.

Includes Palmer, Wasilla with Wasilla Lake, Big Lake, Willow with Willow Lake, Talkeetna, Skwentna, Goose Bay, Sheet Mountain, Summit, and Lake Louise airports.

Growth Trends Impacting Aviation in the MSB

The following trends impacting future changes in aviation activity in the MSB were developed from general research of current and past activity, interviews with industry representatives, government economists, MSB and Anchorage area airport managers and users, and other knowledgeable parties. In some cases, professional judgment and analyses was used to develop these trends. These trends were then used to develop an estimate of demand for a new seaplane facility in the MSB, and its estimated future use. A list of the publications and sources reviewed and parties interviewed for this analysis is included at the end of this section.

A major trend impacting aviation in the MSB is population growth. Information obtained from surveys of aircraft owners and operators for this study indicates the desire to base aircraft near pilots' residences, suggesting that growth in aviation activity is related to growth in population.

The following MSB population projections were developed by the State Demographer's office at the Alaska Department of Labor and Workforce Development in 2012.

Table 3.3-5: Population Projections for the MSB, 2012 - 2042

Time Period	Annual Average Births	Annual Average Deaths	Annual Net Migration	Annual Population Change	Period End Total Population	Annual Average Growth Rate
2012-2017	1,400	506	1,469	2,363	105,617	2.37%
2017-2022	1,591	621	1,476	2,446	117,845	2.19%
2022-2027	1,782	755	1,455	2,482	130,254	2.00%
2027-2032	1,962	909	1,419	2,472	142,615	1.81%
2032-2037	2,128	1,072	1,359	2,415	154,692	1.62%
2037-2042	2,299	1,228	1,258	2,329	166,338	1.45%

Source: State Demographer's Office, Alaska Department of Labor and Workforce Development, 2012.

According to the State Demographer's Office, these population projections are based only on births, deaths, and in and out migration, and do not consider economic influences or the development of any particular projects.

Table 3.3-1 shows population growth by area within the MSB between 2000 and 2015. In general, growth in the MSB since 2010 has taken place near the (high population areas around Palmer and Wasilla), and to the east of that area. Also strong growth has occurred in the Point MacKenzie and Big Lake areas. Population loss has occurred in areas outside of the Palmer and Wasilla area, especially to the north and west, near Skwentna, Willow, and Talkeetna. The population projections in Table 3.3-5 show slowing growth in the MSB over time.

Trends Encouraging Growth in Aviation

The following growth factors could lead to an increase in aviation activity in the MSB. While some factors impact the MSB directly, other factors impact areas adjacent to the MSB or aviation in general, and indirectly affect air traffic in the MSB. These trends directly impact the estimates of demand for a new SPB in the MSB, and its forecasted use. Many of these trends have been developed over time through professional research and analysis (Southeast Strategies, 2015).

Positive General Trends

- The tourism and outdoor recreation sector in Alaska is strong and growing. Aviation activity associated with tours and fishing, hunting and guiding activities in the state have shown strong growth in recent years, and that growth is likely to continue into the future (Southeast Strategies analyses, 2015).
- Lowered fuel prices appear to increase demand for recreational travel. It also tends to increase disposable income in general, which allows more income for travel and recreation activities.

Positive Trends Specific to the Matanuska-Susitna Borough

- Population and employment growth continues in the MSB.
- Demand is high for aircraft tie downs and hangars in the Anchorage area, and most airports are running out of space (Interviews with managers at MRI, LHD, and Birchwood Airports). As this demand increases, some of it will expand beyond the Anchorage Bowl into adjacent areas, such as the MSB.
- The MSB has more land available for airport development than Anchorage, and aviation enthusiasts look toward the MSB as a place to build or locate on private air parks, landing strips and lakes. There is also more room for lease lots on public MSB airports for use by aviation businesses
- The MSB government stopped charging property tax on aircraft based in the MSB, reducing the costs to base aircraft there (MSB Finance Department, 2015).
- Table 3.3-6 presents contacts with aircraft by the FAA Flight Service Station at Palmer. This information shows growth in traffic in the Palmer area by an average of nearly eight percent per year between 2010 and 2014. This growth is expected to continue, though at a slightly slower rate into the future.

Table 3.3-6: Air Traffic Contacts at Palmer Flight Service Station

Contacts	2010	2011	2012	2013	2014	Annual Change
Air Carriers	14	10	13	21	16	3.4%
Air Taxi	336	258	278	487	1,445	44.0%
GA	13,832	12,657	11,709	13,103	17,724	6.4%
Military	144	107	200	240	247	14.4%
TOTAL	14,326	13,032	12,200	13,851	19,432	7.9%
Radio Contacts	12,256	11,130	9,046	8,457	8,174	-9.6%
Pilots Briefed	2,058	1,907	1,698	2,815	2,389	3.8%
Airport Advisories	10,509	9,202	8,445	9,697	14,344	8.1%

Source: FAA Flight Service Station, Palmer, AK, 2015.

Note: Aircraft in contact with FAA flight service stations are generally contacted while in the air. They may or may not be landing or taking off at Palmer, and aircraft are not mandated to contact the Flight Service Station. So this count is not strictly comparable to air traffic at Palmer. It does, however, show trends over time.

Trends Discouraging Growth in Aviation

The following factors could lead to a decrease in aviation activity in the MSB. While some factors impact the MSB directly, other factors impact areas adjacent to the MSB or aviation in general, and indirectly affect air traffic in the MSB.

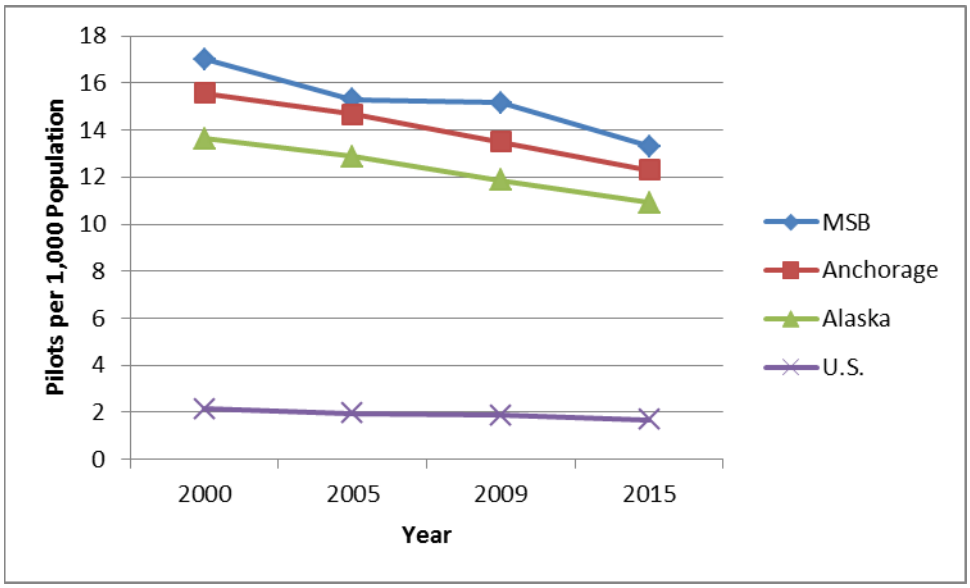
Negative General Trends

- The national economy continues to be somewhat stagnant despite slight and steady improvement following the 2008 recession.
- Disposable incomes are decreasing due to slow income growth and increasing costs.
- Alaska's economy may be facing challenging times ahead due to low oil prices and declining oil production negatively affecting State government revenues. Without a rebound in oil prices and/or increased oil production, if replacement revenues cannot be found, reductions in State spending will result in job losses in government and other

industries in Alaska. In challenging economic times, people will make less costly substitutions for air travel and recreational activities.

Negative Aviation Trends

- Air traffic in general across the nation has been decreasing. Ratios of pilots and based aircraft to the population have decreased consistently for many years, and will likely continue to decline. Figure 3.3-4 shows the change in certified pilots per 1,000 population in the MSB, Anchorage, Alaska, and the U.S. The numbers have been decreasing over time, with a greater decline in the MSB than in Anchorage, the entire state, and the nation between 2009 and 2015. The average annual growth rate for all areas between 2000 and 2015 has been about -1.6 percent per year.



Source: Federal Aviation Administration Civil Airman Statistics, and Alaska Department of Labor and Workforce Development.

Figure 3.3-4: Registered Pilots per 1,000 Residents in Selected Areas, 2000-2015

- Table 3.3-7 shows the decline in the number of aircraft used for GA and Air Taxi activities in Alaska (from annual FAA surveys), as well as a decrease in the activity of those aircraft. Other survey results show that the number of aircraft used for these activities in Alaska peaked in 2010. Hours flown had fallen in general, but started picking up again in 2014 (possibly due to declining fuel prices). Increased insurance and security costs and the decreasing number of certified pilots tend to increase the cost of commercial and recreational air travel.

Table 3.3-7: Alaska GA and Air Taxi Survey Results 2005 - 2014

	2005	2014	Percent Change	Annual Growth
Aircraft Population Size	8,815	8,182	-7.2%	-0.8%
Estimated Number Active	6,217	5,641	-9.3%	-1.1%
Estimated Percent Active	70.5%	68.9%	-2.3%	-0.3%
Estimated Total Hours Flown	815,379	771,965	-5.3%	-0.6%
Estimated Average Hours Flown	131.1	136.9	4.4%	0.5%

Source: General Aviation and Air Taxi Survey, Federal Aviation Administration, 2005 - 2014. Latest year available at https://www.faa.gov/data_research/aviation_ data_statistics/general_aviation/CY2014/

- Aviation industry representatives were asked what they saw as future aviation trends affecting the MSB. Anecdotal information obtained from those interviews suggests that fewer people are seeking to become pilots, and commercial pilots are in particular demand. While local and regional flight schools interviewed are showing increased enrollment, it was suggested that many of the Vietnam War-era commercial pilots are retiring, and not enough commercial pilots are being trained to fully replace them (Interviews of Land and Sea Aviation, and Wingnuts Aviation flight schools, 2016). Table 3.3-8 shows the average age of active pilots in the U.S. between 2005 and 2014. The increasing average age tends to indicate fewer young people are becoming pilots. Lower numbers of certified pilots going forward could result in slowed aviation activity in the MSB.

Table 3.3-8: Average Age of Active Pilots by Category as of December 31

Calendar Year	Type of Pilot Certificates						
	Total 1/	Student	Sport	Recreational	Private 2/	Commercial 2/	Airline Transport 2/
2014	44.8	31.5	55.8	43.1	48.5	45.5	49.8
2013	44.8	31.5	55.2	44.8	48.5	45.4	49.7
2012	44.7	31.5	54.7	47.8	48.3	44.8	49.9
2011	44.4	31.4	54.4	48.8	47.9	44.4	49.7
2010	44.2	31.4	53.8	50.8	47.6	44.2	49.4
2009	45.3	33.5	53.5	50.4	47.1	44.2	48.9
2008	45.1	33.6	53.2	50.1	46.9	44.8	48.5
2007	45.7	34.0	52.9	52.4	48.0	46.1	48.3
2006	45.6	34.4	52.9	51.5	47.7	46.1	48.1
2005	45.5	34.6	53.2	50.9	47.4	46.0	47.8

Source: Federal Aviation Administration Civil Airman Statistics.

Notes: 1/ Includes helicopter (only) and glider (only).
2/ Includes pilots with an airplane and/or helicopter and/or glider and/or gyroplane certificate. Pilots with multiple ratings will be reported under the highest rating.

- The FAA has a new policy regarding developing lease lots on publicly-operated airports (Appendix I, Apron Projects, Section I-2 of FAA Order 5100.38D, *Airport Improvement Program Handbook,* Federal Aviation Administration). The FAA will fund only apron facilities to be used for public parking, and not for exclusive use (i.e. lease lots). This will tend to increase costs for commercial aviation and aviation support services, which could reduce aviation activity in the MSB.

Negative Trends Specific to the Matanuska-Susitna Borough

- There is currently some air shipment of goods to and from the MSB in areas not on the road system, such as the community of Skwentna, and remote lodges and camps. This activity is expected to continue, although possibly at a declining rate due to possible decreases in subsidies for such services (i.e., Essential Air Service and Bypass Mail subsidies).

- Decreased economic activity in areas such as natural resource exploration and extraction could decrease aviation activity in off-road areas of the MSB.

- Table 3.3-9 shows aircraft ownership within the MSB is increasing (up 1.1 percent between 2009 and 2015), however, aircraft ownership in the Anchorage area is decreasing (down 3.3 percent between 2009 and 2015). The data source used for this analysis reports aircraft by mailing address of the owner, which does not indicate where the aircraft is actually based. Anchorage area residents travel to the MSB, and some may base their planes there because there is more room to base aircraft at a lower cost than in the Anchorage-area facilities.

Table 3.3-9: Aircraft by Mailing Address of Owner in the MSB, 2009 to 2015

City	2009	2011	2014	2015	Average Annual Growth
Big Lake	100	107	101	101	0.2%
Big Mountain	1	1	1	1	0.0%
Fritz Creek	8	9	8	7	-2.2%
Houston	8	7	9	8	0.0%
Palmer	381	405	394	389	0.3%
Talkeetna	108	116	108	111	0.5%
Trapper Creek	8	10	11	9	2.0%
Wasilla	811	852	900	906	1.9%
Willow	110	118	111	106	-0.6%
MSB Subtotal	1,535	1,625	1,643	1,638	1.1%
Anchorage Bowl	4,109	4,117	3,453	3,363	-3.3%
Grand Total	**5,644**	**5,742**	**5,096**	**5,001**	**-2.0%**

Source: FAA's Certified Aircraft Master Lists, 2009, 2011, 2014, and 2015.

3.3.3 Air Traffic Forecast for a New Facility at Sevenmile Lake

Methods and sources used to develop the following air traffic forecast include:

- Review of current MSB traffic, and the latest air traffic forecasts for MSB airports and adjacent areas;
- Review of existing capacity at and demand for area airports;
- Surveys of private pilots and aircraft owners residing in the MSB and adjacent areas;

- Surveys of aviation support businesses, air carriers, and air taxis located in the MSB and adjacent areas;
- Surveys of major publicly-operated and private air facilities in the MSB and adjacent areas; and
- Reviews of aviation and socioeconomic trends in the world, nation, state and the local area that may be expected to impact aviation activity in the MSB.

Since this airport facility does not yet exist, assumptions were made by knowledgeable sources regarding its location, size, configuration, and available facilities and amenities. Much of the aviation activity within the MSB occurs on private land, and complete and historic data is not available for much of that traffic. Therefore, much of the following forecast was developed from best estimates of local and regional knowledgeable parties, and from the judgment of the forecasters.

Capacity and Demand

The following information estimates demand and capacity at the largest publically operated airports in the MSB and at GA airports in the Anchorage area. The number of tie-downs and slips available and occupied was provided by the DOT&PF airport leasing section. Management staff at the airports provided estimates of local traffic, demand for space (determined by waiting lists and requests), and information on future plans at these airports.

Publicly-operated Airports

The following information estimates demand and capacity at the largest publically operated airports in the MSB and at GA airports in the Anchorage area. The number of tie-downs and slips available and occupied was provided by the DOT&PF airport leasing section. Management staff at the airports provided estimates of local traffic, demand for space (determined by waiting lists and requests), and information on future plans at these airports.

Capacity and demand at the largest MSB publicly operated airports (does not include transient aircraft parking):

- Big Lake: 37 tie-downs, with 37 occupied. There is a short wait list for tie-downs. The airport hosts three or four mechanics, all who are busy maintaining wheeled planes and seaplanes that are trailered from the adjacent lake. About 60 percent of GA traffic is local. There are plans to expand the apron after 2018, and some additional tie-downs will be added then.
- Palmer: 110 tie-downs, with 70 occupied. The Palmer Airport recently eliminated 40 tie-downs (total tie-downs was previously 150). No demand for regular tie-downs, but there is demand for hangars and heated/electrified tie-downs.
- Talkeetna: 35 tie-downs, with 35 occupied. There are plans to develop eight lease lots, 20 transient tie-downs, and 25 to 30 GA tie-downs. The Talkeetna Airport receives many requests for hangar space. Additionally they receive about 12 inquiries regarding space for businesses each year.
- Wasilla: 100 tie-downs, with 100 occupied and six pilots on the waiting list. Those tie-downs with heat and electric are the most desirable; 20 people are on the waiting list, with only two tie-downs typically opening per year. Hangars are also in demand at the Wasilla Airport.
- Willow: 50 tie-downs, with 30 occupied. Three lakeshore lots have parking for approximately six seaplanes. The Willow Airport plans to build 50 additional tie-downs. There are always requests for hangars.
- Smaller publicly operated airports outside of the most populated areas in the MSB have few based aircraft, and are not indicative of overall demand for the more populated areas of the MSB.

To summarize capacity at large publicly operated airports in the MSB, there are 332 tie-downs, of which only 60 are vacant (18 percent). Current vacancies exist at the Palmer and Willow Airports. Within the MSB, Willow Lake is the only publicly-operated airport with seaplane slips or docks available for lease or rent. Willow Lake and Big Lake Airport are also among the few areas where seaplane maintenance is available commercially. There are six slips on Willow Lake, and all are leased by air taxi operators. There are also seaplane slips available at private facilities, or outside of the MSB, and they are discussed later in this report.

Capacity and demand at publicly-operated GA airports in the Anchorage area:

- Birchwood: 130 tie-downs, with 118 occupied.
- MRI: 1,100 tie-downs, with 925 occupied. 75 percent occupancy rate for tie-downs, 40 percent of which are privately owned. About 55-70 tie-downs have electric plug ins, and those are in high demand, with a 15 person waiting list. The number of based aircraft has been dropping since about 1991. According to the Merrill Field Airport Master Plan, growth for based aircraft to 2033 ranges from -0.7 percent to 1.3 percent.
- LHD SPB: 335 slips, with 335 occupied. 266 people on the waiting list for slips. Many of the slips have room for a wheeled aircraft tie down as well. Airport management staff stated that the length of time to get a seaplane slip at LHD is seven to 10 years. LHD has 437 tie-downs, with 437 occupied. The only waiting list for tie-downs is at Echo Ramp, which has electric plug ins, with 38 people on the list.

To summarize capacity at publicly-operated GA airports in the Anchorage area, there are about 1,667 tie-downs, of which 187 are vacant (11 percent). There are 335 seaplane slips, with zero vacant. While some public aircraft parking on land is available in the MSB and Anchorage areas, there is no public seaplane parking currently available, and some facilities have long waitlists for public facility slips.

One question from the on-line survey asked “How long did you have to wait for aircraft parking space?” Following are the responses to that question.

- LHD SPB: average wait for a slip was about 10 years, with a range of two to 20 years (23 responses). Average two-year wait for a hangar, slight wait for a tie-down (two responses).
- ANC: average wait for a tie-down was about eight years, with a range of seven to 10 years (three responses).
- Talkeetna: one respondent waited for 15 months, and two others mentioned that it was hard to get tie-down space at this airport, and no hangars are available (four responses).
- Palmer: average wait for hangar space is about 3.5 years (three responses).

- Wasilla: several respondents mentioned that space is tight at Wasilla, with a slight wait for tie-down space, and up to five years for hangar space (five responses).
- Birchwood: wait for a hangar was about three months (one response).

The willingness of aircraft owners/operators to wait for this parking, and the length of the waits indicates that these facilities are not able to meet the demand for aircraft parking.

Interviews and surveys undertaken for this report indicate a strong demand for seaplane slips from users of publicly operated airports in the MSB. The demand for tie-downs, in general, at publicly operated airports does not appear as strong. However, responses indicate a strong demand for tie-downs at a facility next to a lake with slips available. In addition, there appears to be strong demand for tie-downs with electric plugins, and hangar space at publicly-operated airports in the MSB.

Private Air Facilities

While there are 10 publicly-operated airports in the MSB, there are a minimum of 200 private air facilities in the MSB. About 160 current and proposed private facilities are registered with the FAA, and it is estimated that another 40 or more are not registered. Surveys of some of the larger private airparks in the MSB were performed.

Private airport facilities are operated in a variety of ways. Some are privately owned and managed by individuals. Some have homeowners associations which are funded by fees paid by owners and managed by a board of owners. Some airparks include shared-use facilities, and some do not. One airport surveyed is managed by a private company. Some airparks allow non-owners/residents to rent shared-use facilities.

Surveys of airparks suggested that many of these facilities are fully-developed and at capacity. At some airparks, hangars, docks, slips, and/or tie-downs are developed and owned by the property owner or homeowner's association, and rented out. According to the interviews, these spots are generally fully rented, with special demand for hangars. Some newer airparks still have available spaces, but they are generally back from the water or airstrip, without direct access to

runways or waterlanes. Turnover at private airparks is low, especially at facilities with water access.

Discussions with area realtors revealed that lakeside property with seaplane access that is also connected to the regional road system does not come up for sale often. When they do become available, the purchase price of those lots is generally high. Local MSB realtors indicate that there is strong interest in property on a road system with direct seaplane access, and that they receive three requests for this kind of property for every one lot that becomes available.

While no comprehensive survey of private airparks was undertaken, the information received from selected interviews shows more demand for parking at private facilities than can currently be met, especially for seaplane parking.

Air Traffic Forecast

The air traffic forecast for the proposed Sevenmile Lake facility is based on economic and aviation trends and current demand for aircraft parking described above, and the gradual buildout of the facility through 2040. The following summarizes detailed economic and aviation trends presented earlier in this report. In general, it appears that aviation activity is growing in the MSB, and there is high demand for seaplane parking, hangar parking, and tie-downs with electric plugins, due to the lack of facilities.

MSB Population and Economy

- Much of the economy is based on support of the surrounding population. Economic growth is strongly affected by population growth.
- The tourism and outdoor recreation sector in the MSB is strong and growing. Aviation activity associated with tours and fishing, hunting and guiding activities in the MSB have shown strong growth in recent years, and that growth is likely to continue into the future.
- The MSB economic sectors of government, and support industries such as retail trade and transportation, communication, and utilities continue strong growth.
- Strong population growth in the MSB continues, with population up nearly 10 percent since 2010, and up over 50 percent since 2000. The highest recent population growth

within in MSB has occurred in the Point MacKenzie area, near this proposed facility (see Table 3.3-1).

- Population growth in the MSB is expected to continue, although at a slightly slower rate.
- State of Alaska budget reductions will negatively impact the economy and population of the entire state.

Aviation Trends

- Costs and regulations have been increasing in the aviation industry.
- Nationally, fewer people are becoming certified pilots, and the average age of pilots is increasing (current average age is about 50 years).
- The MSB has more pilots per 1,000 population than the Anchorage area and Alaska in general. That number has dropped about two percent per year since 2009.
- The number of registered aircraft owned by MSB residents continues to grow (about five percent between 2010 and 2014), but not as fast as population (up about 10 percent in the same time period). Registered aircraft owned by Anchorage area residents dropped about 13 percent between 2010 and 2014.
- An annual FAA survey of GA and air taxi pilots in Alaska shows that the number of active aircraft and average use of each aircraft has declined slightly over the past 10 years. The latest year of data is at https://www.faa.gov/data_research/aviation_data_statistics/general_aviation/CY2014/
- Recent lowered fuel costs seem to have increased aviation activity.

Demand for aircraft parking in the MSB

- Aircraft owners and operators prefer to base their aircraft near where they live. Few MSB pilots base aircraft in Anchorage, and few Anchorage pilots base aircraft in the MSB.
- MSB has 10 publicly-operated and at least 200 private aviation facilities. Only Willow Lake of the publicly-operated airports has permanent seaplane parking.

- While about 33 percent of MSB aircraft are on floats for at least part of the year, for those who responded to the on-line survey, that proportion is about 60 percent.
- Many private facilities have seaplane access and parking, but few have vacant seaplane parking. Private property with seaplane access located on the road system is in high demand.
- Publicly-operated MSB airports have only about an 18 percent vacancy for wheeled aircraft – all facilities are full except Palmer and Willow.
- Seaplane slips or docks, electrified tie-downs, and reasonably-priced hangars for lease or rent are in high demand in the MSB.
- LHD, the only nearby publicly-operated seaplane facility, has a waiting list of 266 people (for 335 slips), with a wait time for a slip of seven to 10 years.

Additional factors affecting growth in aviation activity in the MSB were considered for this forecast, although impacts by area were not fully quantified. The greatest growth in aviation activity is expected to occur in the following areas in no particular order:

- At existing publicly-operated airports where capacity allows;
- At the periphery of populated areas, especially areas of strong population growth;
- Where there is affordable, flat land on the road system available for development of private airstrips (especially on the road system);
- On lakes with room to land where there is affordable land available around them (especially on the road system), and where airspace is protected and land use conflicts minimized;
- In areas with access to popular recreation and tourist attractions, such as Denali State and National Parks;
- In areas on the road system closest to Anchorage (overflow from the Anchorage area); and
- On the north side of Knik Arm (Point MacKenzie area), especially if a Knik Arm Bridge is built in the future.

Description of the New Airport

For purposes of this study it is estimated the proposed new facility at Sevenmile Lake will open in 2020. It will be located about 25.4 miles (40 minutes driving time) from Wasilla. From the Big Lake Post Office, it is about 27 miles (43 minutes driving time) to the new airport. Sevenmile Lake offers a waterlane configuration that can accommodate varied wind conditions, and affords the possibility of adding a crosswind waterlane in the future.

Sevenmile Lake SPB Forecast Assumptions

- The first year use of the Airport will be light, as it will take time for owners/ operators to move their aircraft, and for transient aviators to discover it.
- No commercial or military air traffic will occur initially, however, within five years, air taxis will begin to base at the facility. No scheduled air service is expected at this facility in the foreseeable future.
- The forecast assumes similar operations per based aircraft as at all MSB publicly-operated airports, starting in 2020 with 170 operations per based aircraft. Because pilot certification and small aircraft usage has been declining over time, this forecast assumes that number will decrease over time to about 155 by 2040.
- Initially, GA operations are 60 percent local and 40 percent transient (similar to Big Lake Airport). By 2030, transient GA traffic increases to 55 percent as transient operators become familiar with this facility.
- This facility will provide space for seaplane and other aircraft maintenance – something that is in high demand from both Anchorage area and MSB aircraft owners and operators.
- Because of high demand for seaplane slips, the growth in based seaplanes will occur at a higher rate that the growth in based wheeled aircraft.
- The initial years of this forecast are constrained by funding to construct aircraft parking. Later years of this forecast are partially constrained, assuming new parking to be built to keep up with demand.

- Overall growth rates consider:
  - MSB population projections (increase).
  - Southwest MSB population growth (increase).
  - Change in pilots per 1,000 in population (decrease).
  - Change in aircraft owned by MSB residents (increase).
  - Change in number of active GA aircraft in Alaska (decrease).
  - Change in hours flown per GA aircraft in Alaska (decrease).
  - Statewide economic outlook (decrease at first, increasing later).
  - Aging of pilots (works to decrease the number of certified pilots).
  - Overall MSB publicly-operated airport forecast (increase).
  - Growth of based seaplanes higher than wheeled aircraft due to high demand (increase).

General Forecast Summary

The following section presents estimates of activity for the base year (year of opening) of 2020 at a Sevenmile Lake facility (see Table 3.3-10), followed by an air traffic forecast to 2040.

Table 3.3-10: Base Year Estimates (2020) for Sevenmile Lake SPB

	Base Year
Based Aircraft	15
Floats	8
Wheels	7
Enplanements	0
Operations	4,251
Air Taxi	0
GA - Local	2,550
GA - Itinerant	1,701
Military	0

Source: Southeast Strategies, January 2016.

Based Aircraft

Survey information, as well as inventories of public and private facilities indicates the inability of available public and private seaplane slips in the MSB to meet current demand. Because seaplane slips are in higher demand than tie-downs in the MSB, this forecast assumes that eight of the 10 permanent slips will be leased in the first year. The only reason they will not all be leased within the first year is the newness of the facility, and the time it may take for aircraft operators to make a move. Also, eight of the adjacent tie-downs will also be leased for use by the slip operators for when the lake is frozen. Another seven of the 10 airport tie-downs located on the airstrip will be leased, for a total of 15 tie-downs leased (eight of which are shared with aircraft at slips in summer), for a total of 15 aircraft based at the Airport in the first year of Airport operations. All of these aircraft will be small single engine, such as Piper Supercubs, and Cessna 180s. This forecast assumes that air taxis will decide to base operations at this facility by 2025.

Enplanements

No commercial air carriers expressed interest in basing at or serving the MSB in general, and this new facility in particular, except the occasional on-demand/charter flight. Therefore, no enplanements are expected in the opening year. This forecast assumes that air taxis providing flightseeing and service to rural communities, lodges, hunting and fishing sites, and other recreational or remote sites will begin basing operations at Sevenmile Lake by 2025. Enplanements shown for this forecast are passengers on these air taxis.

Operations

Initially, only GA activity will occur at this airport, and no commercial or military operations will occur in the first year. As the facility develops, air taxis will begin to base at Sevenmile Lake in 2025.

Estimates of operations at publicly-operated airports in MSB in 2015 show about 173 operations per based aircraft, and decreases slightly to 155 operations per based aircraft in 2020. Assuming the popularity of this new facility, we estimate operations per based aircraft in 2020 to be 170, dropping slightly to 165 by 2025, and eventually to 155 by 2040. By 2025, more aircraft will

have based at the Airport, but the trends showing fewer pilots being certified and fewer flight hours taken per aircraft will lower the number of operations per based aircraft over time.

At Big Lake, a nearby airport with limited seaplane access, about 60 percent of GA operations are local, and 40 percent are itinerant. For the opening year of this facility in 2020, assume a similar breakdown, as itinerant pilots may not initially be aware of the facility. As the facility becomes developed and known and businesses establish themselves (aircraft maintenance businesses, flight schools, etc.), the percent of itinerant traffic will increase to 55 percent.

Estimates of operations by air taxis that will begin basing at Sevenmile Lake in 2025 are based on the proportions of air taxi operations per based aircraft that occurs at Willow Airport and Willow Seaplane Base.

High and Low Air Traffic Forecasts

Following are a high and low growth air traffic forecasts through 2040 for a proposed new Airport and seaplane facility at Sevenmile Lake, which includes both an airstrip, and a water landing area.

Table 3.3-11 presents the low growth forecast for activity at Sevenmile Lake. In this forecast, it is assumed that one air taxi with four aircraft will base at Sevenmile Lake in 2025, and another air taxi with two aircraft will base there in 2028.

Table 3.3-11: Air Traffic Forecast, Low Growth, Sevenmile Lake SPB, 2020 through 2040

	Opening 2020	2025	2030	2035	2040
Based Aircraft	15	32	37	42	47
Floats	8	18	21	24	27
Wheels	7	14	16	18	21
Enplanements	0	3,181	6,685	7,585	8,540
Operations	4,251	16,880	23,840	26,584	29,404
Air Taxi	0	6,362	10,213	11,589	13,048
GA - Local	2,550	5,248	6,128	6,743	7,354
GA - Itinerant	1,701	5,248	7,476	8,226	8,972
Military	0	21	24	27	30

Source: Southeast Strategies, January 2016.
Note: Totals may not add due to rounding.

Table 3.3-12 presents the high growth forecast for activity at Sevenmile Lake. In this forecast, it is assumed that one air taxi with five aircraft will base at Sevenmile Lake in 2025, an air taxi with three aircraft will base there in 2028, and another air taxi with three aircraft will base there in 2030.

Table 3.3-12: Air Traffic Forecast, High Growth, Sevenmile Lake SPB, 2020 through 2040

	Opening 2020	2025	2030	2035	2040
Based Aircraft	15	34	46	55	66
Floats	8	20	27	33	39
Wheels	7	14	19	22	27
Enplanements	0	3,380	8,225	9,892	11,805
Operations	4,251	17,935	29,329	34,663	40,640
Air Taxi	0	6,760	12,566	15,112	18,036
GA - Local	2,550	5,577	7,539	8,793	10,166
GA - Itinerant	1,701	5,577	9,198	10,727	12,402
Military	0	22	26	31	37

Source: Southeast Strategies, January 2016.
Note: Totals may not add due to rounding.

Fleet Mix

Information obtained from the aircraft owner/operator survey suggests that initially, the aircraft based at the Sevenmile Lake facility will be single engine aircraft such as Piper Super Cubs, Cessnas 180s, and Maules. As the facility develops and traffic increases, small twin engine aircraft as well as helicopters and ultralights will be based at the Airport. In addition, larger transient aircraft will use the runway as it is built out. The Airport Reference Code at opening will be A-1, with a possibility to add a C-2 runway as traffic develops.

3.3.4 Airport Layout and Boundary

Airports present serious challenges for their host communities when it comes to land-use planning: they require large tracts of land; they produce varied impacts beyond their boundaries; and they serve a dynamic and growing industry that often seems to be in constant transition. Airports are also important, if not vital, to local and regional economies.

Local governments are therefore faced with a demanding balancing act: to minimize the risk that future populations will be exposed to airport-related impacts, and to protect the long-term viability of the airport by ensuring that encroaching development does not choke the airport's long-term development needs. In extreme cases, the choking off of airport development potential can lead to the abandonment and relocation of the airport — a project of daunting expense with potentially severe adverse impacts of its own. The following staged development of Sevenmile Lake SPB is based on the high growth forecast.

Although the airport at Sevenmile Lake would be constructed in stages timed to accommodate actual increases in aircraft activity over time, one of the first steps in developing the airport should be to acquire all property required to accommodate reasonably foreseeable development as defined by the 20-year forecast. Figure 3.3-5 shows the proposed airport boundary at the long-term (20-year) stage of development. The long-term facility consists of:

- a 200-foot x 5,000-foot waterlane and taxi channels
- 60 seaplane slips
- a 3,200-foot long by 60-foot wide gravel runway and taxi lanes
- apron & ramp areas with tie-downs
- a 5,000-foot by 100-foot grooved asphalt runway
- runway lighting systems and navigation aids
- maintenance and firefighting equipment storage buildings
- utilities, and gravel access roads.

The airport boundary, which encompasses approximately 1,740 acres, is intended to provide control over landing areas, object free areas and runway protection zones, apron areas and terminal areas. It also provides setbacks to help guard against adverse noise impacts to adjacent off-airport property. A 100-foot shoreline setback on the two lakes at the southern end of the SPB are intended to control access to the SPB and help prevent conflicts with recreational and other non-aviation use of the lakes. Approximately 30 acres of the property within this boundary would be acquired from private owners. The remainder is owned by the MSB.

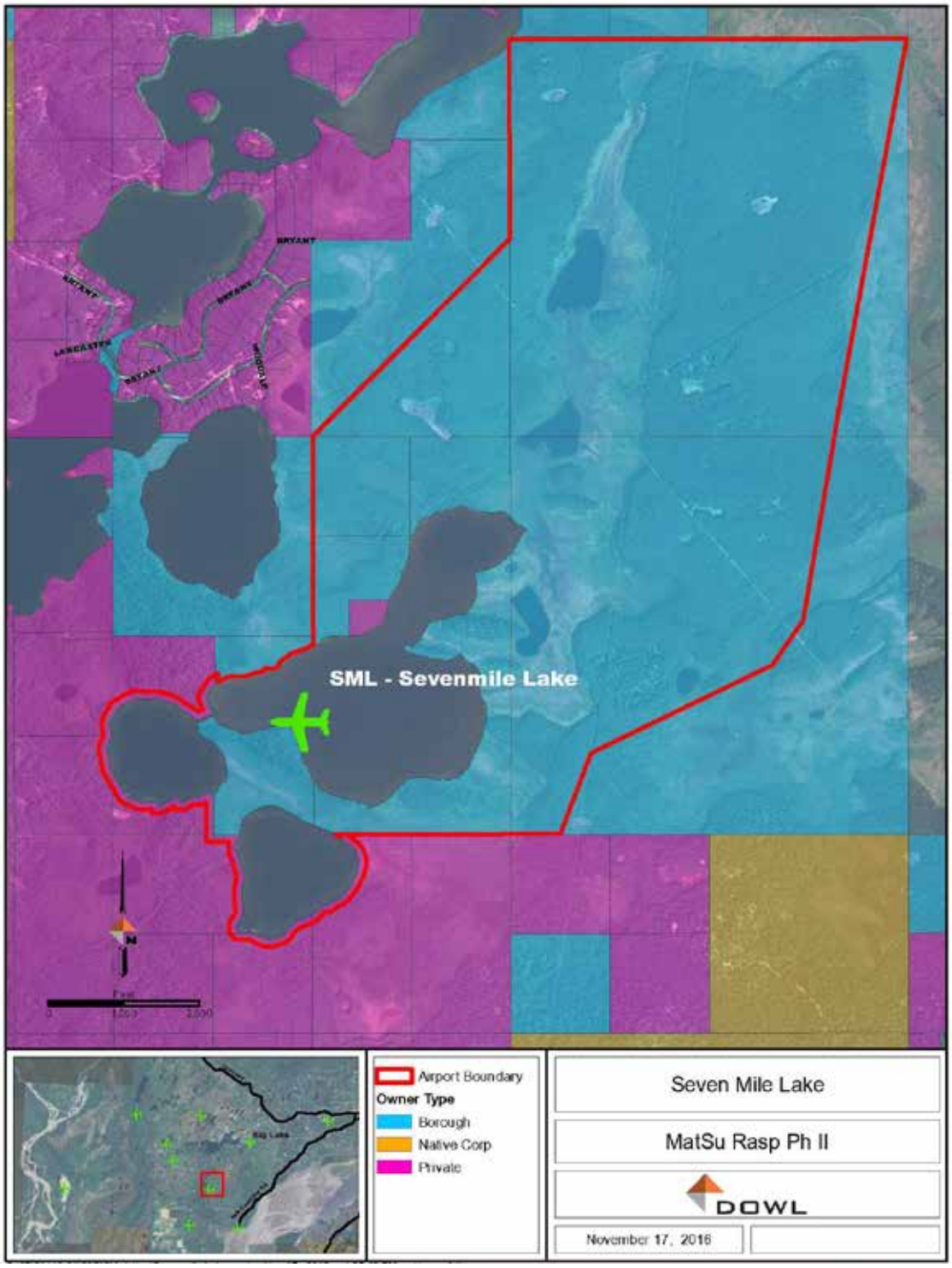


Figure 3.3-5: Sevenmile Lake SPB Property Requirements

3.3.5 Cost Estimates and Implementation Plan

The airport would be constructed in stages as needed to accommodate actual increases in aircraft activity. The cost estimates are summarized below. Detailed cost estimates are provided in Appendix D. The calendar years indicated in the forecast are for planning purposes only. Once the airport is in operation, ongoing aircraft activity should be recorded and the forecast and construction schedule updated every three to five years.

Initial Buildout (2020)

Construction of the minimal initial facility is estimated to cost approximately $27.4 million, not including the cost of acquiring 29.63 acres of private property. This provides the following:

- Extension of an off-airport gravel access road and utilities to airport site
- On-airport gravel access roads and utilities
- 200-foot by 3,700-foot waterlane
- dredged taxi channel
- 14 slips
  - 11 based slips
  - 4 transient slips
- gravel taxi lanes to/from an aircraft parking apron
- 3-acre gravel aircraft parking apron
- 4-acre commercial lease lot area
- 1.6 acres terminal and maintenance facility space

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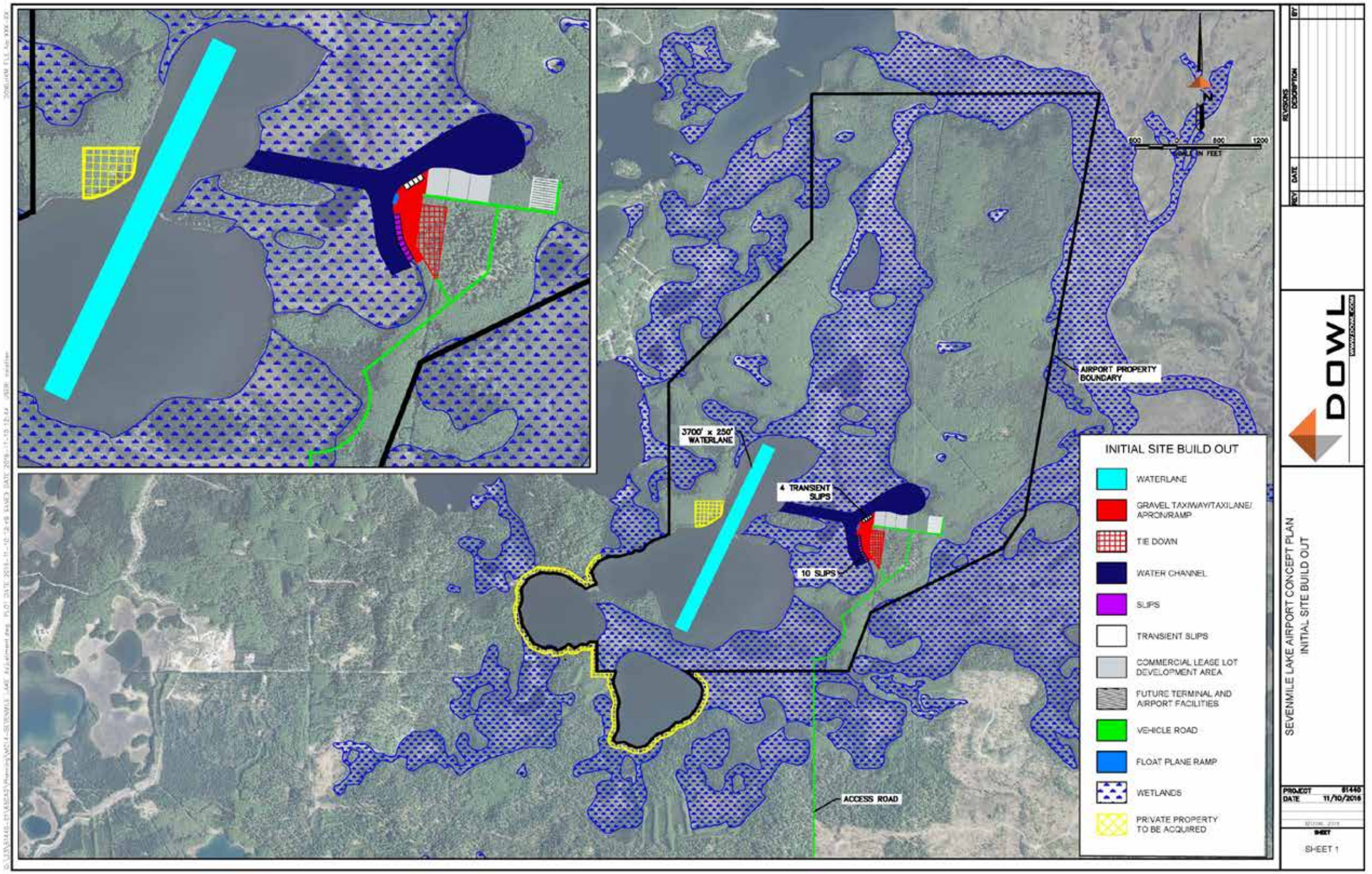

Figure 3.3-6: Initial Site Build Out

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Near-Term Buildout (est. 2025)

An increase in aircraft activity to approximately 18,000 operations would trigger the near-term buildout, estimated to cost an additional $30.8 million, for a total capital investment of $58.3 million. This provides:

- 3,300-foot by 60-foot wide gravel runway with a corresponding partial parallel gravel taxiway
- additional gravel apron space and tie downs
- additional commercial lease lot space for development
- an additional 40-foot x 60-foot Snow Removal Equipment Building (SREB) with office space and bathrooms
- additional on-airport gravel roadways
- 14 additional slips
  - 28 Total
    - 20 Based
    - 8 Transient
- additional taxi channels and taxiway

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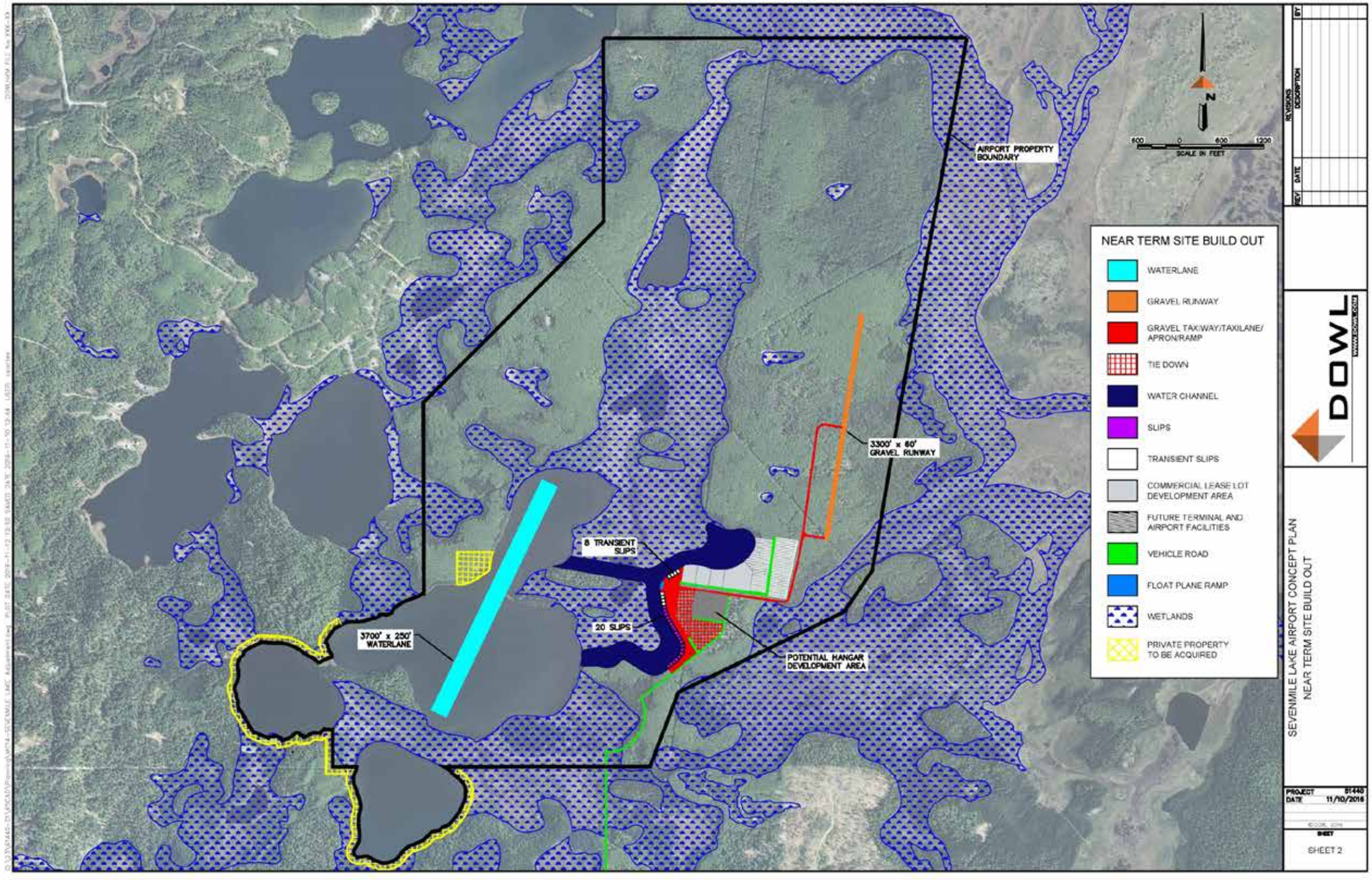

Figure 3.3-7: Near-Term Site Build Out (2025)

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Mid-Term Buildout (est. 2030)

An increase in aircraft activity to approximately 34,663 operations would trigger the Mid-Term buildout, estimated to cost an additional $18.3 million, for a total capital investment of $76.6 million. This consists of:

- 18 additional slips
  - 46 Total
    - 33 Based
    - 13 Transient
- 3.12 additional acreage of tie-down space
- Expanded vehicle roads and taxiways for more access to commercial development lots
- One additional floatplane ramp

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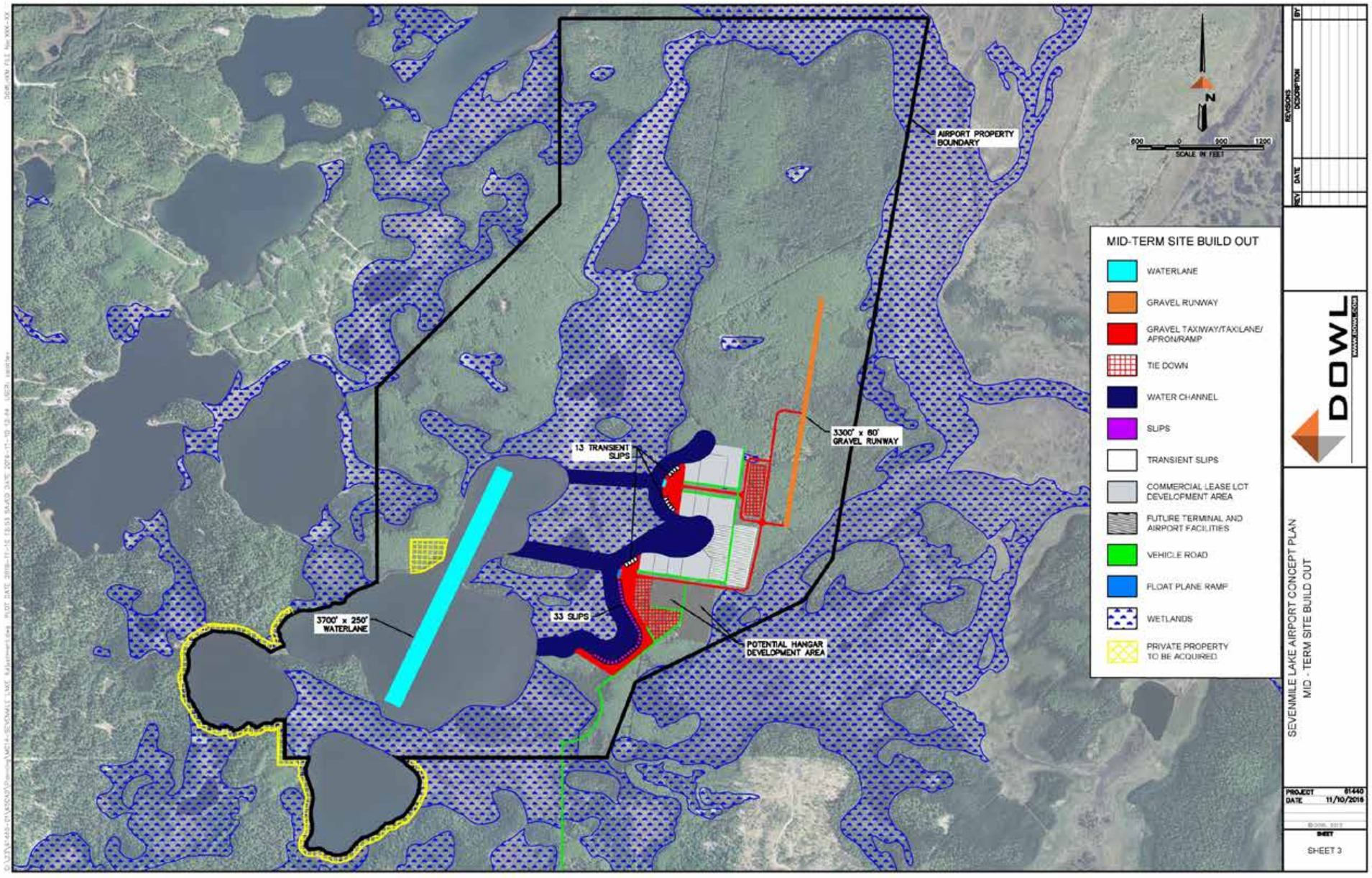

Figure 3.3-8: Mid-Term Site Build Out (2030)

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Long-Term Buildout (est. 2040)

An increase in aircraft activity to approximately 40,640 operations would trigger the Long-Term buildout, estimated to cost an additional $54.5 million, for a total capital investment of $131.1 million. This consists of:

- Constructing a 5,000-foot x 100-foot paved asphalt runway
- Relocating gravel runway
- Expanding the waterlane to 5,000-foot x 200-foot
- 9 additional slips
  - 55 Total
    - 39 Based
    - 16 Transient
- Paving taxiway surfaces
- Paving vehicle road accesses
- Additional 90-foot x 120-foot SREB with office and bathrooms

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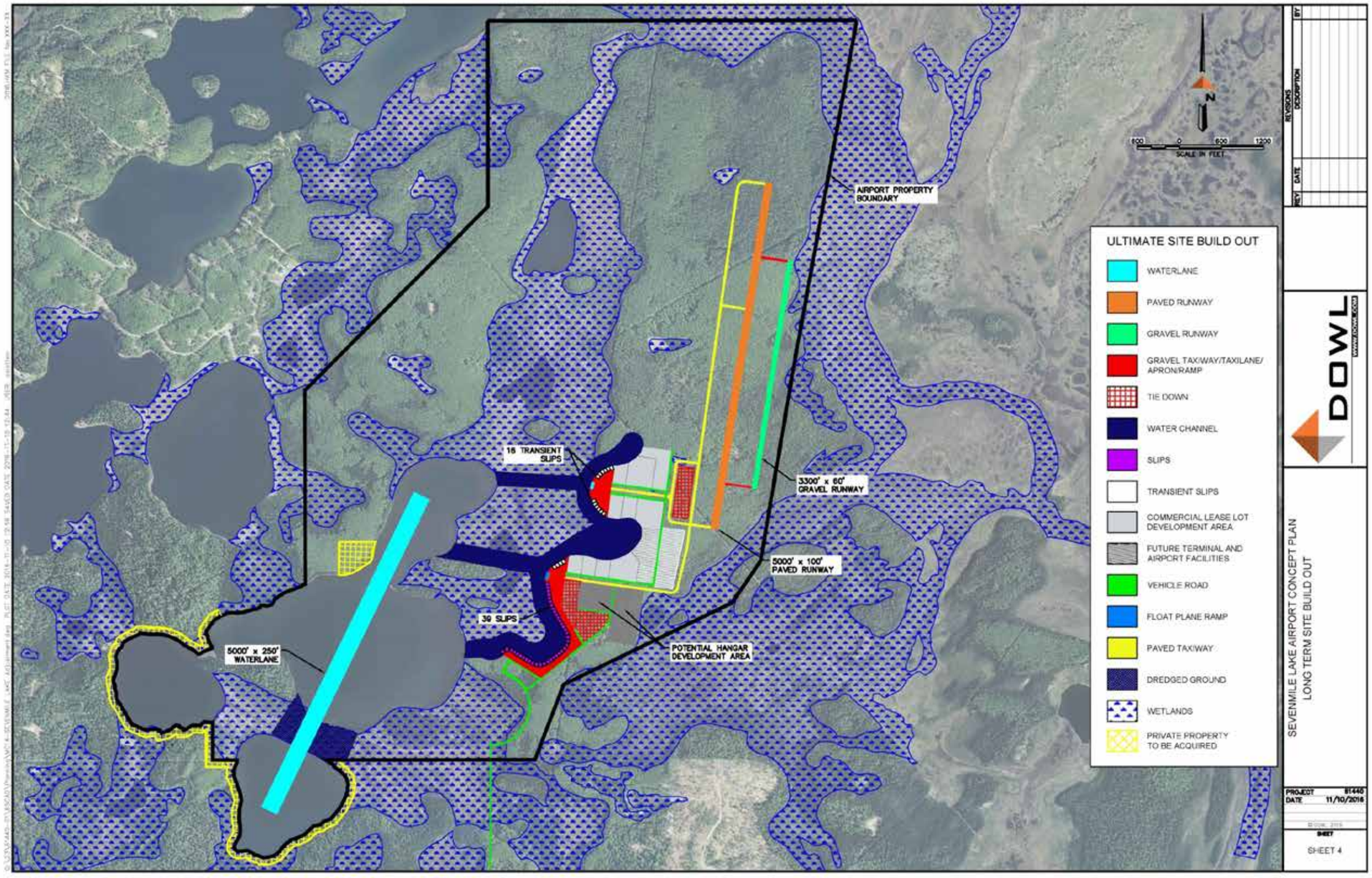

Figure 3.3-9: Long-Term Site Build Out (2040)

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3.4 Airport Operating Costs & Revenue Projections

3.4.1 Forecasted Operating Costs

The following is a recommendation of equipment, staffing, maintenance costs, etc. for the maintenance and operation of the Sevenmile Airport at varying stages of development. These scenarios are based on assumption that the airport is operated as an independent entity, i.e. not as part of a municipal or State government. This information is based upon DOT&PF data as well as experience and firsthand knowledge of airport operations and maintenance from various airports in Alaska and the continental United States.

Equipment

This analysis assumes that all maintenance equipment would be housed on-site for the exclusive use of this facility. As such, most pieces of large equipment would be eligible for purchase using Airport Improvement Program (AIP) grants. There may be other options for funding and utilizing shared equipment if the airport is not operated as an independent entity. For example, equipment could be shared between airport and off-airport road maintenance operations if the airport is municipally owned. However, any equipment purchased with FAA Airport Improvement Funds must be used for its purpose as established under all applicable grant assurances (i.e., airport-only use).

Table 3.4-1: Initial (2020) Equipment Purchase Costs[6]

Mower/Brush Cutter	$ 80,000
Small Power Boat	$ 20,000
Road Grader	$300,000
Pickup Truck w/Front Plow and Sand Spreader	$ 80,000
Snow Groomer (tow)	$ 30,000
Initial Equipment Costs	**$510,000**

[6] Equipment costs are estimates based on current State Equipment Fleet/AIP data for new equipment.

Table 3.4-2:Near-Term (2025) Equipment Purchase Costs

Front End Loader	$ 280,000
Quick Disconnect Snow Blower (Loader Mount)	$ 170,000
Pickup Truck	$ 50,000
Roller Compactor (Snow Groomer)	$ 150,000
Truck Mounted Water Tanker	$ 150,000
Near-term Additional Equipment Costs	**$ 800,000**
Cumulative Total Equipment Costs	**$1,310,000**

Mid-Term (2030):

This does not require additional equipment beyond the requirements for the Near-term build. It does require additional staffing.

Long-Term (2040):

Table 3.4-3: Long-Term (2040) Equipment Purchase Costs

Pickup truck	$ 45,000
Plow truck (runway)	$ 290,000
Runway broom (tow)	$ 300,000
Asphalt maintenance equipment, paint and crack sealing machines	$ 100,000
Long-Term Additional Equipment Costs	**$ 735,000**
Cumulative Total Equipment Costs	**$2,045,000**

NON-AIP ELIGIBILE EQUIPMENT

The following equipment is not eligible for AIP funding and would need to be purchased using local funds.

Initial Build (2020)

1. Small Boat For Access to Waterlane
2. Mower/ Brush Cutter
3. Road Grader for Airport Access Roads (may be eligible for snow removal)

Near-Term Build (2025)

4. Water tanker for gravel runway maintenance
5. Roller compactor (this could be an attachment to a grader)

Mid-Term Build (2030)

None.

Long-Term Build (2040)

6. Paint machine
7. Crack sealing machine
8. Additional pickup for summer maintenance activities

Note: If the airport is not operated as a stand-alone enterprise, operating costs could be reduced if airport maintenance duties for the initial, near-term, mid-term and long-term build scenarios were shared by road maintenance crews using equipment and buildings funded by non-AIP sources. AIP-funded resources can be used for the airport only and it is recommended that a maintenance and operations facility/office be available on-site for the management of the airport operations for all build scenarios.

Buildings

To ensure the longevity of equipment and shorten response time, a SREB should be constructed onsite to house equipment for snow removal and grooming of the airport's surfaces. The SREB could also serve as an office location for the Airport Manager and/or Airport Staff. This will aid staff in responding to emergencies and provide airport users accessibility to staff during business hours. If used for airport-only equipment storage, construction of the building would also be an AIP-eligible expense.

Initial Build (2020):

Single Bay SREB:

- 20-foot x 60-foot with a small office and bathroom @ $400.00 per square feet.
- Design cost and Construction Administration costs should be an additional 15 percent factored into the cost.

Table 3.4-4: Initial Building Costs

20’ X 60’ building w/office and bathroom	$480,000
Design cost @ 15%	$ 72,000
Construction Administration Costs @ 15%	$ 72,000
Initial Building Costs	**$624,000**

Near-Term (2025):

Two Bay SREB:

- 40-foot x 60-foot building with small office and bathroom @ $400.00 per square feet.
- Design cost and Construction Administration costs should be an additional 15 percent factored into the cost.

Table 3.4-5: Additional Near-Term Building Costs

40’ X 60’ building w/office and bathroom	$ 960,000
Design cost @ 15%	$ 144,000
Construction Administration Costs @ 15%	$ 144,000
Near-Term Additional Building Costs	**$1,248,000**
Cumulative Building Costs	**$1,872,000**

Mid-Term (2030):

This does not require additional buildings beyond the requirements for the Near-Term Build. It does, however, require additional staffing.

Long-Term (2040):

Four Bay SREB:

- 90-foot x 120-foot building with small office and bathroom @ $400.00 per square feet.
- Design cost and Construction Administration costs should be an additional 15 percent factored into the cost.

Table 3.4-6: Additional Long-Term Building Costs

90’ X 120’ building w/office and bathroom	$4,320,000
Design cost @ 15%	$ 648,000
Construction Administration Costs @ 15%	$ 648,000
Long-Term Additional Building Costs (estimate)	**$5,616,000**
Cumulative Building Costs (estimate)	**$7,488,000**

Labor

Initial (2020):

Operation of the initial airport should have the equivalent of two full time staff available. These positions will be needed for various duties such as daily inspections, airport equipment repair, maintenance, snow removal and administrative and clerical tasks. One of the staff will be categorized as an Airport Manager and compensated similar to a State employee at a wage 52 with a step C rate ($27/hr). The Operator staff will be compensated at a State employee wage 53 with a step C rate ($25.29/hr).

Note: The duties of these positions could be absorbed by existing employees in various Mat Su Borough departments. However, this report assumes dedicated employees only.

Table 3.4-7: Initial Annual Employee - Fully Loaded Costs[7]

Airport Manager / Operator	$106,000
Operator	$ 99,000
Complete Initial Build Labor Costs (estimate)	**$205,000**

Near-Term (2025):

Due to the increased size of the facility and greater level of aircraft activity, extra staff will be required to maintain and operate the airport.

Table 3.4-8: Near-Term Annual Employee - Fully Loaded Costs

Airport Manager / Operator	$106,000
Two Operators	$198,000
Near-Term Labor Costs	**$304,000**

[7] Labor rates are based on a state multiplier of 1.8 times the base rate to adjust for benefits.

Mid-Term (2030):

The further increase in aircraft activity will require the airport to be maintained for more hours and to have the ability to provide additional snow removal effort in the winter.

Table 3.4-9:Annual Employee - Fully Loaded Costs

Airport Manager / Operator	$106,000
Three Operators	$297,000
Mid-Term Labor Costs	**$403,000**

Long-Term (2040):

The labor needed for this buildout is based on an 8-hour day for seven days a week. The increase in size and operations of the airport will need to adjust the pay of all the employees because of increased responsibility and duties.

Table 3.4-10: Additional Annual Employee Fully Loaded Costs

Existing Airport Manager (1) (grade increase)	$124,000
Existing Operators (3) (grade increase)	$315,000
Additional Operator	$105,000
Long-Term Labor Costs	**$544,000**

Operational Maintenance

The operational budget is based on the equipment listed and for maintaining the entire airport access road from its intersection with Burma Road to the airport – approximately two miles.

The budget is broken out into annual costs and was based on various DOT&PF owned and operated airports of similar size. Operational costs for equipment may be higher or lower depending on the age of equipment, usage, and other factors. The costs in the equipment operating maintenance section do not include fuel and wear items (i.e. cutting edges, blades, etc.).

Initial (2020):

Table 3.4-11: Initial Operational Maintenance Costs (Annual)[8]

Equipment Operating Maintenance	
Mower/Brush Cutter	$ 2,400
Small Power Boat	$ 360
Road Grader	$ 6,000
Pickup Truck with Front Plow and Sand Spreader	$ 1,800
Snow Groomer (tow)	$ 600
Building Maintenance	
SREB Maintenance	$ 3,600
Lighting Maintenance	
Lighting Parts, Bulbs and Consumables	$ 1,200
Miscellaneous	
Miscellaneous parts, signs, rentals, etc.	$25,000
Utilities	
Electrical Utility Usage	$ 6,000
Heating Oil	$ 2,200
Equipment Fuel	$30,000
Initial Maintenance Costs	**$79,160**

[8] This is based on DOT&PF annual costs averaged over a 3 year period.

Near-Term (2025):

Table 3.4-12: Total Operational Maintenance Costs (Annual)[9] [10]

Equipment Maintenance Budget	
Mower/Brush Cutter	$ 2,400
Small Power Boat	$ 360
Road Grader	$ 9,000
Pickup Truck with Front Plow and Sand Spreader	$ 2,700
Snow Groomer (Vehicle)	$ 600
Front End Loader	$ 2,400
Quick Disconnect Snow Blower (Loader Mount)	$ 5,000
Truck Mounted Water Tanker	$ 2,000
Building Maintenance	
SREB Maintenance	$ 5,400
Lighting Maintenance	
Lighting Parts, Bulbs and Consumables	$ 2,400
Miscellaneous	
Miscellaneous parts, signs, rentals, etc.	$ 25,000
Utilities	
Electrical Utility Usage	$ 12,000
Heating Oil	$ 2,200
Equipment Fuel	$ 39,000
Near-term Operating Costs	**$110,460**

Mid-Term Build (2030):

Table 3.4-13: Total Operational Maintenance Costs (Annual)[11] [12]

Equipment Maintenance Budget (20% increase for additional usage)	
Mower/Brush Cutter	$ 2,880
Small Power Boat	$ 432
Road Grader	$ 10,800
Pickup Truck with Front Plow and Sand Spreader	$ 3,240
Snow Groomer (Vehicle)	$ 720
Front End Loader	$ 2,880
Quick Disconnect Snow Blower (Loader Mount)	$ 6,000
Truck Mounted Water Tanker	$ 2,400
Building Maintenance	
SREB Maintenance	$ 3,600
Lighting Maintenance	
Lighting Parts, Bulbs and Consumables	$ 1,200
Miscellaneous	
Miscellaneous parts, signs, rentals, etc.	$ 25,000

[9] This is based on DOT&PF annual costs averaged over a 3 year period.

[10] Includes previous build maintenance costs.

[11] This is based on DOT&PF annual costs averaged over a 3 year period.

[12] Includes previous build maintenance costs.

Utilities	
Electrical Utility Usage	$ 12,000
Heating Oil	$ 1,200
Equipment Fuel	$ 46,800
Mid-term Operating Costs	**$119,152**

Long-Term (2040):

Table 3.4-14: Total Operational Maintenance Costs (Annual)[13] [14]

Equipment Maintenance Budget	
Mower/Brush Cutter	$ 8,640
Snow Plow Truck	$ 3,500
Broom (tow)	$ 5,000
De-icing Truck	$ 1,500
Small Power Boat	$ 432
Road Grader	$ 32,400
Pickup Truck with Front Plow and Sand Spreader	$ 9,720
(2) Pickup Truck with Front Plow only	$ 3,000
Snow Groomer	$ 2,160
Front End Loader	$ 8,640
Quick Disconnect Snow Blower (Loader Mount)	$ 6,000
Truck Mounted Water Tanker	$ 7,200
Building Maintenance	
SREB Maintenance	$ 16,000
Lighting Maintenance	
Lighting Parts, Bulbs and Consumables	$ 7,200
Miscellaneous	
Miscellaneous parts, signs, rentals, etc.	$100,000
Utilities	
Electrical Utility Usage	$ 36,000
Heating Oil	$ 6,000
Equipment Fuel	$ 65,000
Long-Term Operating Costs	**$318,212**

[13] This is based on DOT&PF annual costs averaged over a 3 year period.

[14] Select equipment maintenance costs multiplied by 3 times the previous rate because of the significant increase in acreage covered.

Table 3.4-15: Operating Costs by Development Stage

	Initial	Near-Term	Mid-Term	Long-Term	Total
Equipment (one-time)	$ 510,000	$ 800,000	$ 0	$ 735,000	**$2,045,000**
Building (one time)	$ 624,000	$1,248,000	$ 0	$5,616,000	**$7,488,000**
Equipment and Building Subtotals	**$1,134,000**	**$2,048,000**	**$ 0**	**$6,351,000**	
Labor (annual)	$ 205,000	$ 304,000	$403,000	$ 544,000	
Maintenance (annual)	$ 79,160	$ 110,460	$119,152	$ 318,212	
Labor and Maintenance Subtotal	**$ 284,160**	**$ 414,460**	**$522,152**	**$ 862,212**	
TOTAL	**$1,418,160**	**$2,462,460**	**$522,152**	**$7,431,212**	

3.4.2 Forecast Airport Use and Operating Revenues Over Time

The purpose of this section is to forecast the revenue that could be generated by the proposed Sevenmile Lake SPB / Seaplane Base.

Parameters & Assumptions

This revenue projection is based, in part, on the aviation activity forecast presented in Section 3.3.3. The Sevenmile Lake SPB would be constructed in stages, with the scope and timing of each stage determined by the rate of growth in aviation demand. The forecast assumes 2020 as the facility opening date with a gradual buildout over 20 years concluding in an operationally mature airport in 2040. The Long-Term airport and SPB would have a 5,000-foot paved runway, 3200-foot gravel runway, and 5000-foot waterlane, together with supporting aprons, taxiways, taxilanes, parking slips, tie-down space, lease lots and access roads. The forecast addresses based aircraft and air traffic, but does not deal with land leasing, which is typically a significant source of revenue for an airport. This revenue projection will include estimates of land leasing activity, based on consultant's experience.

In this study, revenue projections will be presented for five-year intervals, following the sequence used in the forecast (2020, 2025, 2030, 2035 and 2040) encompassing initial facility opening, staged development, and anticipated maximum buildout. Since the rate of inflation over a 20-year period cannot be reliably predicted, the revenue projections will be presented in terms of 2016 dollars without adjustment for possible future inflation.

Fee Structure

At an airport developed primarily for GA use, there are typically three major sources of revenue. Those are, aircraft parking space rental, land leasing, and fuel sales. Although other fees related to such activities as vehicle parking and car rental are sometimes adopted by larger GA airports, they are not anticipated to be involved at Sevenmile Lake during the forecast period. Therefore, in projecting airport revenue, only aircraft parking, land leasing and fuel fees will be considered as revenue sources.

Aircraft Parking Fees

Transient Parking: Aircraft parking generally takes two forms at GA airports, short-term or transient parking and long-term parking. Transient parking fees for light single engine aircraft are typically charged on a per-day basis, using a flat rate. For example, the transient parking fee charged by the state at the Willow and Big Lake Airports are $4.00 per day for aircraft under 6,000 pounds certificated maximum gross take-off weight (CMGTW). Transient fees for larger aircraft vary considerably from airport to airport. Some are based on wing span; others on CMGTW. Typically, transient parking fees are not charged at lower traffic airports because the cost of collection can exceed the revenue produced. At higher traffic GA airports, transient parking fees typically do not generate more than about five percent of the revenue produced by long-term aircraft parking. Therefore, in the projections, we will assume that transient parking will be free through 2030. For the 2035 and 2040 projections we will assume that the fees will be charged and will produce five percent as much revenue as long-term aircraft parking.

Long-term Aircraft Parking: Commonly referred to “tie-down space” rental, long-term parking space rental for light aircraft consists of the rental of a designated parking space, usually for the exclusive use of an aircraft owner. Typically, long-term parking is offered on a permit basis with rent payable monthly, quarterly, or annually, often with modest discounts allowed for longer payment periods. For the purpose of this study, all aircraft space rental fees will be presented in terms of annual rent. The following is a summary of existing parking fees at representative airports in the region:

State Rural Airports (Birchwood, Big Lake, Willow):

Paved, taxi-through	$540.00
Paved, tail-in	$420.00
Gravel, taxi-through	$480.00
Gravel, tail-in	$360.00
With electricity, add	$120.00

MRI:

Paved, taxi-through	$840.00
Paved, tail-in	$720.00
With electricity, add	$180.00

Palmer Municipal Airport:

All light aircraft spaces	$257.50

ANC:

Paved, taxi-through	$720.00
Paved, tail-in	$600.00

Wasilla Municipal Airport:

All light aircraft spaces	$255.00
With electricity, add	$153.00

The fees charged at the state-owned airports represent a midpoint in the range of fees, so those rates will be applied to the Sevenmile projections.

Floatplane Slip Rental:

Establishing a reasonable floatplane slip rental rate for the projections is a more challenging due to the scarcity of publically operated SPBs in the region. Here are some representative slip rental fees:

ANC (Lake Hood/Lake Spenard) $1,260/year

Kenai Municipal Airport (SPB):

Non-Commercial	$ 360/year
Commercial	$ 450/year

State-owned Rural Airports (standardized statewide fee) ..... $ 360/year

The Lake Hood/Lake Spenard complex is a high demand facility with a multiple-year waiting list of applicants for floatplane slips, which partially explains the substantially higher rent. The fees charged at Kenai appear to be closer to the realities of a SPB at Sevenmile Lake. Since the commercial vs. non-commercial distinction couldn't be applied to the available forecast information, it is reasonable to choose a midpoint between the two charges. For the purpose of this revenue projection, $400/year will be used as the slip rental rate for Sevenmile Lake.

Land Leasing

Lease Lot Size: Since an airport at Sevenmile Lake is unlikely to be served by public water and sewer services during the 20-year projection period, onsite sewer and water must be assumed for land leases. Typically, a lot of 40,000 square feet is required for onsite sewer and water systems to be approved. Although, larger properties are being leased at major airports around Alaska, 40,000 square feet is a reasonable lot size to support a commercial hangar operation or multi-bay aircraft storage hangar. For this projection, 40,000 square feet will be used as the typical lease lot.

Land Rent: The rent charged for leasing land on an airport can be a highly variable subject influenced by the presence or absence of road access, soil conditions, aircraft access to runways and taxiways, and other conditions. However, for the purpose of this analysis, it is necessary to establish a single rental rate on which to base revenue estimates. Existing land rental rates charged for aeronautical use land at other publically operated airports in the region range from $0.06 per square foot per year (Wasilla) to $0.51 (Palmer). Recent state airport appraisals in the region indicate aeronautical land rental values for "building ready" lots of $0.059 to $0.32 per square foot per year. Land values at Sevenmile Lake, at least initially, are likely to be lower than established airports due the unknowns about air traffic volumes, based aircraft population, business potential, and similar factors. Until the airport reaches a level of development maturity and traffic stability, land rental values would likely fall into the lower range of rental values. An annual rate of $0.15 per square foot is a reasonably conservative figure to use as the land rental rate for the purpose of this projection.

Fuel Sales Revenue

Fuel Volume: Revenue from aviation fuel sales is not anticipated to be significant during the first five years of Sevenmile Lake SPBs development, due to low traffic levels. Therefore, no fuel revenues are forecast for Years 2020 and 2025. To estimate the aviation fuel volume that might be expected, we looked at Palmer and Wasilla Municipal Airports, which are similar to the proposed Sevenmile Lake SPB in terms of annual operations and facility size. With 79 based aircraft and a 3700-foot runway, Wasilla dispenses approximately 60,000 gallons of aviation fuel per year. With 112 based aircraft and a main runway 6009 feet long, Palmer dispenses approximately 85,000 gallons. Although both airports have somewhat more annual aircraft operations than the 2040 forecast for Sevenmile Lake SPB and neither have a SPB, they are sufficiently similar to be useful in developing a fuel volume estimate for Sevenmile Lake. Palmer has apron, runway and taxiway facilities similar to those projected for Sevenmile Lake in 2040. However, Wasilla is probably closer in terms of the kinds of aircraft based and operating (predominately light, single engine). Therefore, we will use 60,000 gallons as the annual fuel volume for Sevenmile Lake SPB at 2040. From that point and progressing backward, the annual volume will be reduced by 20 percent per 5-year period, similar to the decline in base aircraft. Therefore, each 5-year increment in the projection, the estimated fuel volume will be:

2040: 60,000 gallons

2035: 48,000 gallons

2030: 38,400 gallons

2025: Negligible

2020: Negligible.

Fuel Fee: Although some GA airport operators directly operate the fueling service and retain the profit as airport revenue and others require the fuel distributor to pay a sales tax on fuel sales, by far the most common fuel fee arrangement is the fuel flowage fee. The flowage fee is usually a fixed amount per gallon that the fuel dealer pays the airport operator. Here are the fuel flowage fees charged by public airports in the region:

State Rural Airports (Birchwood, Big Lake, Willow) $0.025/gallon
MRI ..... $ 0.08/gallon
Kenai Municipal Airport ..... $ 0.02/gallon
Palmer Municipal Airport ..... No fuel flowage fee, charges at 3% sales tax only

ANC (aircraft under 12,500 lbs CMGTW)..... $0.027/gallon
Wasilla Municipal Airport ..... Doesn't charge a fee on fuel

Excluding MRI, the existing flowage fees in the region are fairly close together. It appears reasonable to use $0.025 as the flowage fee for the purpose of projecting fuel fee revenue at Sevenmile Lake SPB.

Revenue Projections

The following projections assume 12 full months of revenue generation for each year listed. All wheel plane space rentals are assumed to be gravel surface and tail-in configuration through 2030. Thereafter, 25 percent will be assumed to be paved taxi-through, 25 percent paved tail-in, and 50 percent gravel, tail-in. Aircraft data is from the aircraft activity forecast, High Growth estimate.

Table 3.4-16: Revenue Projections

Initial Build (2020):	
8 floatplane slips @ $400	$ 3,200
7 wheel plane parking spaces (gravel, tail-in) @ $360	$ 2,520
Transient parking (5% of float + wheel plane parking)	$ 286
Fuel flowage fee	$ 0
2 lease lots of 40,000 square feet each @ $0.15 / sq. ft.	$12,000
Year Total	**$18,006**
Near-Term (2025):	
20 floatplane slips @ $400	$ 8,000
14 wheel plane parking spaces (gravel, tail-in) @ $360	$ 5,040
Transient parking (5% of float + wheel plane parking)	$ 652
Fuel flowage fee	$ 0
4 lease lots of 40,000 square feet each @ $0.15 / sq. ft.	$24,000
Year Total	**$37,692**
Mid-Term (2030):	
27 floatplane slips @ $400	$10,800
19 wheel plane parking spaces (gravel, tail-in) @ $360	$ 6,840
Transient parking (5% of float + wheel plane parking)	$ 882
Fuel flowage fee (38,400 gallons x $0.025)	$ 960
6 lease lots of 40,000 square feet each @ $0.15 / sq. ft.	$36,000
Year Total	**$55,482**

The following forecasts assume that about 20 percent of based wheeled aircraft will be parked in hangars. Therefore, only 80 percent of based wheel planes are assumed to occupy airport-managed parking spaces.

Long-Term (2040):

39 floatplane slips @ $400.....$15,600
6 wheel plane parking spaces (paved, taxi-through) @ $540.....$ 3,240
5 wheel plane parking spaces (paved, tail-in) @$420.....$ 2,100
11 wheel plane parking spaces (gravel tail-in) @ $360.....$ 3,960
Transient parking (5% of float + wheel plane parking).....$ 1,065
Fuel flowage fee (60,000 gallons x $0.025).....$ 1,500
10 lease lots of 40,000 square feet each @ $0.15/square feet.....$60,000
Year Total.....$87,465

Table 3.4-17 compares projected revenue to annual operating costs. Significant deficits are anticipated throughout the 20-year projection period.

Table 3.4-17: Comparison of Projected Annual Revenue and Annual Operating Cost by Development Stage

	2020	2025	2030	2040
Operating Revenue	$ 18,006	$ 37,692	$ 55,482	$ 87,465
Operating Cost	$284,160	$414,460	$522,152	$862,212
Deficit	-$266,154	-$376,768	-$466,670	-$774,747

3.5 Capital and Operating Funding Sources and Ownership Alternatives

The purpose of this section is to explore alternatives for the ownership and operation of the proposed Sevenmile Lake SPB, and to identify the alternatives that appear most likely to succeed. The analysis will also include a briefing on the requirements of FAA's AIP.

Broad Categories of Airport Ownership & Operation

In the United States, public airports are generally owned and operated by Government (state, local, or a consortium), Quasi-Government (airport authority) and, less commonly, a Private Entity (for-profit corporation, non-profit corporation, partnership, individual). Combinations of these alternatives also operate airports. Regarding the proposed Sevenmile Lake SPB, possible owner/operators arrangements include:

Government:

- State of Alaska, Department of Transportation & Public Facilities (DOT&PF), or
- MSB, or

- a future city that encloses the airport within its municipal boundaries, or
- a consortium of government entities.

Quasi-Government:

- an airport authority set up by the State of Alaska or the MSB for the purpose of building and/or operating the Sevenmile Airport, alone or in combination with other publically-owned airports within the MSB.

Private Sector:

- a for-profit corporation (fixed base operator, Native Corporation, etc.), or
- non-profit organization involving airport users and other stakeholders (airport association, non-profit corporation, etc.).

Combination:

- DOT&PF – MSB partnership, or
- Public-Private partnership.

Owner/Operator Requirements

For any owner/operator arrangement to satisfactorily develop and successfully operate the proposed Sevenmile facility, the entity(ies) must:

- Have, or be able to rapidly acquire, institutional and staff knowledge of airport development and operations;
- Qualify as an airport sponsor to obtain AIP grant funds from the FAA
- Have substantial capital and / or access to public funds to cover:
  - the matching funds required for FAA grants;
  - the construction/acquisition of equipment/improvements not eligible for FAA grants; and
  - the difference between airport operating costs and airport revenue.

AIP Grant Qualifications

To qualify for AIP grant funding, an airport must be open for use by the public and be:

- owned by a public entity; or
- privately owned but designated by the FAA as a reliever airport; or
- privately owned but having scheduled air service and at least 2,500 enplanements per year; and
- listed in the National Plan of Integrated Airport Systems (NPIAS)

It appears that the proposed Sevenmile Lake SPB would qualify for NPIAS listing as a GA Airport, in spite of the fact that it would be within 30 minutes driving time from the Big Lake and Goose Bay Airports, both of which are NPIAS listed airports. The documented need for a public SPB in the South MSB area and the forecast of more than 10 based aircraft should offset Sevenmile's near proximity to other NPIAS airports.

To qualify to receive an AIP grant, an airport owner / operator must:

- be legally, financially, and otherwise able to assume and carry out the certifications, representations, warranties, assurances, covenants and other obligations of the AIP program;
- have the legal authority to act as an AIP grant sponsor; and
- hold fee title or other FAA-approved interest in the land on which the airport is located (AIP grant funds can be used to acquire real estate)

Owner/Operator Financial Considerations

Given the Sevenmile Lake SPB forecasts for slow growth in based aircraft, aircraft operations, and airport revenue, it is unlikely that the facility can be operated on a 100 percent financially self-sustaining basis during the 2020-2040 development period (see Table 3.4-17). Post-2040, with the completion of full build-out, the economic inertia of a mature facility would be more likely make it possible to achieve cost/revenue breakeven. However, during the initial 20-year

development period, the airport operator will have to provide the funds necessary to make up the difference between facility operating costs and facility revenue.

Government Owner / Operator

Since the proposed Sevenmile Lake SPB does not fall within the municipal limits of an existing city, the only governmental candidates for possible ownership and operation are the State of Alaska and the MSB, or a consortium of the two.

State of Alaska: The DOT&PF currently operates the State's 247 rural airports and the international airports at Anchorage and Fairbanks. It is qualified to receive AIP grant funds and has the institutional expertise to develop and operate a facility like the proposed Sevenmile Lake SPB.

MSB: Although the MSB does not currently operate airports, the MSB could acquire the legal authority and operational expertise to become an airport owner.

Airport Consortium: A third alternative for government ownership/operation of an airport is a consortium of government and/or quasi-government entities that formally come together for the purpose of sharing the benefits and liabilities of operating an airport. Typically, all parties to a consortium have an equal say in making airport-related decisions. For a consortium arrangement to work well, all the parties involved need to be roughly equal in the resources (expertise, financing, etc.) they are able to commit to the airport.

One example of the consortium-type arrangement is the Moscow-Pullman Airport Board, which operates the Moscow-Pullman Regional Airport in Washington State. The board is made up of the Cities of Pullman, Washington and Moscow, Idaho, the counties of Latah, Idaho and Whitman, Washington (represented by the Port of Whitman County), the University of Idaho, and Washington State University. The board hires the airport manager and approves the airport's capital and operating budgets. The six entities share equally all airport costs that are not recovered from airport revenue.

In the United States, the most common form of the consortium approach is a city and county combination wherein the two local governments jointly own and operate an airport, and share costs not recovered through airport revenue.

Advantages of Government Ownership & Operation: The advantage of a government owner/operator for the proposed airport is that a government entity would have access to public funds to cover the difference between airport costs and revenue during the initial 20-year facility development period. In addition, a government agency owner/operator can use their existing accounting, engineering, and maintenance branches to support the proposed airport.

Quasi-Government Owner/Operator (Airport Authority)

Currently, there are no airport authorities operating in Alaska. In the Lower 48 states, airport authorities are typically established to operate large airports or a group of airports. However, there are some cases of airport authorities operating regional commuter airports similar in size to Sevenmile Lake SPB at full build-out. An airport authority could be established by the State of Alaska or the MSB for the purpose of building and/or operating the Sevenmile Lake SPB. Such an authority could be set up to own and operate Sevenmile Lake SPB, alone, or be expanded to encompass other publically-owned airports within the MSB. Typically, airport authorities are established with an objective, if not a legal obligation, to operate the airport or airports under their jurisdiction on a self-sustaining basis. However, in the case of an authority established for Sevenmile Lake SPB, some kind of subsidy from public funds would be necessary cover the difference between operating costs and airport revenue, at least during the initial 20-year development period.

Advantages of a Quasi-Government Owner/Operator: Unlike a government agency owner/operator which must divide its attention among multiple facilities and other public duties, an airport authority would have the advantage of a specialty focus on making Sevenmile Lake SPB a success. Typically, an airport authority is organized around a board of directors with diverse backgrounds, including aviation, banking, local government, real estate, law, and similar fields. This diversity of leadership allows an airport authority to take advantage of finance and development opportunities that might otherwise be missed by a government agency operator.

Private Sector Owner/Operator

Any discussion regarding the potential for the ownership and operation of public airport at Sevenmile Lake must be considered largely theoretical in nature. It is anticipated that AIP grant funds will be necessary to complete the development of the airport. A *privately owned* public airport can qualify for AIP grant funding *only* if the airport is designated by the FAA as a reliever airport (not applicable to Sevenmile in the foreseeable future) or has scheduled air service and at least 2,500 enplanements per year. Sevenmile Lake SPB is forecast to have air taxi operations and annual enplanements of 3,380 by 2025. However, it is unlikely that scheduled air service will happen much before the end of the initial 20-year development period. Once a substantial runway is completed and instrument approaches become available, it's possible to envision an executive air service operating on a scheduled basis between Sevenmile Lake SPB and Anchorage. However, until scheduled traffic becomes a reality, Sevenmile Lake SPB would not qualify for AIP funding as a privately owned public airport.

Alternatives for private sector airport ownership and operation include a for-profit corporation, non-profit organization, partnership, and individual. However, given the size of the Sevenmile Lake SPB development and the financial commitment necessary to build and operate the facility, the latter two alternatives are not practical options.

For-Profit Corporation: A for-profit corporation, including a Regional Native Corporation, is an unlikely alternative as the sole owner/operator of a Sevenmile Lake SPB because, even with private sector efficiencies, the airport's costs are likely to significantly exceed revenue throughout the initial 20-year development period. An investment that produces 20 years of financial loss is not the kind most for-profit corporations would be interested in taking on. Post-2040, a for-profit corporation might find sufficient profit potential in the completed facility to justify the investment required to own and operate the airport.

Non-Profit Organization: A non-profit corporation or an airport association may be the best *private sector* alternative for ownership and operation of Sevenmile Lake SPB because producing a profit on investment wouldn't be necessary. However, a non-profit corporation or airport association would still have to obtain funds to make up the difference between airport costs and revenue during at least the initial 20-year development period. An airport non-profit

corporation would function in essentially the same way as other non-profits that build and operate museums, zoos, art centers, and other public facilities.

An airport association is usually organized in a manner similar to a homeowners association or condominium association where the members share the expenses of developing and operating common facilities. Usually the members are based aircraft owners and/or adjoining property owners. Airport associations are commonly found in the development and operation of private airports, but they are rare among larger public airports of the type contemplated for Sevenmile Lake SPBs Long-Term buildout.

Advantages of a Private Sector Owner/Operator: The advantages of a private sector airport operation include greater operating efficiencies and tighter aviation focus for airport development. However, as explained in the opening paragraph of this section, private sector ownership of Sevenmile Lake SPB is not a viable option because of the lack of access to AIP grant funds for developing the airport.

Combination Ownership/Operation

There are numerous potential alternatives for combination airport ownership/operation arrangements. However, the combinations that appear to be most applicable to Sevenmile Lake SPB are: a DOT&PF/MSB Airport Consortium; DOT&PF ownership – MSB operation; Airport Authority ownership & operation; DOT&PF or MSB ownership – airport authority operation; and Public-Private partnership.

DOT&PF/MSB Airport Consortium: A consortium arrangement involving DOT&PF and the MSB could be established for the ownership and operation of the Sevenmile facility. Typically, airport consortium members share equally in the obligations, personnel, financial participation, and decision-making involved with an airport. However, in the case of a DOT&PF/MSB consortium, the state agency's resources are so much greater than those of the MSB that it may not be possible to arrange a 50%/50% partnership for the development and operation of Sevenmile Lake SPB. Adopting a consortium organization based on a more resource-proportional basis, such as 80%/20% (DOT&PF/MSB), would better reflect the potential

contributions of the parties, but it would necessarily assign a minority position to local government and reduce its influence over airport decisions.

Advantages of a DOT&PF/MSB Consortium: The advantages of a consortium arrangement would include the sharing of financial obligations for the airport, accessing the State's lower cost airport/aviation insurance, and assuring direct local influence on airport-related decisions. However, the substantial disparity in resources and airport expertise between DOT&PF and the MSB may make the consortium approach impossible to successfully implement.

DOT&PF ownership – MSB operation: Under this alternative, DOT&PF would acquire the land, design and construct the airport improvements, and serve as the airport sponsor. The MSB would operate and maintain the facility under a contract or lease with DOT&PF. This kind of arrangement has been used successfully for the operation of Ketchikan International Airport for nearly 45 years, with the Ketchikan Gateway Borough serving as the airport operator under a lease from DOT&PF.

Until financial self-sufficiency is achieved, the implementing contract or lease would need to include some kind of an arrangement whereby public funds would be provided by the State to make up the difference between airport costs and airport revenue. At some point after the initial development of the airport, the MSB could take over full ownership of the facility and become the airport sponsor (with FAA approval).

Advantages of DOT&PF ownership – MSB operation: The advantage of this alternative for Sevenmile Lake SPB is that it makes use of DOT&PF's expertise in airport design, construction, and sponsorship, while allowing local control over day-to-day operations.

DOT&PF or MSB ownership – Airport authority operation: This alternative, the owner agency would acquire the land interest for the airport site and initially serve as the AIP sponsor. The owner agency could retain responsibility for developing the airport, while leasing the facility to an authority for daily operations. Alternatively, after acquiring the land, the owner agency could grant a long-term lease of the site to the airport authority, which would take over AIP sponsorship (with FAA approval) and be responsible for both airport development and day-to-day operations.

Whether DOT&PF or the MSB served as the airport owner, the implementing contract or lease with the airport authority would need to include an arrangement whereby the owner agency would provide public funds to cover any difference between airport costs and airport revenue until self-sufficiency is achieved.

Advantages of Owner Agency – Airport Authority Combination: This alternative has the all the advantages of airport authority ownership and operation, plus the advantage of having a government agency that is already an AIP sponsor initiate the land acquisition and development of the airport. The FAA may have reservations about a new, untried airport authority becoming an AIP sponsor. The FAA may more readily approve AIP funding if an existing airport sponsor initiated the project while the authority got organized and demonstrated its ability to successfully operate the airport for a year or two. With a demonstration of satisfactory performance, the FAA would likely approve of the authority as an AIP sponsor.

Public – Private Partnership:

This alternative can take almost any form ranging from a public agency airport owner contracting with the private sector for airport snow removal all the way to contracting for full airport development and operation. Internationally, the classic airport public-private partnership involves a government grant of a long-term concession or lease of an airport to an airport management firm. These arrangements are most common in third world countries where modern airports are desired, but where in-country airport expertise is limited or non-existent. Typically, the government grant allows the contractor wide latitude to develop revenue opportunities and keep the proceeds in exchange for developing and operating runways, terminals and other airport facilities. In its classic form, the public-private partnership necessarily involves large airports with significant traffic levels and large revenue potentials. Smaller airports simply do not have enough revenue potential to attract the interest airport management firms on this basis.

In the case of Sevenmile Lake SPB, the revenue forecast is low, at least during the initial 20-year development period, which eliminates the airport as a candidate for the classic public-private partnership. A more likely form of public-private involvement would be publically-funded contracts for private firms to perform airport design, construction, or maintenance. Once the full build-out of Sevenmile Lake SPB is completed and financial self-sufficiency is achieved or near

at hand, it may be possible to contract with a private sector company to operate and maintain the airport. However, this does not mean that the government owner could completely disengage from the airport. The owner would have to retain AIP sponsorship, as well as ownership of the land, and maintain a level of oversight sufficient to ensure that the management firm complies with the contract and conforms to AIP grant requirements.

Advantages of Public – Private Arrangements: The advantage of private sector involvement in airport-related contracting is a higher level of efficiency and effectiveness than is typically possible with a government agency. The private sector may also provide expertise and/or services that are beyond the capability of the government agency's in-house staff.

Ownership / Operation Recommendations

Several factors limit the choice of options for ownership and operation of Sevenmile Lake SPB, the most significant of which are the slow traffic growth and low airport revenue forecasted for the initial 20-year build-out of the airport. During that period, it is anticipated that airport costs will be significantly higher than revenue, so any owner/operator of the facility will have to contribute funds from other sources to make up the difference between costs and revenue.

An additional limiting consideration is the low likelihood of the airport supporting scheduled air service during the initial 20-year development period. Without scheduled service, AIP funding would not be available to a private sector owner.

These factors virtually eliminate the private sector as an option for ownership of the proposed airport. As a practical matter, the resource imbalance between the State of Alaska and the MSB also eliminates the consortium option. Of the remaining alternatives, the following are the ones most likely to successfully develop and operate the proposed Sevenmile Lake SPB:

1. State of Alaska, as Owner/Operator: As the operator of the largest state airport system in the country, the State of Alaska, DOT&PF has the capability and experience to sponsor, develop and operate the Sevenmile Lake SPB. However, the ongoing state budget challenges may limit DOT&PF's ability to take on a new airport.

2. DOT&PF ownership – MSB operation: DOT&PF would acquire the land, design and construct the airport improvements, and serve as the airport sponsor. The MSB would operate and maintain the facility under a contract or lease with DOT&PF. This kind of arrangement has proven itself at Ketchikan International Airport and could work well for Sevenmile Lake SPB. However, the MSB has not expressed interest in becoming an airport operator.

3. Airport Authority as Owner / Operator: An airport authority established by the State of Alaska or the MSB would bring focused energy and efficiency to the development and operation of the new airport. However, forming an authority, with only a basic staff, for one comparatively small airport may not be cost-effective. Providing for administrative overhead, AIP matching funds, and the difference between airport costs and revenue would require an infusion of money from the State and/or the MSB for most, if not all of the 20-year development period. In addition, there is the challenge of obtaining AIP sponsorship approval from the FAA for a new authority with no airport operating track record.

   A possible solution to the airport authority challenges outlined above would be to provide some experience and economies of scale for a new airport authority by leasing all eight of the State airports in the MSB to the authority for operation, allowing the authority to collect all revenue. The state would likely have to provide funds to make up the difference between airport costs and revenue, but that should be a substantially lower cost to the state than full funding of DOT&PF's operation of the airports. After operating these airports for two or three years, the authority should be able to demonstrate sufficient airport experience and expertise to obtain AIP sponsorship approval from the FAA for the Sevenmile Lake SPB project. The authority would continue to operate all the State airports while it builds and operates Sevenmile Lake SPB, resulting in a nine-airport system. Assuming the achievement of financial self-sufficiency in the airport system by the end of the initial 20-year development of Sevenmile Lake SPB, the authority could assume ownership and sponsorship of the eight State airports, thereby relieving DOT&PF of all financial responsibility for airports within the MSB. However, it may be necessary

for the state, with its power of eminent domain, to serve as the initial sponsor for Sevenmile Lake SPB to the extent of acquiring the necessary land interests.

Of the three ownership/operation alternatives described above, the Airport Authority promises to be the best option because it has the potential of, not only successfully developing and operating Sevenmile Lake SPB, but also ultimately relieving the State of airport responsibilities within the MSB and bringing all eight state airports under more localized control.

AIP Sponsor Assurances

Access to AIP grant funds will be essential for the development of the proposed Sevenmile Lake SPB. To obtain AIP funds, an entity must agree to 39 Airport Sponsor Assurances, which cover such topics as land title preservation, design and construction standards, public access, compatible land use, aircraft fueling rights, accommodation of commercial air carriers, use of airport revenue, and non-aeronautical use of airport land. If AIP funds are used to acquire land interests for the airport site, the assurances run with the land in perpetuity. While AIP funding is a huge benefit for the development of an airport, the assurances do limit the management decision options of the airport sponsor. Any potential airport owner/operator should carefully consider the impact of the assurances on the owner / operators future actions. A copy of the latest (March 2014) Airport Sponsor Assurances is attached to this report as Appendix D.

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APPENDIX A

Public Involvement

DOWL

Office Locations

ALASKA
Anchorage
Juneau
Fairbanks
Ketchikan
Kodiak
Palmer

ARIZONA
Tempe
Tucson

COLORADO
Golden
Gunnison
Montrose

MONTANA
Billings
Bozeman
Butte
Great Falls
Helena
Miles City

NORTH DAKOTA
Dickinson

OREGON
Bend

WASHINGTON
Redmond
Seattle

WYOMING
Gillette
Lander
Laramie
Sheridan

MEMORANDUM

TO: Matanuska-Susitna Borough Aviation Advisory Board

FROM: DOWL

DATE: 8/6/2015

SUBJECT: Matanuska-Susitna Regional Aviation System Plan Phase II Update

Aviation Board Members,

This memo is to serve as an introduction to what we plan to discuss with you in more detail at your August 13th meeting. DOWL's mission is to determine the best place to build a commercial floatplane facility in the Matanuska-Susitna Borough (MSB). We are currently identifying a list of ten sites to present to the Aviation Advisory Board (AAB), and MSB staff. Following the presentation we will evaluate the list of potential sites and reduce to three and then focus on an in depth study of the three sites to determine the best one site and develop a concept plan. To find ten sites that might fit the needs of the Borough, DOWL has put together a preliminary facility requirements table, re-evaluated airports that were dropped from the Phase I study, and developed a list of ten airports for the Aviation Board's consideration.

The study area for this project will start from Willow Airport and look south to the central and southern MSB. The MSB staff and DOWL team agreed that this area will best serve the demand and need of pilots in the MSB and outlying areas.

See attached table listing preliminary runway and waterlane facility requirements.

The following tables list public and private airports that were eliminated in the first phase of the Regional Aviation System Plan (RASP). After re-evaluating the list, ten airports will be considered for the initial Phase II screening.

Public Airport Locations Dismissed in Phase 1 Regional Area System Plan			
Map Location	**Airport**	**Reason Dismissed**	**Reconsider**
Airports Within Study Area			
A	**Big Lake (existing ramp)**	- Existing recreation and residential development - Highway between park and Big Lake Airport	**No**
B	**Carpenter Lake**	- Existing recreation and residential development - Lack of suitable publicly owned land	**No**
C	**Diamond Lake**	- Existing recreation and residential development	**No**
-	**Existing Private Airports**	- Lack of capacity - May not be available to public - Existing recreation and residential development	**Maybe *Will assess in interviews**
D	**Horseshoe Lake**	- Existing recreation and residential development	**No**
E	**Jacobsen Lake**	- Conflict with Wasilla Airport would require a control tower - Community opposition during last Master Plan	**No**
F	**Lake Lucille**	- Existing recreation and residential development	**No**
-	**Other Lakes near Point Mackenzie**	- Potential conflicts with Anchorage airspace	**No**
G	**Palmer Airport**	- Limited space for pond	**No**
H	**Palmer Gravel Pit Floatplane Base**	- May not be available to public - Uncertain timeline - Conflict with Skyranch Airpark - Proposed residential development	**No**
-	**Palmer Hay Flats**	- Conflicts with surrounding Game Refuge - Runway length of only 2,700 feet	**No**
I	**Papoose Lakes**	- Existing recreation and residential development - Remote location - Poor road access	**Yes**
J	**Red Shirt Lake**	- Remote location - No road access	**No**
K	**Stephan Lake**	- Existing residential development - Lack of good road access	**No**
L	**Three-Mile Lake**	- Existing Girl Scout camp - Lack of publicly owned land	**No**
M	**Wasilla Airport**	- Use of Jacobsen Lake would require a control tower - Community opposition during last master plan *Current master plan recommends floatplane base on Wasilla Airport	**Yes**
N	**Wasilla Lake**	- Existing recreation and residential development	**No**
O	**Willow Airport**	- Existing recreation and residential development - Existing community concerns about existing air taxi operations - Highway between lake and runway	**No**
Airports Outside Study Area			
-	**Christensen Lake**	- Community opposition to floatplane activity	**No**
-	**Fish Lake (Talkeetna)**	- Community opposition to floatplane activity	**No**
-	**Talkeetna Airport**	- Community opposition to floatplane activity - Hydrologic issues for constructing a pond on the airport	**No**

Private Airport Locations Dismissed in Phase 1 Regional Aviation System Plan			
Map Location	**Airport**	**Reason Dismissed**	**Reconsider**
Airports Within Study Area			
AA	Beaver Lake Seaplane	- No public runway	No
BB	Brocker Lake Seaplane	- Very small lake	No
CC	Butte Municipal Airport	- No floatplane facility	No
DD	Cottonwood Lake Seaplane	- No public runway	No
EE	Finger Lake Seaplane	- No public runway	No
FF	Gooding Lake Seaplane	- No public runway	No
GG	Jones Landing Seaplane	- Very small lake - No runway	No
HH	Jonesville Mine	- No floatplane facility	No
II	Morvro Lake Seaplane	- No public runway	No
JJ	Nancy Lake Seaplane	- No public runway	No
KK	Niklason Lake Seaplane	- No public runway	No
LL	Seymour Lake Seaplane	- No public runway	No
MM	Visnaw Lake Seaplane	- No public runway	No
NN	Wolf Lake	- Significant residential -Lake is constrained (too small) *Wolf lake was not originally examined.	No
Airports Outside Study Area			
-	Clearwater	- No floatplane facility - Remote location	No
-	Lake Louise	- Public runway closed *Now open	No
-	Road Commission No. 1	- No floatplane facility - Remote location	No

Based on discussions with MSB staff and reviewing the previous study, the project team has developed an updated list of criteria to be used in the site selection process. These criteria will include: Airspace, Winds, Topography, Wetlands/Uplands, Land Ownership, Land Use, Driving Distance/Road Access, Utilities, Environmental Impacts, Public Support, Size of Site Meets Minimal Requirements, Size of Site Meets Ultimate Requirements and Cost.

When examining the MSB for a new airport site, one of the primary concerns is compatible airspace. Above and around an airport or floatplane base the airspace needs to be free of conflicts and available for future expansion, if more demanding instrument approaches are needed. Factors that affect airspace compatibility range from:

- Controlled airspace such as Anchorage Class C and Part 93 airspace
- Existing registered patterns and approaches at publicly or privately owned airports in the MSB
- Precision approaches at airports such as Wasilla or Palmer

When constructing a floatplane base, the pond(s) or channel(s) should be aligned in the direction of the prevailing winds. The Phase I report determined that in the Wasilla area winds are predominantly from the northeast to southwest; north to south around the Point Mackenzie area; north to south around the Upper Susitna region due to terrain.

Topography, wetlands, and environmental impacts will all work together to evaluate soil conditions, water tables, wetlands and wetlands bank areas, and geographical features.

Given that land ownership can be expensive, difficult to acquire, and pose incompatible uses for aviation, it is preferable to locate potential airport sites on land that is already owned by the MSB, another public entity, or large private landowner in certain cases. Considering incompatible development such as residential land uses, certain institutional facilities, and certain recreational land uses will also affect floatplane sites because heavily developed lakes with homes are used by recreational watercraft and can be noise sensitive.

Because the creation of a floatplane base will draw on demand created by nearby developed areas, consideration should be given to the driving distance required of those that live within Wasilla, Palmer, and Anchorage. Road access should be publicly owned and there should be good, reliable, paved, and maintained year-round. Some sites may require the construction of an access road between the existing road system and the new floatplane site or upgrading the existing road at an establish site.

Given the criteria, a list of ten airports has been generated for the AAB and MSB staff to look at and offer opinions and suggestions before the DOWL team selects the final three candidates and begins an extensive study on those sites to determine the single best option for a new floatplane base for the MSB. Attached in this memo is a table listing the top ten sites along with some pros and cons associated with each proposed site.

Preliminary Runway Facility Standards Summary

Runway	Initial Minimum Size	Central Region DOT&PF	*Ultimate
Airport Reference Code	**A-I ****	**A-I****	**C-II**
Weather Minimums	**Visual runway**	**Not Lower than 1 mile**	**Non-Precision runway < 3/4 mile visibility**
Design Aircraft	Beech Bonanza Piper Seneca Beaver	Beech Bonanza Piper Seneca Beaver	Cessna Citation III, VI, VIII, X Gulfstream II, III, IV CRJ-200, 700
Runway Length	2,200' - Gravel	3,200' - Gravel	6,000' - Grooved Asphalt
Runway Width	60'	60'	100'
Runway Shoulder Width	10'	10'	10'
Runway Safety Area Width	120'	120'	500'
Runway Safety Area Length Beyond RW End	240'	240'	1000'
Obstacle Free Zone Width and Length	250'/200'	250'/200'	300'/200'
Runway Object Free Area Width	250'	250'	800'
Runway Object Free Area Length Beyond RW End	240'	240'	1,000'
Runway Protection Zone Length	1000'	1000'	2,500'
Runway Protection Zone Inner Width	250'	250'	1,000'
Runway Protection Zone Outer Width	450'	450'	1,750'
Runway Separation, Runway centerline to:			
Holding position	125'	125'	250'
Parallel taxiway/taxilane centerline	150'	150'	400'
Aircraft parking area	125'	125'	500'
Building restriction line	***370'	***370'	***745'

* Initial gravel runway to remain in place
** Small Aircraft
***The FAA no longer has fixed-distance standards for the BRL Location. The indicated setback distances are based on providing 7:1 Transitional slope and runway visibility zone and protected areas clearance over a 35-foot building situated at the same base elevations as the adjacent runway and can be adjusted in accordance with local conditions.

Preliminary Waterlane Facility Standards Summary		
	Initial (Previous FAA Design Advisory Circular)	**Ultimate (2013 FAA Design AC)**
	Limited Float Plane Operations	**Extensive Commercial Operations**
Airport Reference Code	**A-I Small A/C**	**A-II**
Waterlane Length	2,500'	5000'
Waterlane Width	100' (200' operating area)	500'
Minimum Sea Lane Depth (SES/MES)	3'/6'	10'
Waterlane Protection Zone Length	1000'	1000'
Waterlane Protection Zone Inner Width	250'	500
Waterlane Protection Zone Outer Width	450'	700'
Turning Basins	200'/200'	200'/200'

Top 10 Airports For Consideration			
Map Location	**Site**	**Pros**	**Cons**
GBA	Goose Bay Airport	- Existing gravel runway - MSB owned land nearby	- Game refuge nearby - Potential lack of water availability
BLA	Big Lake Airport (New Pond)	- Existing runway - Central location	- Compatible land issues in airspace - Re-alignment of existing runway will be needed - Potential incompatible land uses
SML	Seven Mile Lake	- MSB owned land nearby - Existing lakes could be connected - Optimal location	- Land on southwest side privately owned - Current status in wetlands bank - Cost
FHL	Flat Horn Lake	- Large lake with good orientation - MSB land around most of lake	- No public development nearby - Currently a remote location - Cost - Distance from cities is poor
MSL	Muleshoe Lake	- Relatively undeveloped land - Good orientation for winds	- Poor road access available - Potential VOR conflicts - Wetlands
WAA	Wasilla Airport	- Little development costs needed - Existing runway and development areas	- Lack of water availability - Would be channel not lake
WPL	West Papoose Lake	- Near public road access and infrastructure - Good central location	- Lack of MSB land around lake - Existing residential land and recreational activity
SE9	Section 9 Gravel Pit	- Good location - Good public road access	- Dredging of a channel needed - Topography could be challenging
SE6	Section 6 Gravel Pit	- MSB owned land around area - Could meet ultimate needs	- Dredging of a channel needed - Residential development nearby
CL	Cow Lake	- MSB and CIRI land around lake - Large lake to meet ultimate needs	- Driving distance is far from cities - No adequate access to lake

Matanuska-Susitna Regional Aviation System Plan Phase II

Aviation Advisory Board Briefing

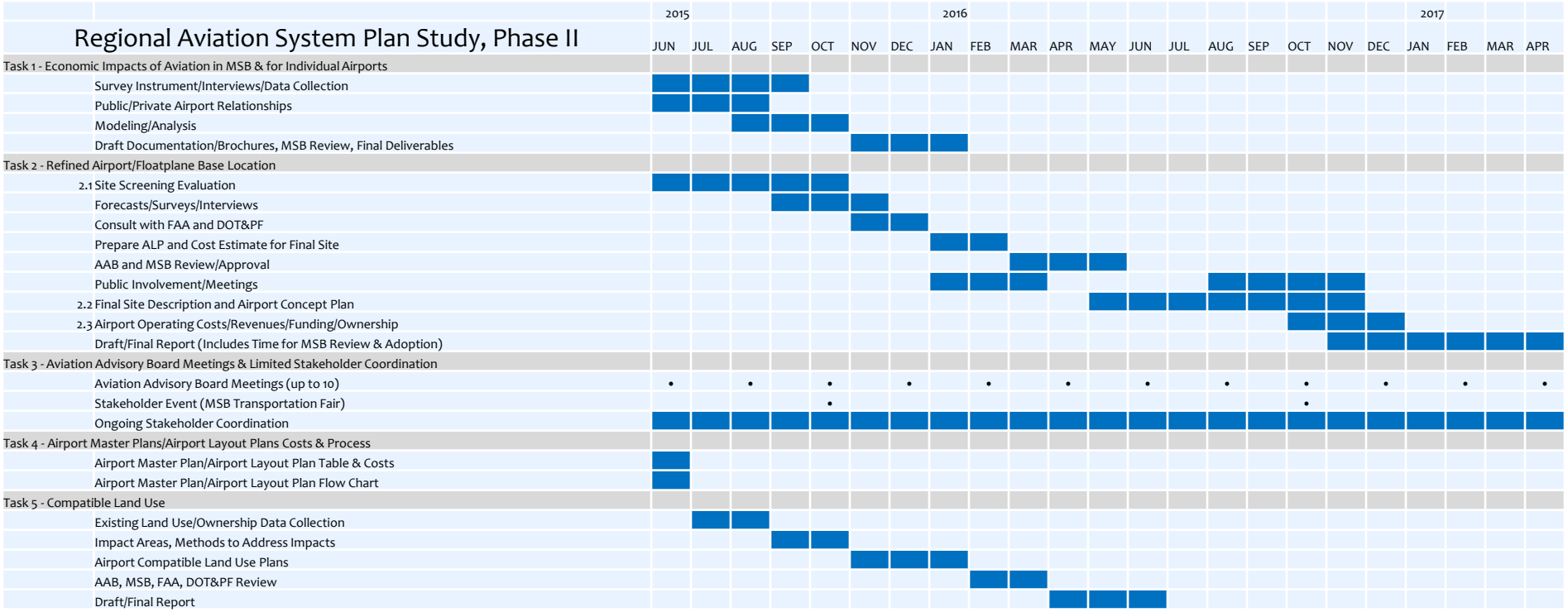
August 13, 2015

DOWL

RASP Phase II Team

* DOWL
  * Tom Middendorf – Contract Manager
  * Leah Henderson – Project Manager
  * Chris Cole – Lead Planner
* Northern Horizon – Steve Pavish
* Northern Economics – Jonathan King
* Southeast Strategies – Linda Snow
* Mead and Hunt – Stephanie Ward

Scope and Schedule



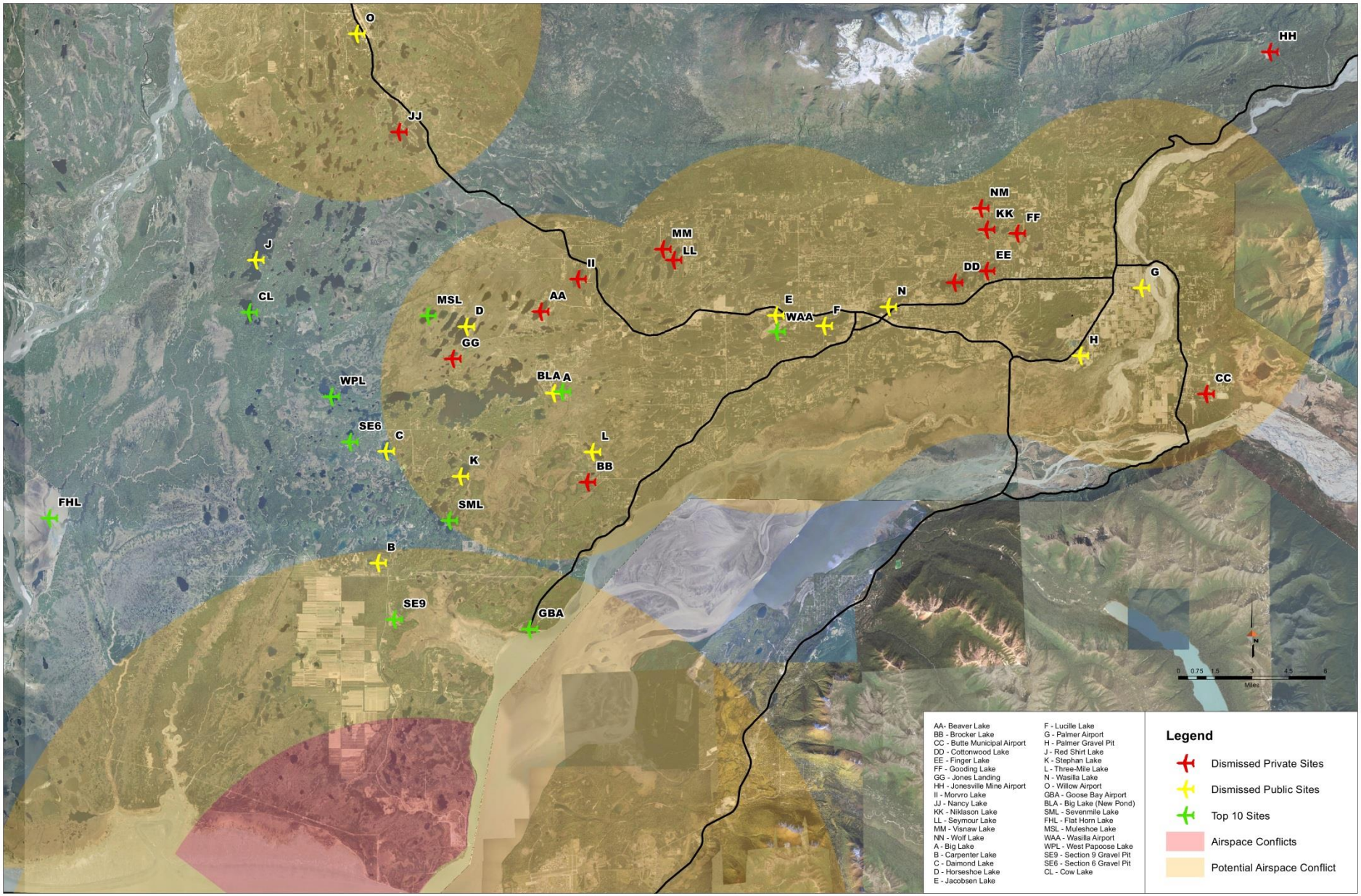
Scope and Schedule

* Task 1 – Economic Impacts – June to January
  * Economic Impacts of Public Airports in MSB
  * Public/Private Airport Relationships
* Task 2 – Airport/Floatplane Base Location – June to Apr 2017
  * Final site selection
  * Forecast
  * Final Site Description and Airport Concept Plan
  * Airport Operating Costs & Revenue Projections, Funding, Implementation Plan

Scope and Schedule

* Task 3 – AAB Meetings and Public Involvement - Ongoing
  * AAB Meetings
  * MSB Transportation Fair
* Task 4 – Airport Master Plan/Airport Layout Plan Costs
  * Completed
* Task 5 – Compatible Land Use – July to June 2017
  * *State owned public airports only*
  * Identify land ownership
  * Land use compatibility Issues
  * Non-aeronautical development opportunities

Focus Area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Miles
AA- Beaver Lake
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CC - Butte Municipal Airport
DD - Cottonwood Lake
EE - Finger Lake
FF - Gooding Lake
GG - Jones Landing
HH - Jonesville Mine Airport
II - Morvro Lake
JJ - Nancy Lake
KK - Niklason Lake
LL - Seymour Lake
MM - Visnaw Lake
NN - Wolf Lake
A - Big Lake
B - Carpenter Lake
C - Daimond Lake
D - Horseshoe Lake
E - Jacobsen Lake
F - Lucille Lake
G - Palmer Airport
H - Palmer Gravel Pit
J - Red Shirt Lake
K - Stephan Lake
L - Three-Mile Lake
N - Wasilla Lake
O - Willow Airport
GBA - Goose Bay Airport
BLA - Big Lake (New Pond)
SML - Sevenmile Lake
FHL - Flat Horn Lake
MSL - Muleshoe Lake
WAA - Wasilla Airport
WPL - West Papoose Lake
SE9 - Section 9 Gravel Pit
SE6 - Section 6 Gravel Pit
CL - Cow Lake
Legend
Dismissed Private Sites
Dismissed Public Sites
Top 10 Sites
Airspace Conflicts
Potential Airspace Conflict

Proposed Facility Requirements

Preliminary Runway Facility Standards Summary

Runway	Initial Minimum Size	Central Region DOT&PF	*Ultimate
Airport Reference Code	A-I **	A-I**	C-II
Weather Minimums	Visual runway	Not Lower than 1 mile	Non-Precision runway < 3/4 mile visibility
Design Aircraft	Beech Bonanza Piper Seneca Beaver	Beech Bonanza Piper Seneca Beaver	Cessna Citation III, VI, VIII, X Gulfstream II, III, IV CRJ-200, 700
Runway Length	2,200' - Gravel	3,200' - Gravel	6,000' - Grooved Asphalt
Runway Width	60'	60'	100'
Runway Shoulder Width	10'	10'	10'
Runway Safety Area Width	120'	120'	500'
Runway Safety Area Length Beyond RW End	240'	240'	1000'
Obstacle Free Zone Width and Length	250'/200'	250'/200'	300'/200'
Runway Object Free Area Width	250'	250'	800'
Runway Object Free Area Length Beyond RW End	240'	240'	1,000'
Runway Protection Zone Length	1000'	1000'	2,500'
Runway Protection Zone Inner Width	250'	250'	1,000'
Runway Protection Zone Outer Width	450'	450'	1,750'
Runway Separation, Runway centerline to:			
Holding position	125'	125'	250'
Parallel taxiway/taxilane centerline	150'	150'	400'
Aircraft parking area	125'	125'	500'
Building restriction line	***370'	***370'	***745'

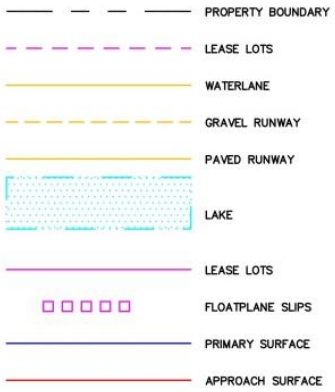
* Initial gravel runway to remain in place ** Small Aircraft

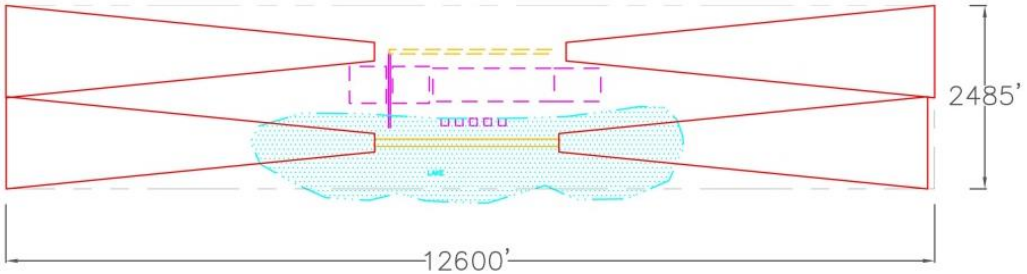
***The FAA no longer has fixed-distance standards for the BRL Location. The indicated setback distances are based on providing 7:1 Transitional slope and runway visibility zone and protected areas clearance over a 35-foot building situated at the same base elevations as the adjacent runway and can be adjusted in accordance with local conditions.

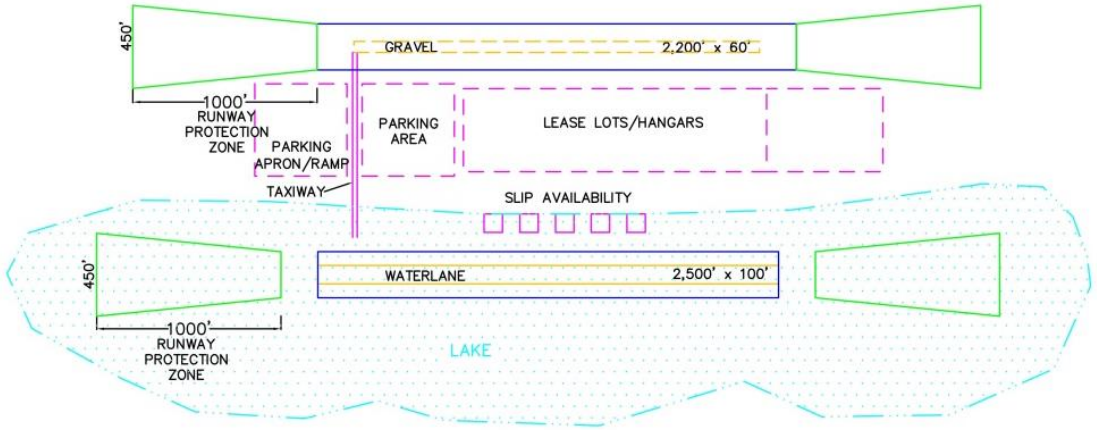
Proposed Facility Requirements

Preliminary Floatplane Facility Standards Summary			
Water Lane		Initial (Previous FAA Design Advisory Circular)	Ultimate (2013 FAA Design AC)
		Limited Float Plane Operations	Extensive Commercial Opperations
Airport Reference Code		A-I Small A/C	A-II
Waterlane Length		2,500'	5000'
Waterlane Width		100' (200' operating area)	500'
Minimum Sea Lane Depth (SES/MES)		3'/6'	10'
Waterlane Protection Zone Length		1000'	1000'
Waterlane Protection Zone Inner Width		250'	500
Waterlane Protection Zone Outer Width		450'	700'
Turning Basins		200'/200'	200'/200'

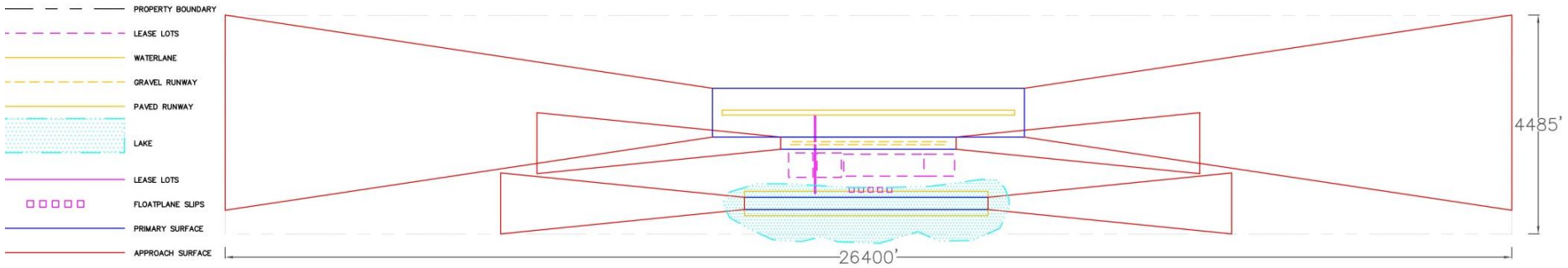
Proposed Facility Requirements

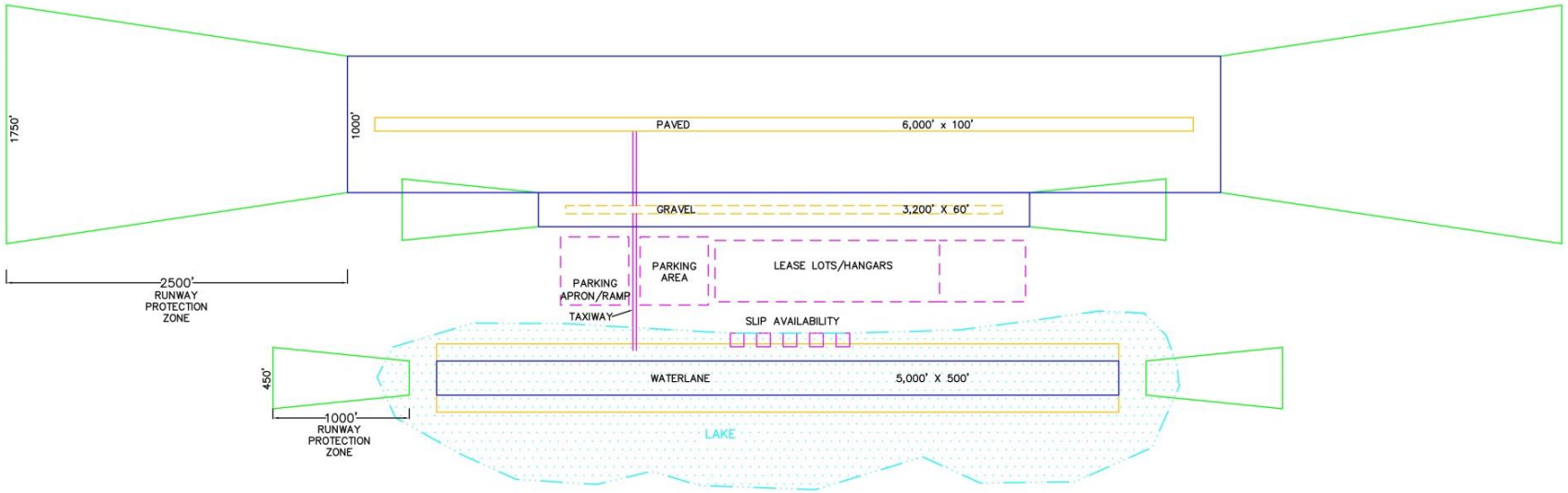






Proposed Facility Requirements





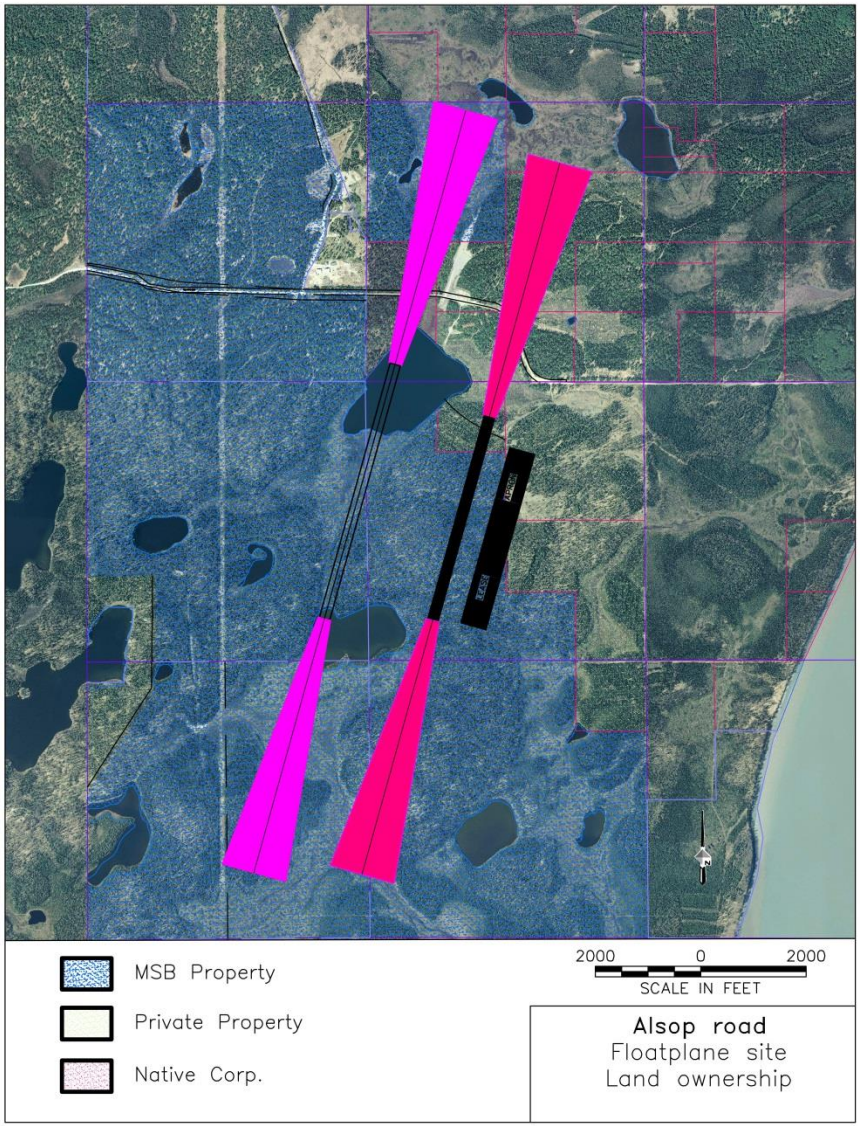
Proposed Criteria

* Airspace
* Winds (Alignment)
* Topography
* Wetlands/Uplands
* Land Ownership
* Land Use
* Driving Distance
* Road Access
* Utilities
* Environmental Impact
* Public Support
* Size meets Initial Need
* Size meets Ultimate Need
* Cost

Phase I Dismissed Airports

Public Airport Locations Dismissed in Phase 1 Regional Area System Plan		
Airport	Reason Dismissed	Reconsider
Papoose Lakes	- Existing recreation and residential development - Remote location - Poor road access	Yes
Wasilla Airport	- Use of Jacobsen Lake would require a control tower - Community opposition during last master plan *Current master plan recommends floatplane base on Wasilla Airport	Yes

ALSOP Road Floatplane Site



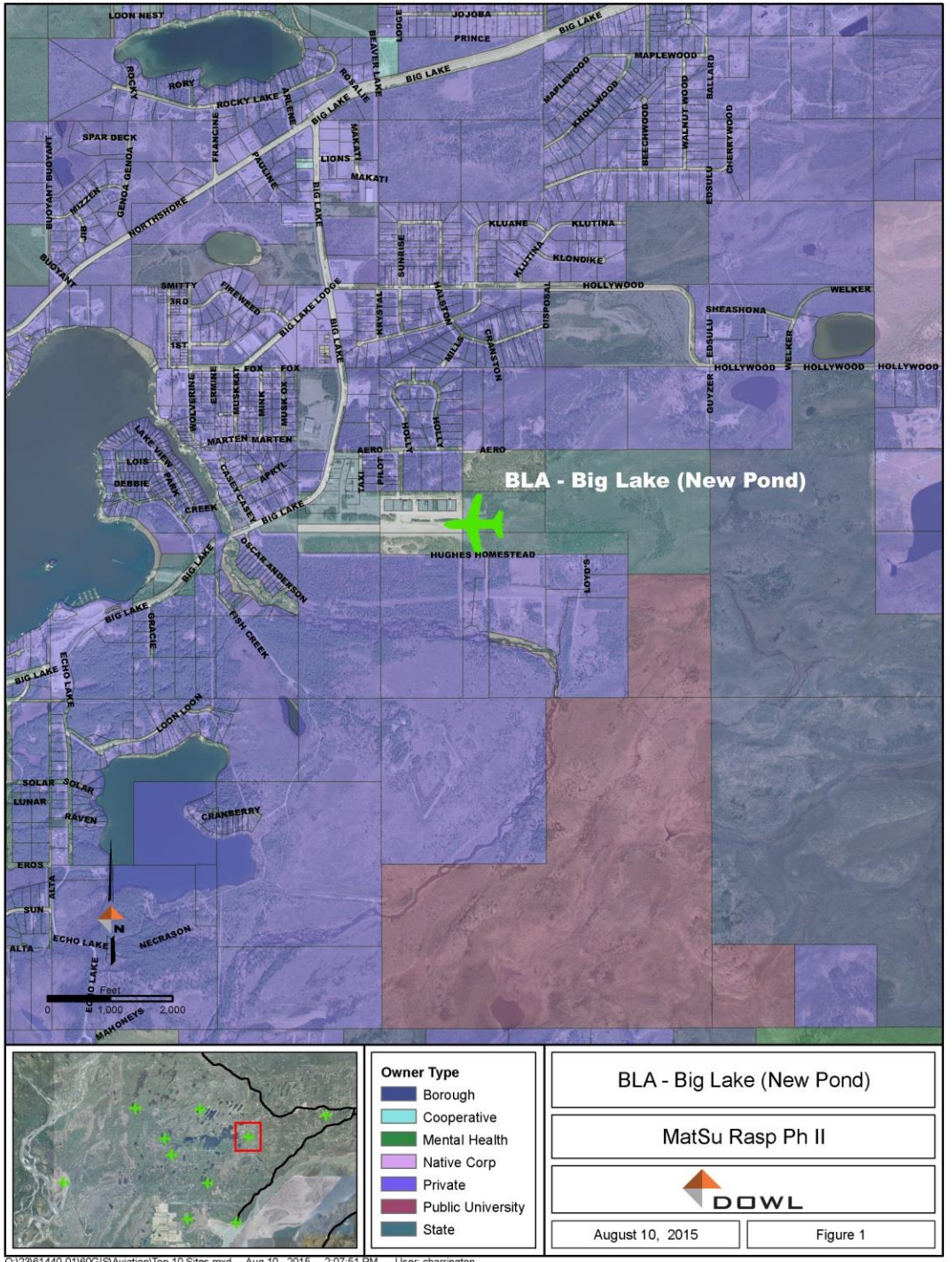
Top Ten Proposed Airport Sites

Top 10 Airports For Consideration

Site	Pros	Cons
Goose Bay Airport	- Existing gravel runway - MSB owned land nearby	- Game refuge nearby - Potential lack of water availability
Big Lake Airport (New Pond)	- Existing runway - Central location	- Compatible land issues in airspace - Re-alignment of existing runway will be needed - Potential incompatible land uses
Sevenmile Lake	- MSB owned land nearby - Existing lakes could be connected - Optimal location	- Land on southwest side privately owned - Current status in wetlands bank - Cost
Flat Horn Lake	- Large lake with good orientation - MSB land around most of lake	- No public development nearby - Currently a remote location - Cost - Distance from cities is poor
Muleshoe Lake	- Relatively undeveloped land - Good orientation for winds	- Poor road access available - Potential VOR conflicts - Wetlands
Wasilla Airport	- Less development costs needed - Existing runway and development areas	- Lack of water availability - Would be channel not lake
West Papoose Lake	- Near public road access and infrastructure - Good central location	- Lack of MSB land around lake - Existing residential land and recreational activity
Section 9 Gravel Pit	- Good location - Good public road access	- Dredging of a channel needed - Topography could be challenging
Section 6 Gravel Pit	- MSB owned land around area - Could meet ultimate needs	- Dredging of a channel needed - Residential development nearby
Cow Lake	- MSB and CIRI land around lake - Large lake to meet ultimate needs	- Driving distance is far from cities - No adequate access to lake

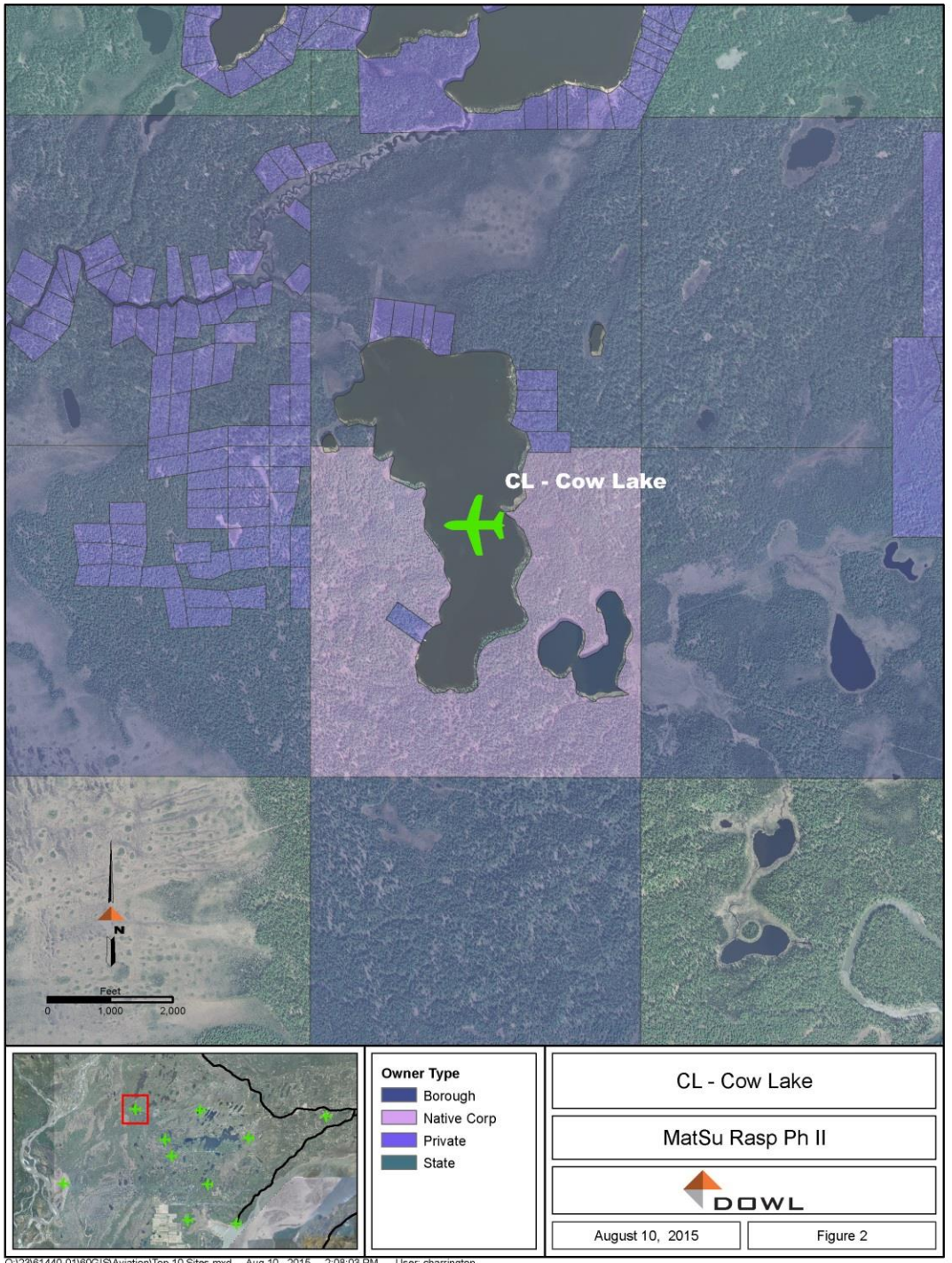
Big Lake Airport (New Pond)

Top Ten



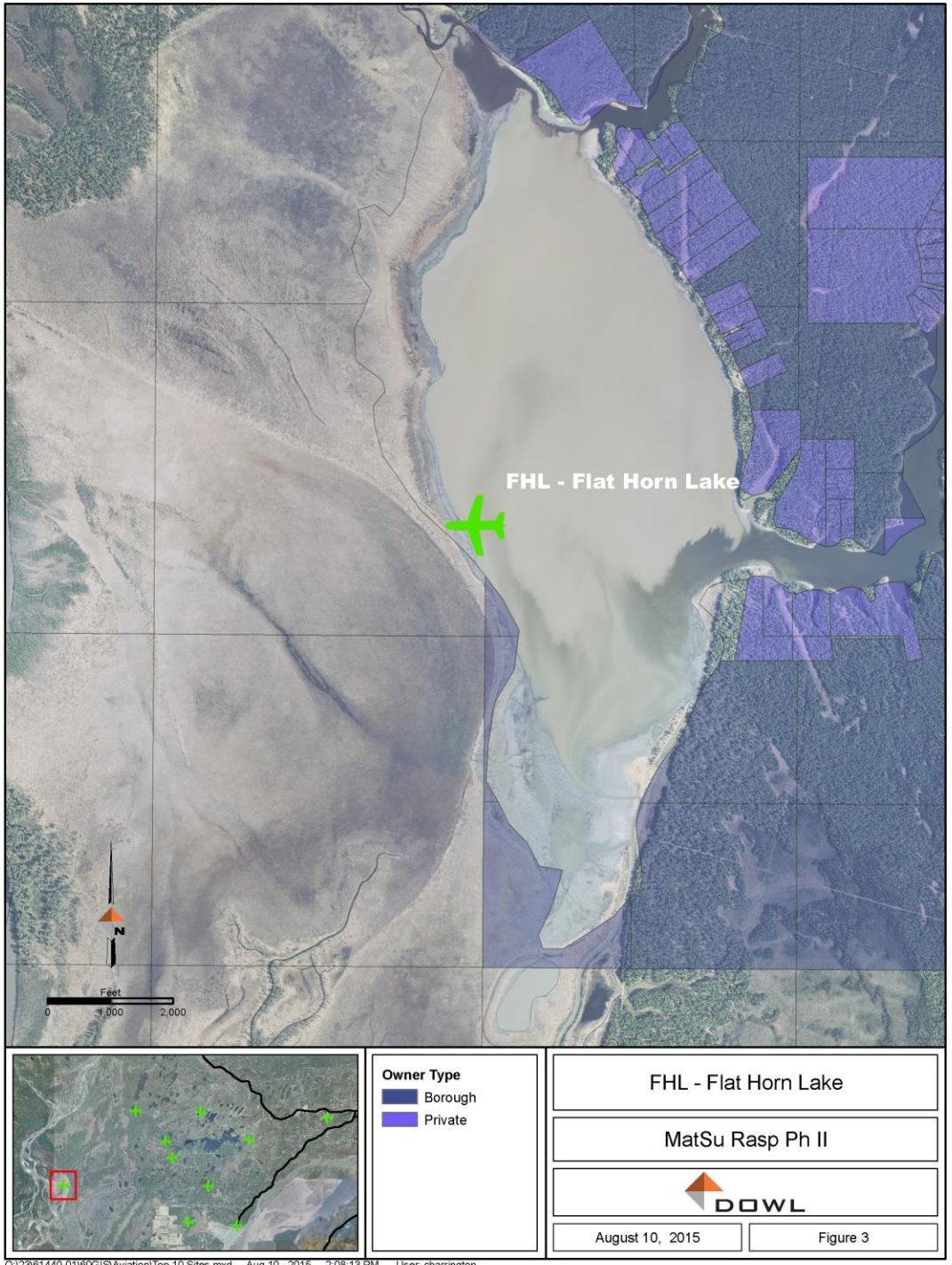
Cow Lake

Top Ten



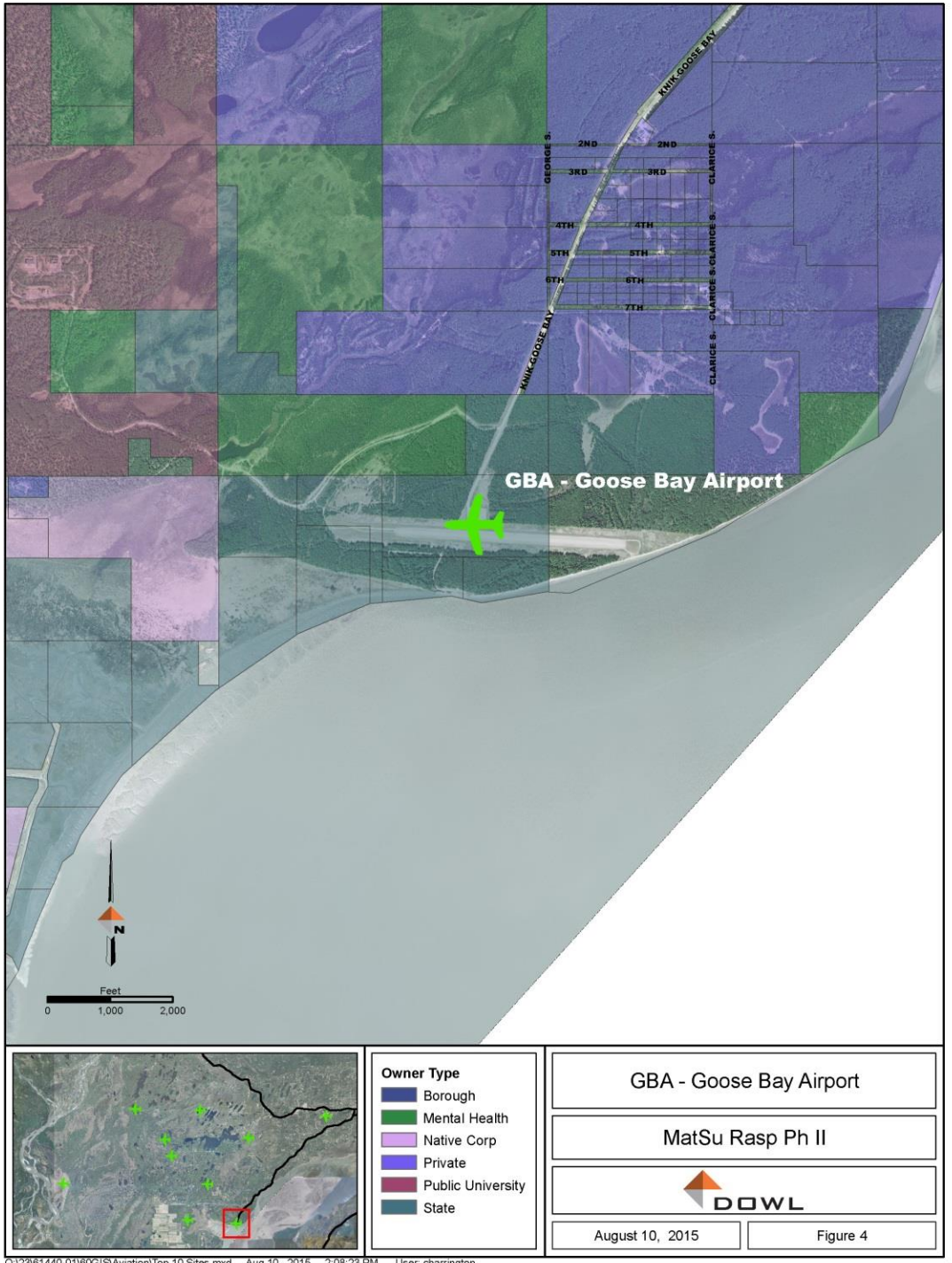
Flat Horn Lake

Top Ten



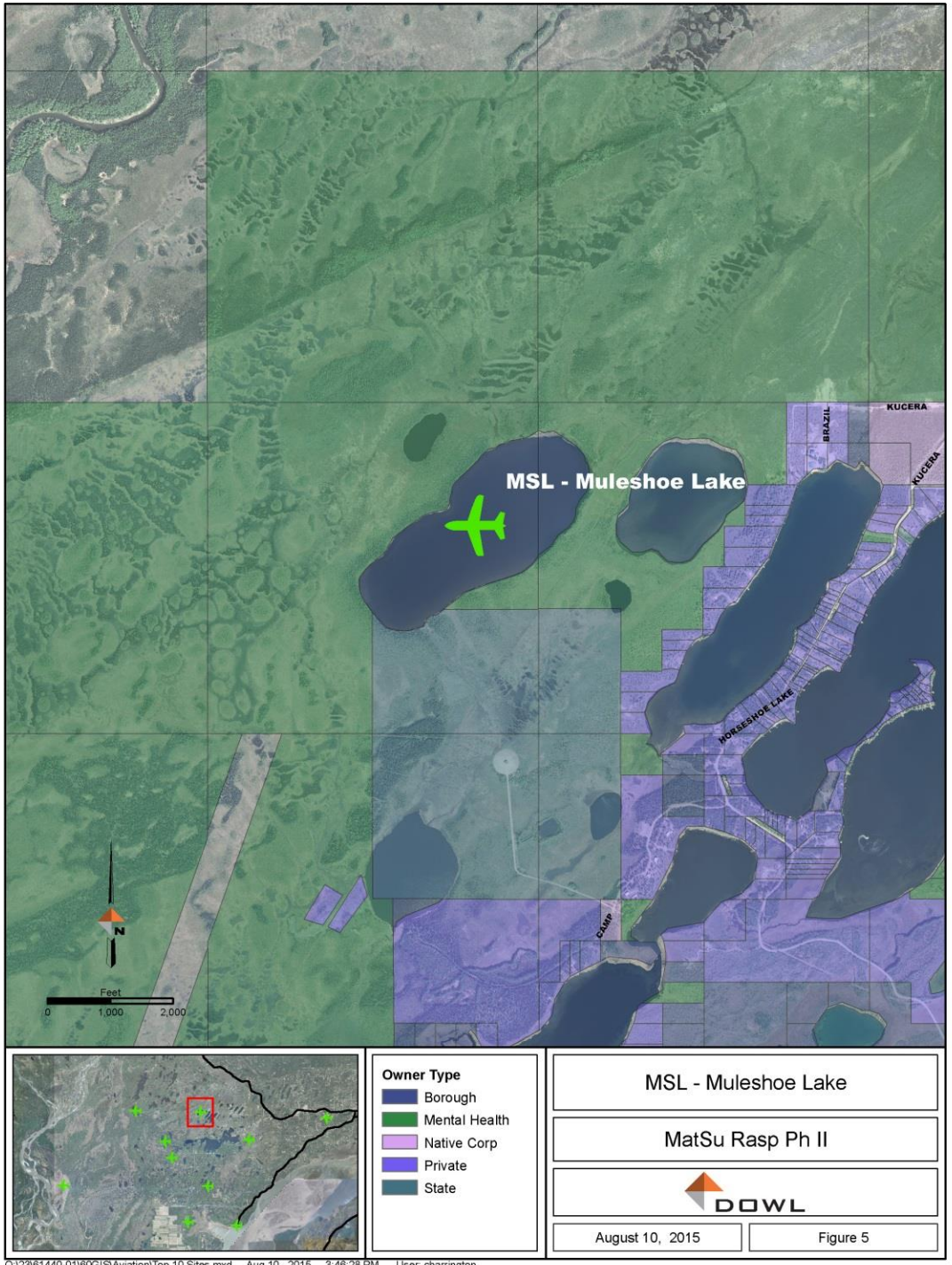
Goose Bay Airport

Top Ten



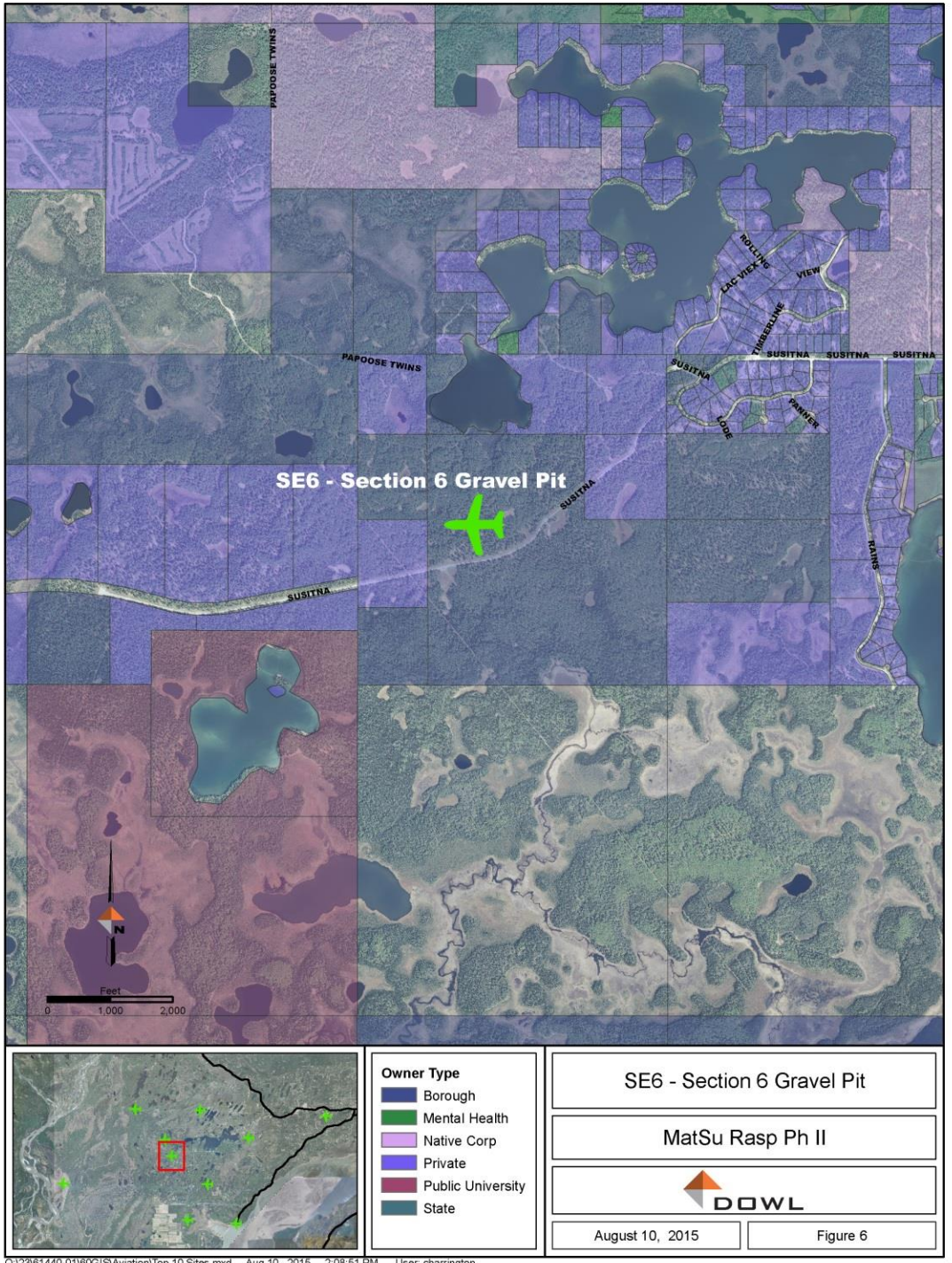
Muleshoe Lake

Top Ten



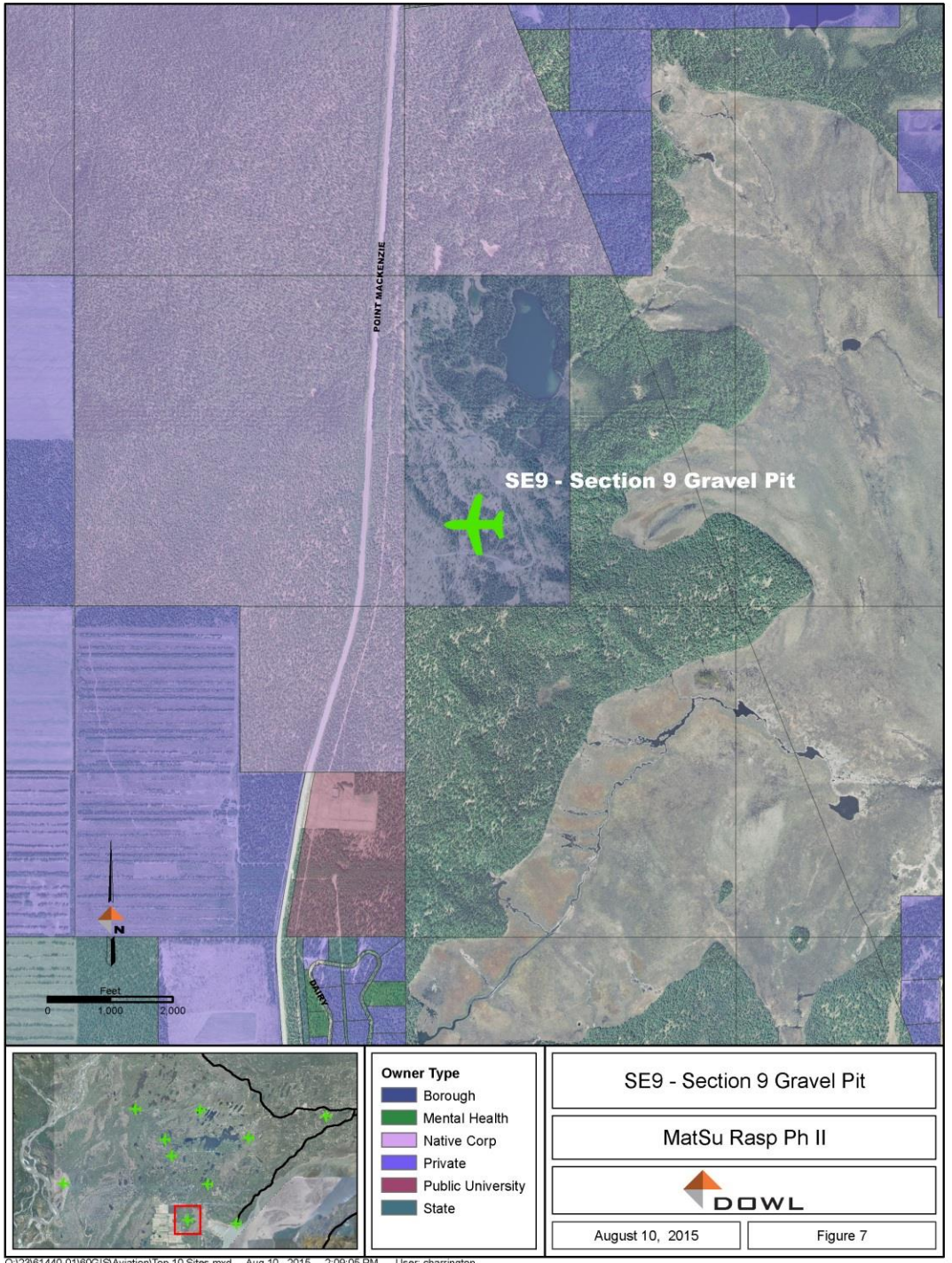
Section 6 Gravel Pit

Top Ten



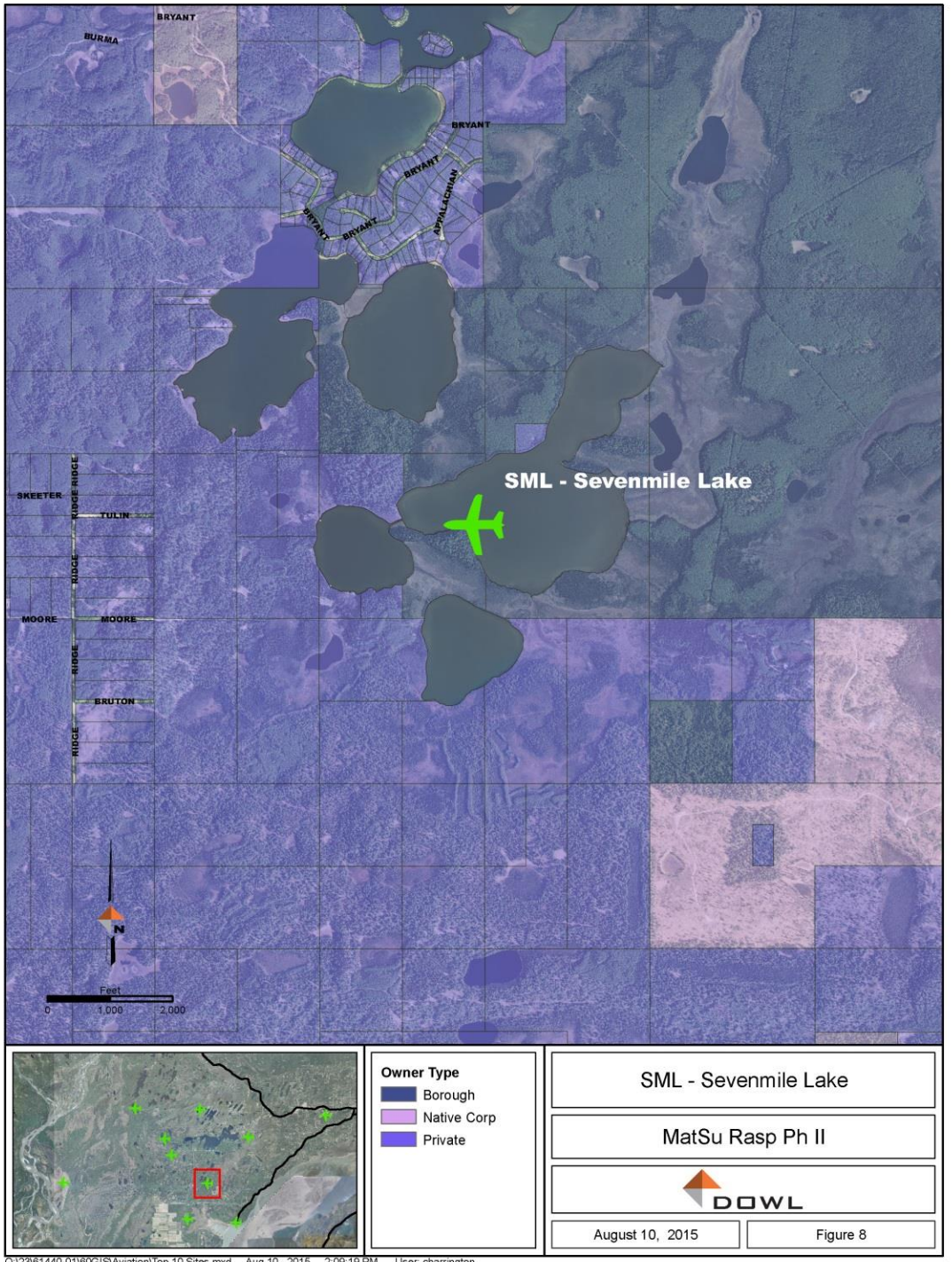
Section 9 Gravel Pit

Top Ten



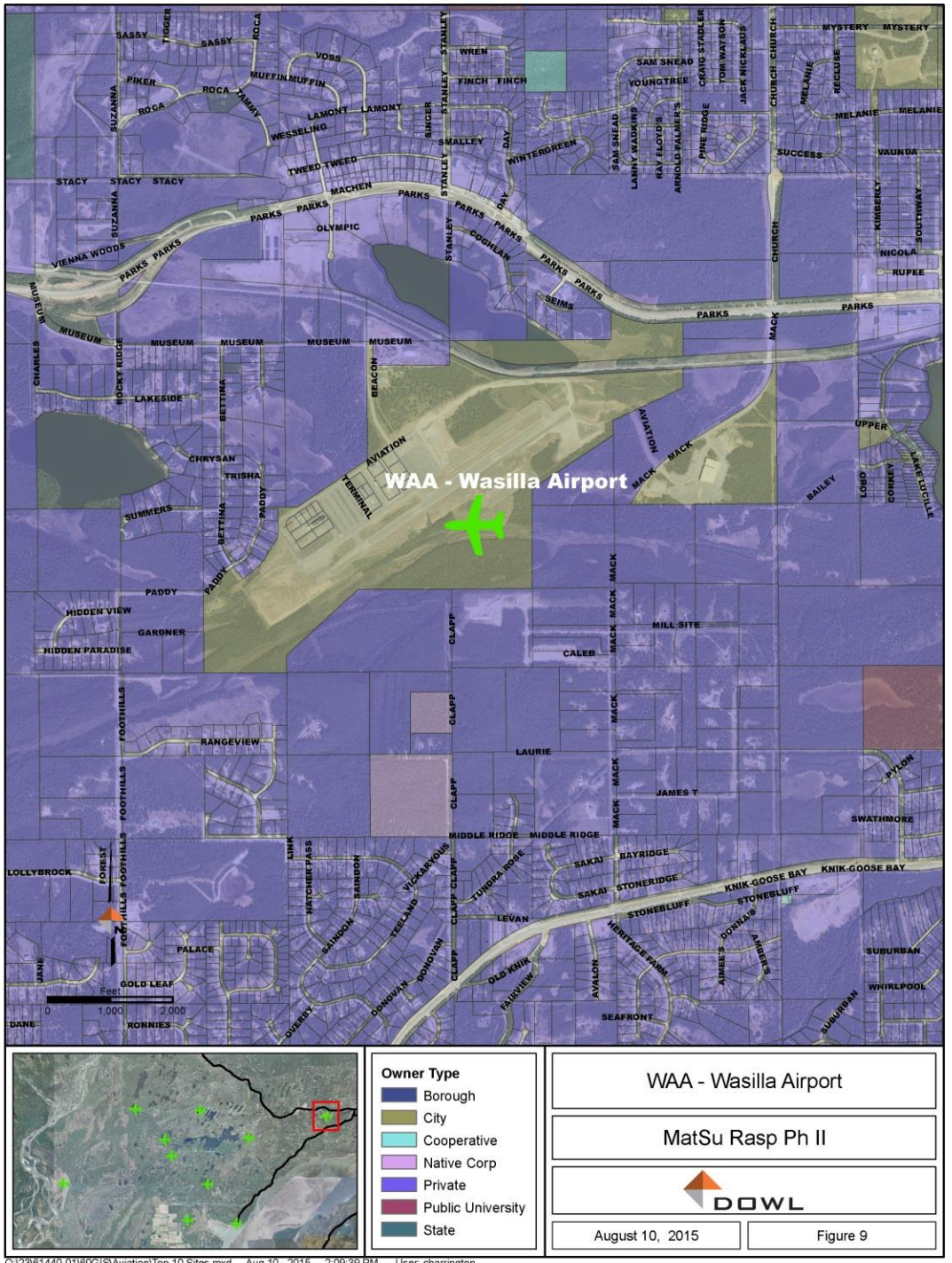
Sevenmile Lake

Top Ten



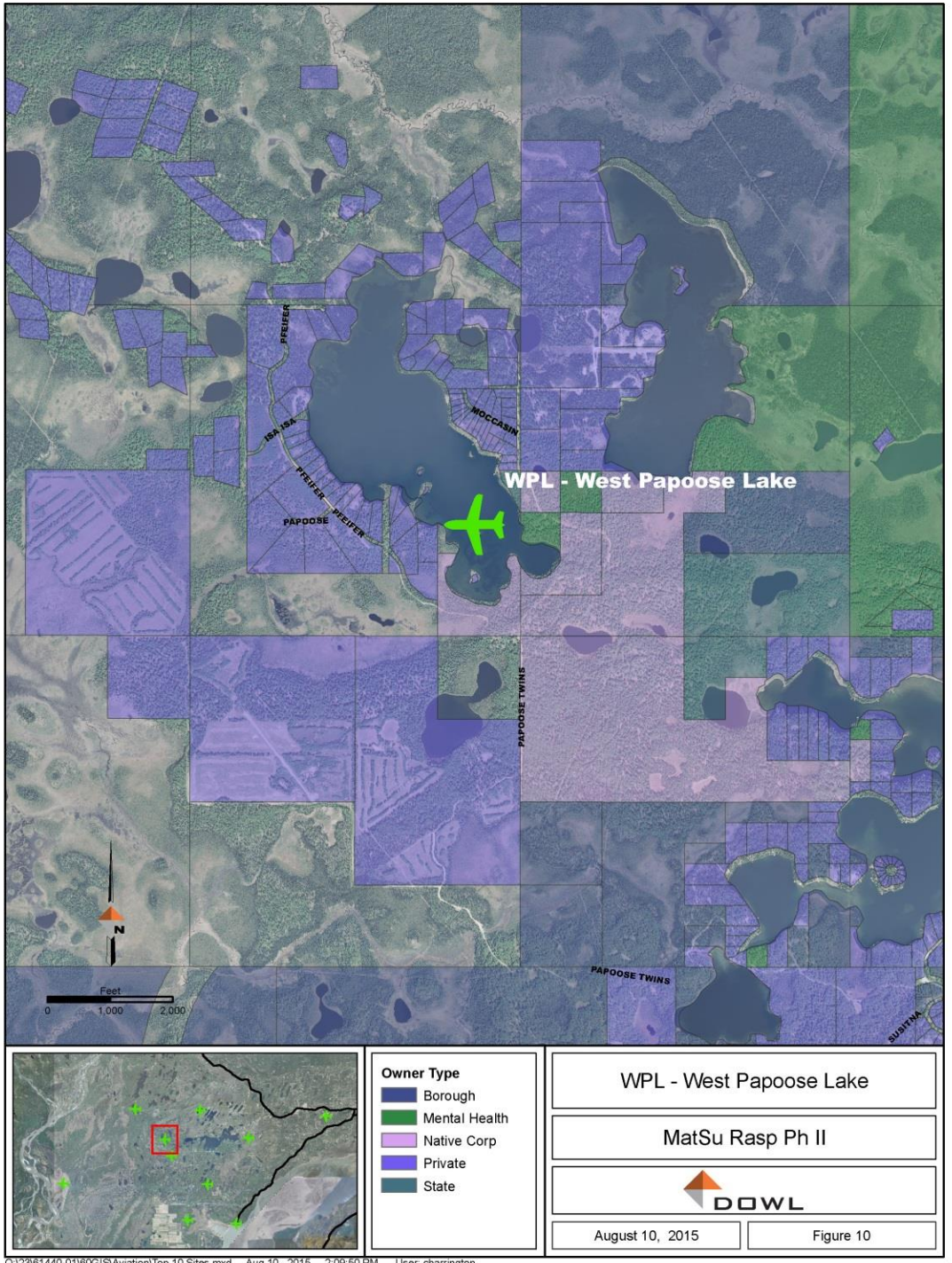
Wasilla Airport

Top Ten



West Papoose Lake

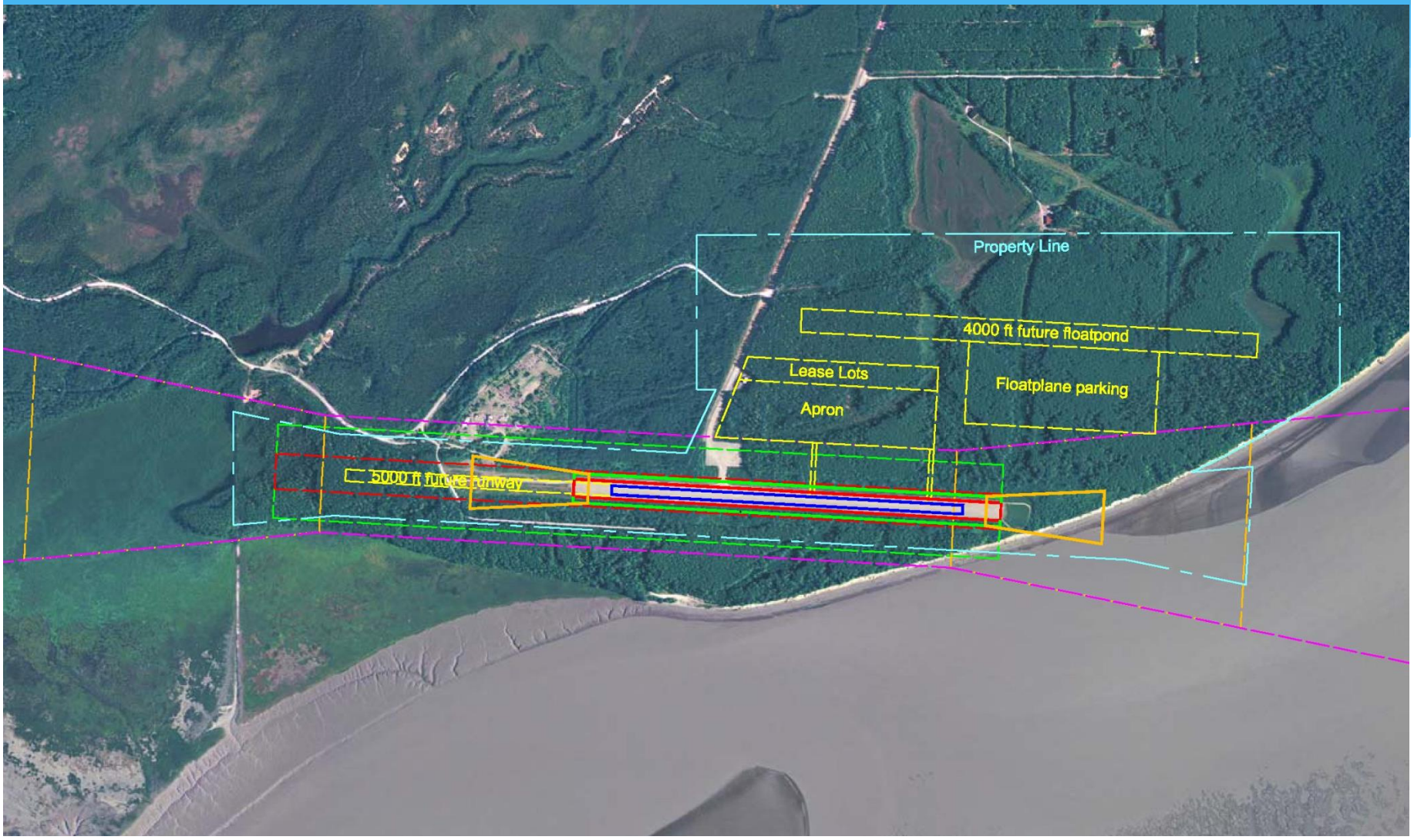
Top Ten



Next Steps

* Narrow sites to Top 3
* Begin interviews and forecast

Goose Bay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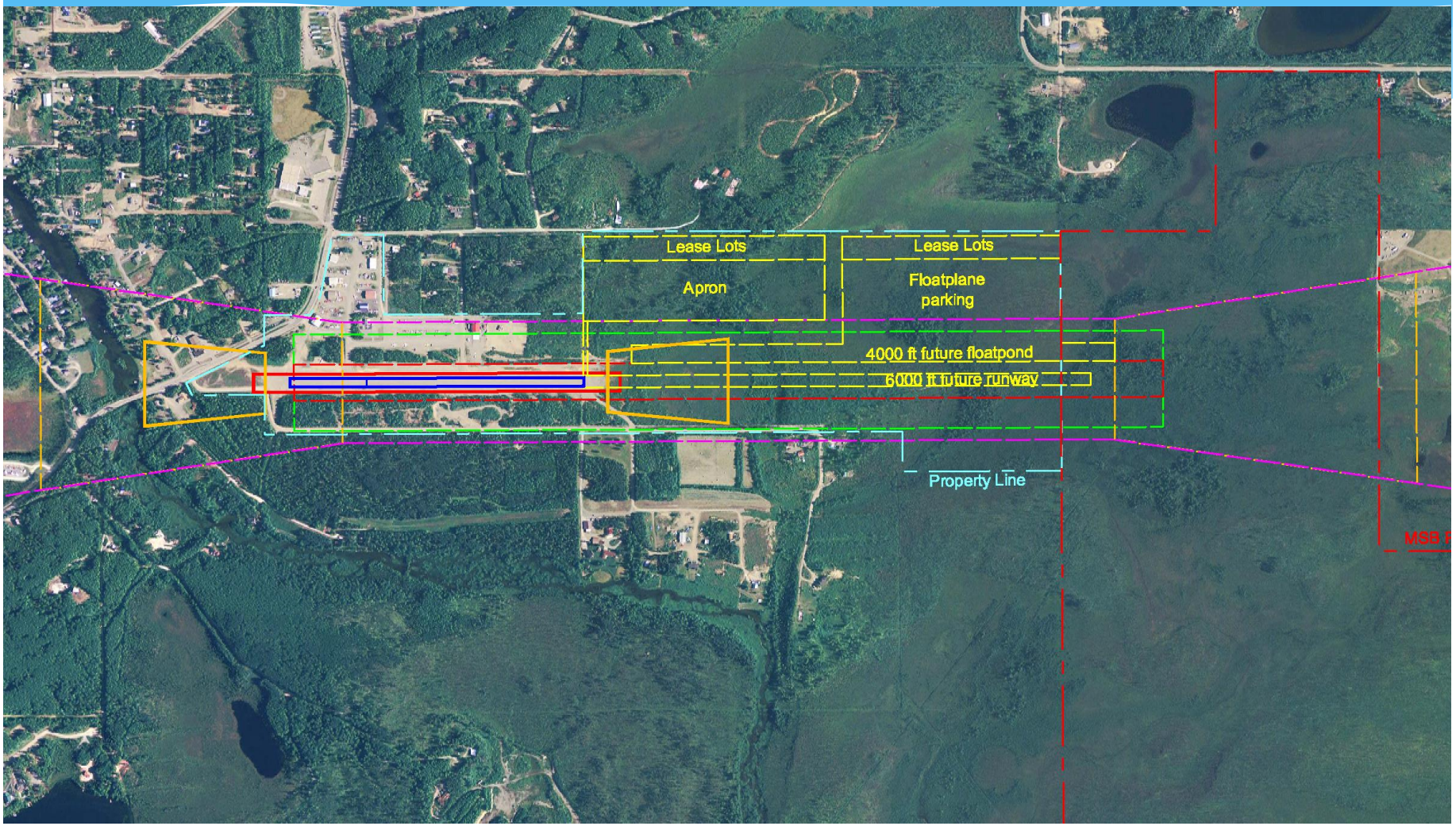
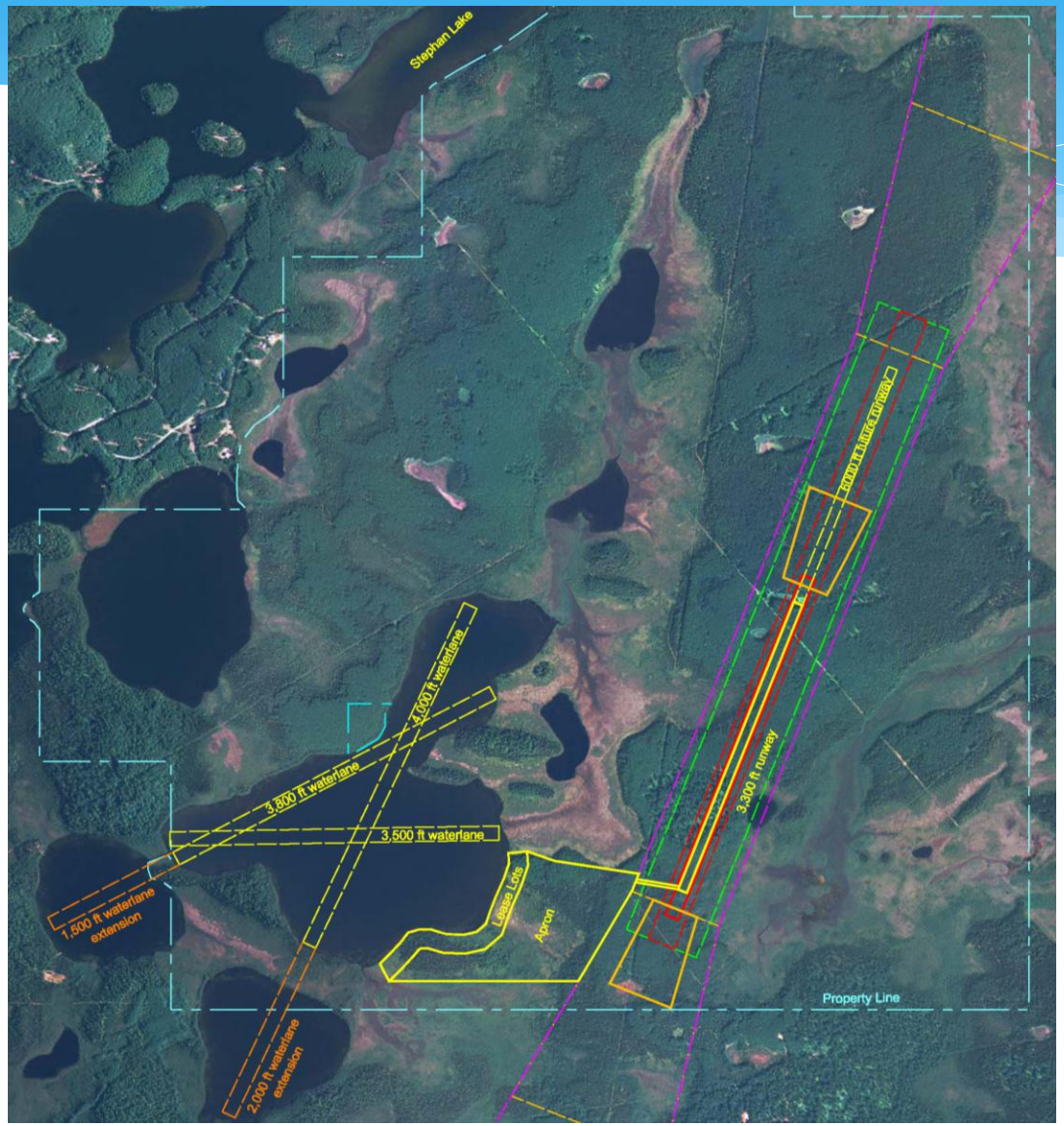
4000 ft future floatpond
Lease Lots
Apron
Floatplane parking
5000 ft future runway

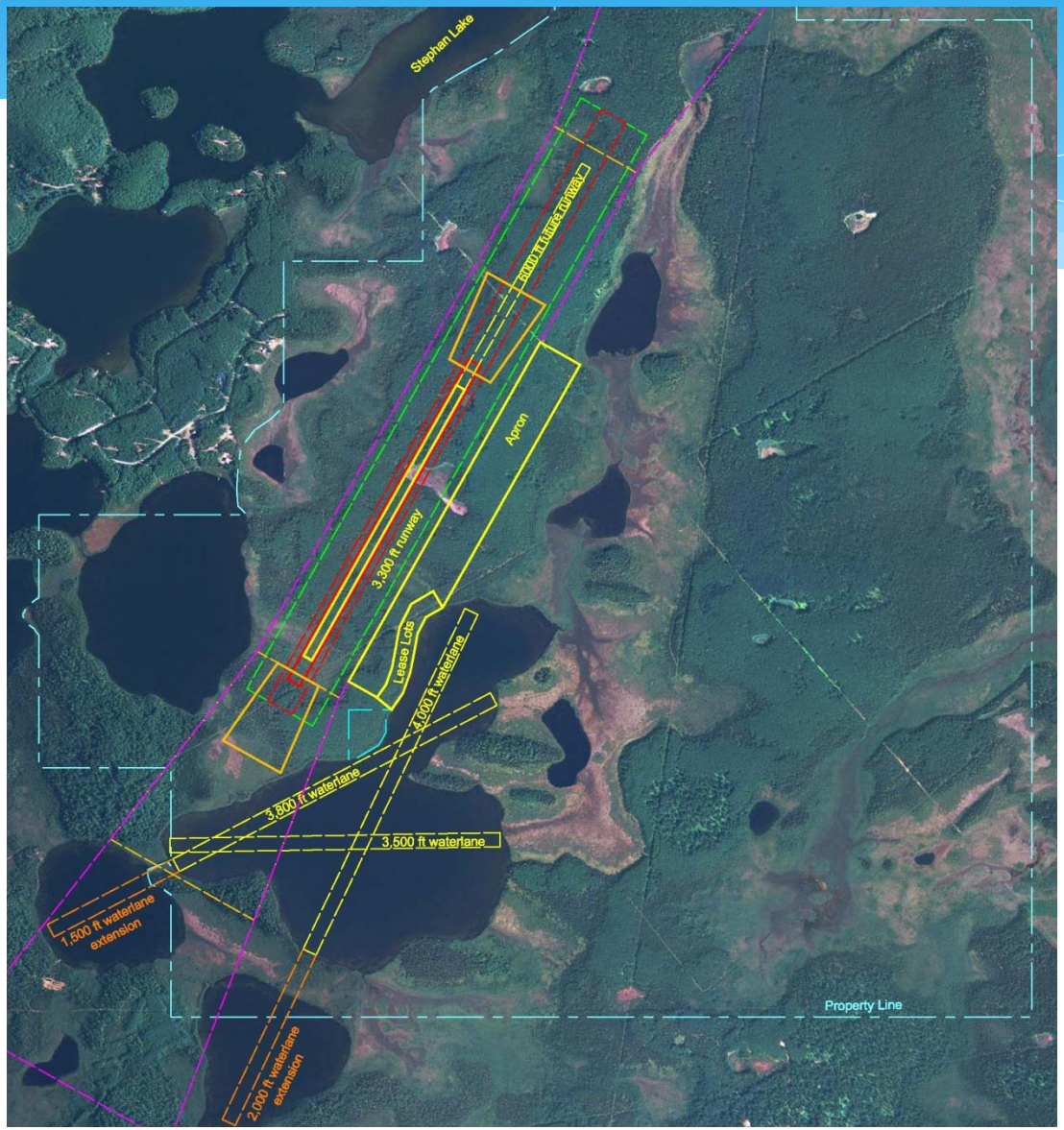
Big Lake


Lease Lots
Apron
Lease Lots
Floatplane
parking
4000 ft future floatpond
6000 ft future runway
Property Line

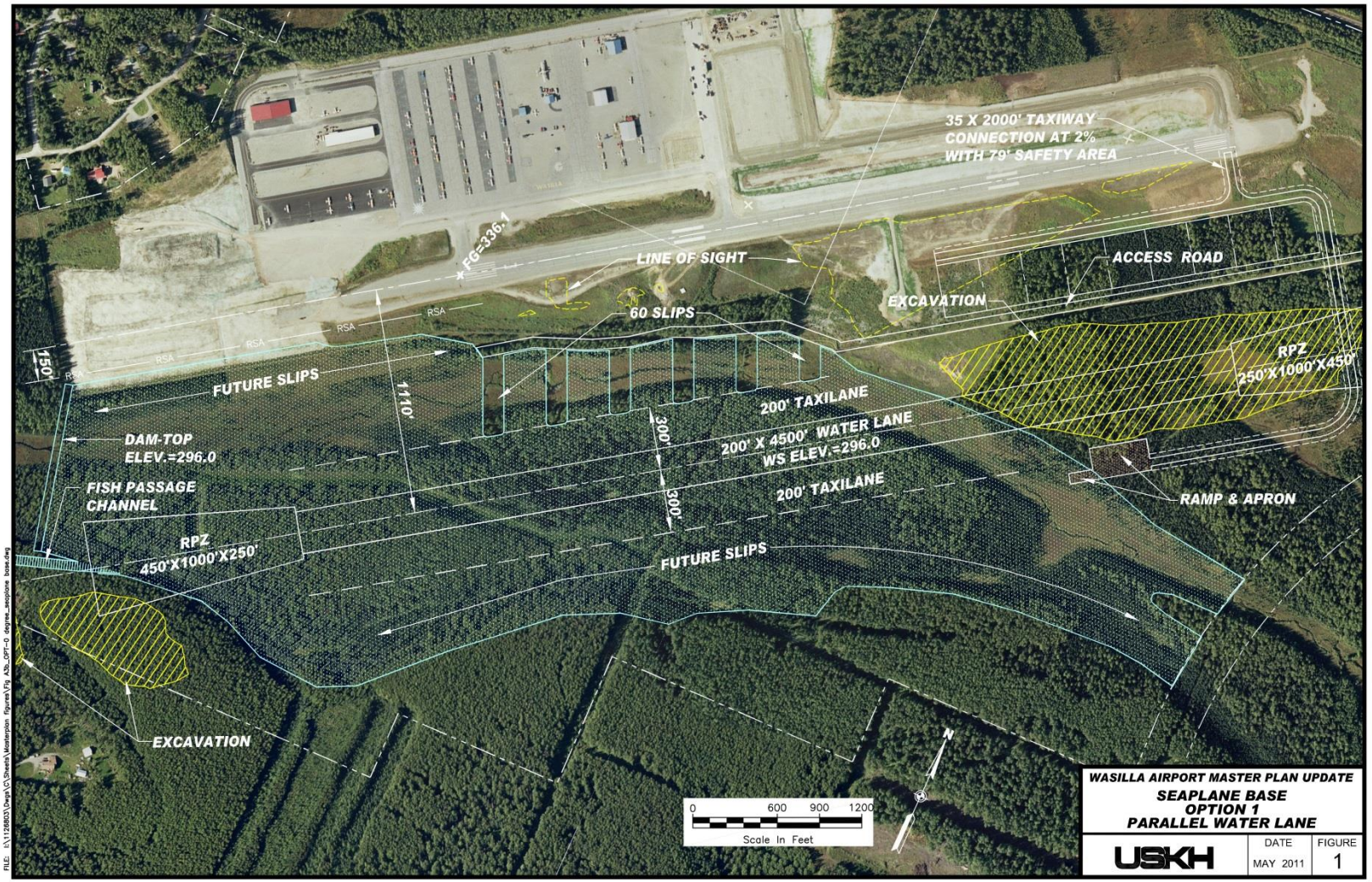
Sevenmile Lake – Alt A



Sevenmile Lake – Alt B



Wasilla Airport



Matanuska-Susitna Regional Aviation System Plan Phase II

The Matanuska-Susitna Borough (MSB) in coordination with DOWL is completing a MSB Regional Aviation System Plan (RASP) Phase II

Phase I:

In 2008 the MSB and DOWL did extensive research to identify demand for new airport facilities in the MSB. The study performed a preliminary screening of over 33 sites within the MSB. Recommendations included a floatplane facility in the South MSB area, with a water runway length of between 4,000 and 5,000 feet and an initial gravel runway and with the flexibility to expand to a paved instrument runway up to 6,000 feet. Phase I recommended three sites within the south MSB: Goose Bay Airport with a new pond, Big Lake Airport with a new pond, and Sevenmile Lake.

Phase II:

- Task 1: Economic Impacts **Completed**
  - » Determine the economic impact of aviation at State of Alaska owned airports in the MSB
  - » Examine the operational relationship between the public and private airports
- Task 2: Airport/Floatplane Base Location Study **June 2015 – April 2017**
  - » Identified Sevenmile Lake as preferred site
  - » Conduct a more detailed final site description and airport concept plan
  - » Identify and forecast airport operating costs, revenue projections, funding, as well as creating an implementation plan included in a final report
- Task 3: Public Involvement **June 2015 – April 2017**
- Task 4: Airport Master Plan and Airport Layout Plan Analysis **Completed**
  - » Identify airports within the MSB needing airport master plans and airport layout plans and produce cost estimates
- Task 5 Compatible Land Use Study **Draft Under Review**
  - » Identify land ownership, potential land use compatibility issues, and non-aeronautical development opportunities around State of Alaska owned public airports in the MSB

For more information visit the project website at: ***http://www.matsugov.us/plans/rasp***

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Leah Henderson LHenderson@dowl.com

DOWL

Matanuska-Susitna Regional Aviation System Plan Phase II

The Matanuska-Susitna Borough (MSB) in coordination with DOWL is completing a MSB Regional Aviation System Plan (RASP) Phase II.

In Phase I of the location study MSB and DOWL did extensive research to identify demand for new airport facilities in the MSB. The study performed a preliminary screening of over 33 sites within the MSB. Recommendations included a floatplane facility in the South MSB area, with a water runway length of between 4,000 and 5,000 feet and an initial gravel runway and with the flexibility to expand to a paved instrument runway up to 6,000 feet. Three sites within the south MSB area were recommended for consideration:

- Goose Bay Airport with a new pond
- Big Lake Airport with a new pond
- Seven Mile Lake

Phase II is examining the following:

- Task 1: Economic impacts — June 2015 – January 2016
  - » Determine the economic impact of aviation at State of Alaska owned airports in the MSB.
  - » Examine the operational relationship between the public and private airports.

- Task 2: Airport /Floatplane Base Location Study — June 2015 – April 2017
  - » Research, interviews and surveys to confirm the selection of a final site
  - » Conduct a more detailed final site description and airport concept plan
  - » Identify and forecast airport operating costs, revenue projections, funding, as well as creating an implementation plan included in a final report

- Task 3: Public involvement — June 2015 – April 2017

- Task 4: Airport Master Plan and Airport Layout Plan Analysis — Completed
  - » Identify airports within the MSB needing airport master plans and airport layout plans and produce cost estimates.

- Task 5 Compatible Land Use Study — July 2015 – June 2016
  - » Identify land ownership, potential land use compatibility issues, and non-aeronautical development opportunities around State of Alaska owned public airports in the MSB.

Project Contact Information:

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Project Manager — LHenderson@dowl.com

DOWL

We need your input…

To better understand the demand for a new airport/floatplane facility and gain feedback on the top 3 sites please visit the following link to complete a survey. The survey can also be accessed by scanning the QR code below. This survey will be available until November 8th.

www.surveymonkey.com/r/MSB-RASP

Q1 Where do you live? Please enter your zip code.

Answered: 237 Skipped: 0

Answer Choices	Responses	
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Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	100.00%	237
Country	0.00%	0
Email Address	0.00%	0
Phone Number	0.00%	0

#	Name	Date
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#	Company	Date
	There are no responses.	

#	Address	Date
	There are no responses.	

#	Address 2	Date
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#	City/Town	Date
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#	State/Province	Date
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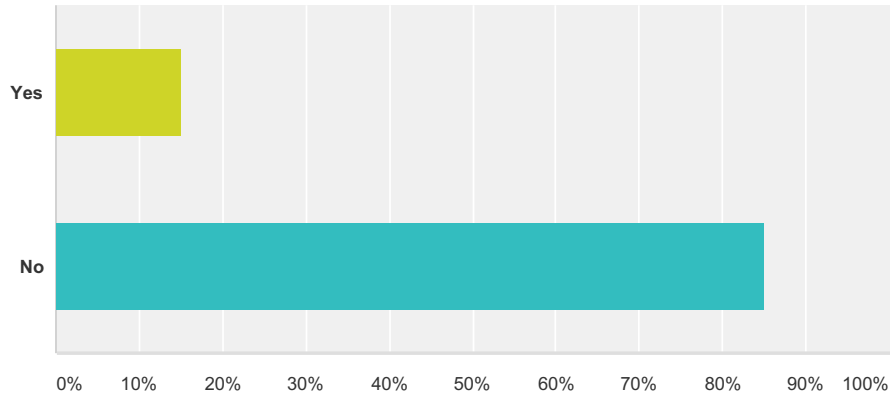
154	99645	11/7/2015 8:12 AM
155	99623	11/7/2015 7:17 AM
156	99654	11/7/2015 6:52 AM
157	99645	11/7/2015 6:47 AM
158	99672	11/7/2015 6:37 AM
159	99507	11/7/2015 5:47 AM
160	99623	11/7/2015 4:43 AM
161	99645	11/6/2015 10:36 PM
162	99645	11/6/2015 10:20 PM
163	95602	11/6/2015 9:49 PM
164	99508	11/6/2015 9:42 PM
165	99610	11/6/2015 9:23 PM
166	99709	11/6/2015 9:10 PM
167	99692	11/6/2015 7:59 PM
168	99654	11/6/2015 7:29 PM
169	99654	11/6/2015 7:20 PM
170	99507	11/6/2015 6:33 PM
171	99517	11/6/2015 6:21 PM
172	99654	11/6/2015 5:53 PM
173	99502	11/6/2015 5:40 PM
174	99503	11/6/2015 5:39 PM
175	99652	11/6/2015 5:30 PM
176	99502	11/6/2015 5:30 PM
177	99577	11/6/2015 5:07 PM
178	99623	11/6/2015 5:00 PM
179	99503	11/6/2015 4:50 PM
180	99688	11/6/2015 4:37 PM

181	99567	11/6/2015 4:32 PM
182	95864	11/6/2015 4:31 PM
183	99516	11/6/2015 4:23 PM
184	99577	11/6/2015 4:19 PM
185	99654	11/6/2015 3:54 PM
186	99167	11/6/2015 3:40 PM
187	99502	11/6/2015 3:36 PM
188	99701	11/6/2015 3:11 PM
189	99501	11/6/2015 3:10 PM
190	99508	11/6/2015 3:07 PM
191	99688	11/6/2015 3:02 PM
192	99654	11/6/2015 2:56 PM
193	99502	11/6/2015 2:54 PM
194	99501	11/6/2015 2:53 PM
195	99502	11/6/2015 2:14 PM
196	99504	11/6/2015 8:41 AM
197	99645	11/5/2015 11:53 AM
198	99645	11/4/2015 10:31 AM
199	99676	11/2/2015 6:17 AM
200	99676	11/1/2015 12:05 PM
201	99652	11/1/2015 10:33 AM
202	99652	10/31/2015 9:12 PM
203	99676	10/31/2015 9:09 AM
204	99654	10/31/2015 2:42 AM
205	99672	10/30/2015 11:15 PM
206	99567	10/30/2015 8:00 PM
207	99623	10/30/2015 5:08 PM
208	99645	10/30/2015 4:42 PM
209	99516	10/30/2015 12:33 PM
210	99654	10/30/2015 12:15 PM
211	99705	10/30/2015 10:44 AM
212	99623	10/30/2015 9:04 AM
213	99676	10/30/2015 6:36 AM
214	99652	10/30/2015 6:34 AM
215	99515	10/30/2015 6:18 AM
216	99669	10/30/2015 5:53 AM
217	99669	10/30/2015 5:09 AM
218	99688	10/30/2015 12:18 AM
219	99518	10/29/2015 11:37 PM
220	99676	10/29/2015 3:27 PM
221	99760	10/29/2015 9:34 AM
222	98676	10/28/2015 4:13 PM

223	99676	10/28/2015 4:13 PM
224	99654	10/27/2015 11:06 AM
225	99654	10/27/2015 10:34 AM
226	99645	10/27/2015 10:21 AM
227	99654	10/27/2015 8:46 AM
228	99587	10/26/2015 10:51 PM
229	99709	10/26/2015 11:01 AM
230	99623	10/25/2015 1:08 PM
231	99688	10/24/2015 7:30 PM
232	99676	10/24/2015 7:21 PM
233	99676	10/24/2015 6:31 PM
234	99676	10/24/2015 3:23 PM
235	99645	10/24/2015 2:08 PM
236	99504	10/22/2015 6:13 PM
237	99654	10/22/2015 11:49 AM
#	**Country**	**Date**
	There are no responses.	
#	**Email Address**	**Date**
	There are no responses.	
#	**Phone Number**	**Date**
	There are no responses.	

Q2 Do you own or operate an aviation business?

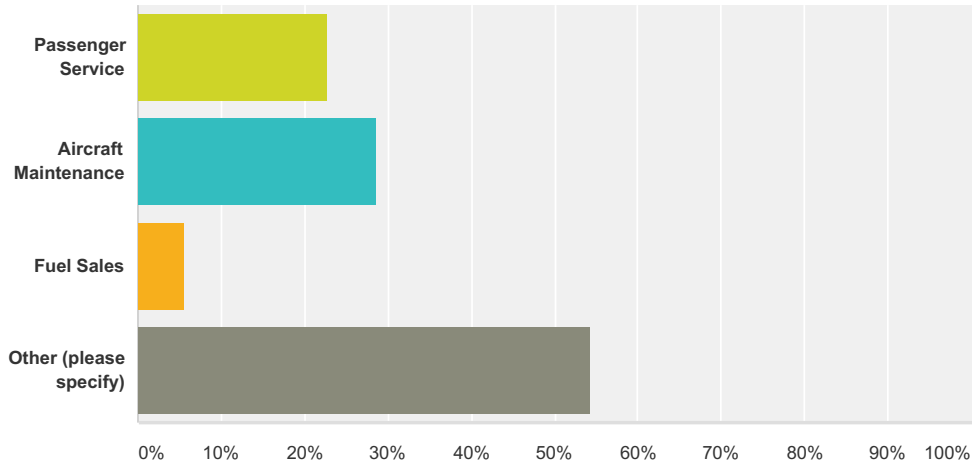
Answered: 232 Skipped: 5



Answer Choices	Responses	
Yes	**15.09%**	35
No	**84.91%**	197
Total		**232**

Q3 What type of business do you operate?

Answered: 35 Skipped: 202



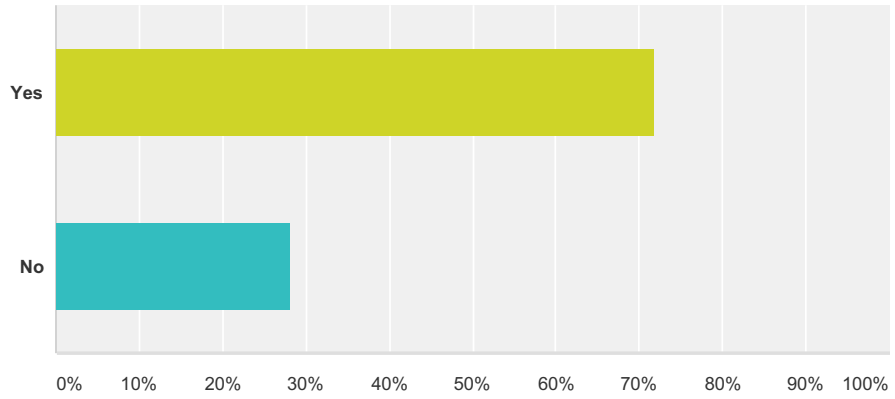
Answer Choices	Responses	
Passenger Service	**22.86%**	8
Aircraft Maintenance	**28.57%**	10
Fuel Sales	**5.71%**	2
Other (please specify)	**54.29%**	19
Total Respondents: 35		

#	Other (please specify)	Date
1	Guiding service	11/30/2015 10:49 AM
2	B&B with remote fly-out accommodations and flightseeing.	11/29/2015 11:12 AM
3	Hangar rental and parts manufacturing.	11/20/2015 11:49 PM
4	Aerial imagery	11/13/2015 10:52 PM
5	training	11/13/2015 8:26 AM
6	Aircraft Ferry Service	11/13/2015 7:51 AM
7	N/A	11/13/2015 4:12 AM
8	For fun	11/12/2015 10:22 PM
9	U	11/11/2015 1:10 PM
10	Guide Service	11/10/2015 10:01 PM
11	Aircraft parts manufacturer	11/10/2015 7:33 PM
12	Flight school	11/10/2015 7:31 PM
13	Corporate	11/7/2015 12:01 PM
14	Aircraft sales	11/7/2015 11:16 AM
15	Fight instruction	11/6/2015 5:30 PM
16	Flight instruction	11/2/2015 6:18 AM
17	Hanger Owner BGQ Airport	11/1/2015 10:33 AM
18	Aviation Safety Consulting	10/27/2015 10:35 AM

19	aerial photography	10/26/2015 11:01 AM

Q4 Do you own or operate any aircraft within the MSB?

Answered: 231 Skipped: 6



Answer Choices	Responses	
Yes	**71.86%**	166
No	**28.14%**	65
Total		**231**

Q5 Tell us about your aircraft:

Answered: 149 Skipped: 88

Answer Choices	Responses	
Make and Model	100.00%	149

#	Make and Model	Date
1	Cessna 180	11/30/2015 9:53 PM
2	C172S	11/30/2015 3:11 PM
3	Piper	11/30/2015 3:04 PM
4	Piper Super Cub	11/30/2015 10:51 AM
5	Cessna 180	11/29/2015 5:05 PM
6	C206	11/29/2015 2:25 PM
7	Cessna Skywagon 1975 A-185F	11/29/2015 11:14 AM
8	pa18	11/29/2015 5:01 AM
9	Supercub	11/25/2015 7:17 PM
10	Piper pa-12	11/25/2015 5:35 PM
11	PA-22-160	11/25/2015 3:25 PM
12	c180	11/25/2015 11:53 AM
13	Maule	11/25/2015 11:27 AM
14	Cessna C 170b	11/24/2015 6:31 PM
15	experimental	11/24/2015 4:14 PM
16	Cessna 180	11/24/2015 4:07 PM
17	C185	11/24/2015 4:06 PM
18	Cessna 170B	11/24/2015 1:45 PM
19	c-185	11/24/2015 1:13 PM
20	Cessna 206	11/22/2015 8:08 AM
21	Cessna 180	11/20/2015 11:51 PM
22	Cessna 185	11/20/2015 2:18 PM
23	Murphy SR2500	11/20/2015 1:18 PM
24	pa24-250	11/20/2015 12:18 PM
25	Piper PA-18	11/20/2015 11:09 AM
26	Cessna U206G	11/20/2015 10:38 AM
27	cessna 180	11/20/2015 9:43 AM
28	cessna 180	11/19/2015 11:07 AM
29	C180H	11/15/2015 5:06 PM
30	Cessna 180	11/14/2015 6:23 PM
31	MOONEY	11/14/2015 1:55 PM
32	C-180	11/13/2015 11:30 PM
33	Piper PA-20	11/13/2015 10:54 PM
34	Cessna 185	11/13/2015 4:52 PM
35	PA-18	11/13/2015 2:32 PM

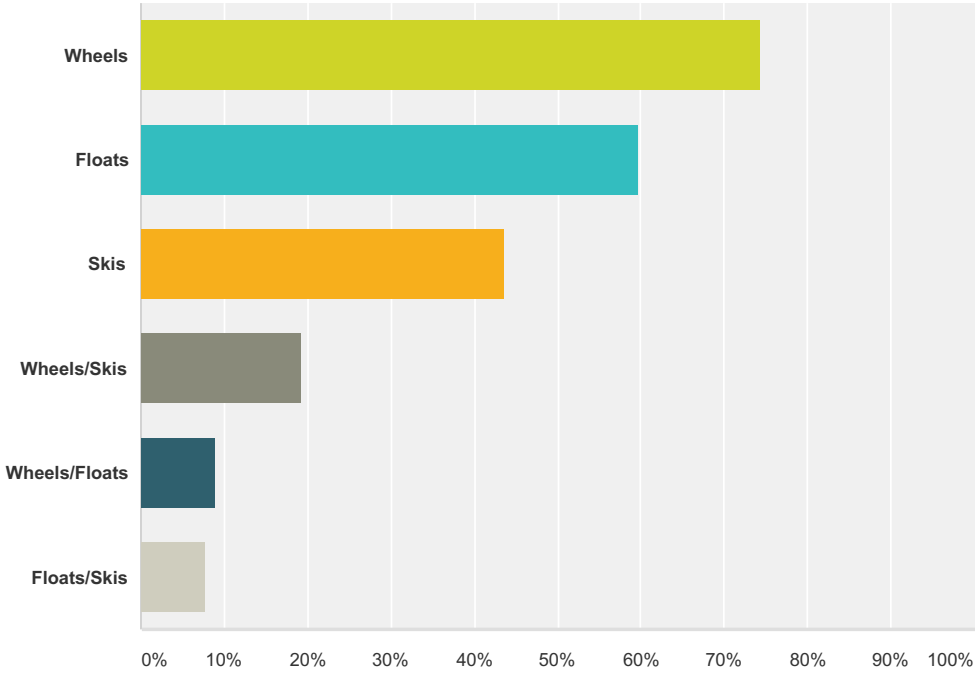
36	Maule M6	11/13/2015 12:18 PM
37	Cessna 206	11/13/2015 10:34 AM
38	Cessna 172	11/13/2015 9:25 AM
39	C180	11/13/2015 9:25 AM
40	Cessna 180	11/13/2015 8:12 AM
41	Cessna 180	11/13/2015 8:12 AM
42	Supercub	11/13/2015 8:03 AM
43	maule m-7	11/13/2015 7:39 AM
44	cessna 180	11/13/2015 7:19 AM
45	PA-18	11/13/2015 6:49 AM
46	cessna 206	11/13/2015 6:41 AM
47	2007 Maule M7	11/13/2015 5:39 AM
48	Cessna 172	11/13/2015 4:13 AM
49	Cessna 180	11/13/2015 3:01 AM
50	Citabria gcbc	11/12/2015 10:24 PM
51	Pa 18	11/12/2015 8:31 AM
52	Piper Supercub	11/11/2015 8:32 PM
53	Piper cub	11/11/2015 1:11 PM
54	C180	11/11/2015 9:41 AM
55	C 180	11/11/2015 8:48 AM
56	Maule M5 220C	11/11/2015 1:00 AM
57	Cessna 185	11/10/2015 10:02 PM
58	Super cub and Cessna 180	11/10/2015 7:35 PM
59	Cessna 206, Cessna 150	11/10/2015 7:34 PM
60	I own 10 aircraft.	11/10/2015 7:32 PM
61	PA18	11/10/2015 5:52 PM
62	Cessna 180	11/10/2015 5:51 PM
63	American champ 7eca	11/10/2015 5:03 PM
64	C-180	11/10/2015 4:55 PM
65	C185, PA18	11/10/2015 4:50 PM
66	Cessna 170B	11/10/2015 4:36 PM
67	Cessna 185	11/10/2015 4:17 PM
68	C170B	11/10/2015 4:05 PM
69	Cessna 206	11/10/2015 3:52 PM
70	Cessna 185	11/10/2015 3:41 PM
71	C180A	11/10/2015 3:37 PM
72	Cessna 185C 1964	11/10/2015 3:14 PM
73	Cessna 180	11/10/2015 11:56 AM
74	experimental	11/9/2015 1:33 PM
75	C-170	11/9/2015 7:38 AM
76	Cessna 185	11/8/2015 2:50 PM
77	Maule M7	11/8/2015 11:01 AM

78	Cessna 170B	11/8/2015 9:28 AM
79	PA-18A	11/8/2015 8:31 AM
80	Maule M-7	11/8/2015 8:27 AM
81	Cessna 180	11/8/2015 7:55 AM
82	Piper PA-18	11/7/2015 3:20 PM
83	PA-18	11/7/2015 12:24 PM
84	Stinson 108	11/7/2015 11:43 AM
85	Cessna U206	11/7/2015 11:16 AM
86	Cessna 206	11/7/2015 11:16 AM
87	Piper PA-18	11/7/2015 9:38 AM
88	pa-18	11/7/2015 8:42 AM
89	Cessna 185	11/7/2015 8:13 AM
90	Cessna 185	11/7/2015 7:19 AM
91	Cessna 206, Robinson R44	11/7/2015 6:54 AM
92	Aviat Husky A1B	11/7/2015 6:52 AM
93	PA-18 160	11/7/2015 6:39 AM
94	1965 Cessna 180H	11/7/2015 4:45 AM
95	Cessna 185	11/6/2015 10:38 PM
96	Champion model 7GCB	11/6/2015 10:22 PM
97	C-180	11/6/2015 9:50 PM
98	Cessna 180	11/6/2015 9:45 PM
99	C-172	11/6/2015 9:25 PM
100	Cessna 185	11/6/2015 9:12 PM
101	C172E	11/6/2015 8:04 PM
102	Cessna 170	11/6/2015 7:31 PM
103	PA-18	11/6/2015 7:21 PM
104	Cessna 172	11/6/2015 6:36 PM
105	cessna 185	11/6/2015 6:23 PM
106	C185	11/6/2015 5:55 PM
107	Cessna 185 st. Floats; Husky A1-B amphib	11/6/2015 5:43 PM
108	Zenith CH 750	11/6/2015 5:31 PM
109	Cessna 180H	11/6/2015 5:08 PM
110	Cessna 185	11/6/2015 5:01 PM
111	Cessna 180	11/6/2015 4:38 PM
112	Cessna 180	11/6/2015 4:34 PM
113	185F	11/6/2015 4:32 PM
114	Piper PA-18 Super Cub	11/6/2015 4:21 PM
115	Rans S-7, Plan to purchase a Maule	11/6/2015 3:57 PM
116	Piper PA-18	11/6/2015 3:37 PM
117	pa-12	11/6/2015 3:11 PM
118	AS350	11/6/2015 3:07 PM
119	cessna 180, T-Craft, Piper J3	11/6/2015 3:06 PM

120	Air Creation GTE	11/6/2015 3:01 PM
121	Aeronca 15AC	11/6/2015 2:59 PM
122	PA18-150	11/6/2015 2:56 PM
123	Piper PA-12	11/4/2015 10:32 AM
124	7. Pa-22/20s	11/2/2015 6:20 AM
125	PA-18 and C180	11/1/2015 10:36 AM
126	Cessna 180	10/31/2015 9:14 PM
127	C-180	10/31/2015 9:11 AM
128	Cessna 180H	10/31/2015 2:45 AM
129	Cessna 172S	10/30/2015 8:01 PM
130	Cessna 172	10/30/2015 5:09 PM
131	C180	10/30/2015 4:44 PM
132	Maule M7	10/30/2015 12:34 PM
133	Piper PA-18	10/30/2015 12:17 PM
134	cessna 180J	10/30/2015 9:07 AM
135	Pa-12	10/30/2015 6:19 AM
136	cessna206	10/30/2015 5:54 AM
137	Cessna 180	10/30/2015 5:11 AM
138	N1562A	10/30/2015 12:20 AM
139	Bellanca Citabria 7GCBC	10/29/2015 11:38 PM
140	Cessna 206	10/29/2015 9:35 AM
141	Cessna 185, DeHavilland Beaver, Otter	10/28/2015 4:17 PM
142	Cessna 150L	10/27/2015 11:08 AM
143	PA-28	10/27/2015 10:36 AM
144	C-185	10/26/2015 11:02 AM
145	Cessna 120	10/25/2015 1:11 PM
146	Cessna 175 with float kit and Lycoming 180 Hp engine and constant speed prop	10/24/2015 7:23 PM
147	PA-18	10/24/2015 6:33 PM
148	Cessna 175 with float kit and lycoming 180 hp with constant speed prop	10/24/2015 3:30 PM
149	Cessna 180	10/22/2015 6:14 PM

Q6 Gear:

Answered: 156 Skipped: 81



Answer Choices	Responses	
Wheels	**74.36%**	116
Floats	**59.62%**	93
Skis	**43.59%**	68
Wheels/Skis	**19.23%**	30
Wheels/Floats	**8.97%**	14
Floats/Skis	**7.69%**	12
Total Respondents: 156		

Q7 Where is the aircraft based?

Answered: 152 Skipped: 85

#	Responses	Date
1	Wolf lake	11/30/2015 9:53 PM
2	PAQ	11/30/2015 3:11 PM
3	Palmer	11/30/2015 3:04 PM
4	Talkeetna	11/30/2015 10:51 AM
5	Talkeetna	11/29/2015 5:05 PM
6	Lake Hood Summer, Merrill Field Winter	11/29/2015 2:25 PM
7	Seymour Lake (3A3)	11/29/2015 11:14 AM
8	wasilla	11/29/2015 5:01 AM
9	Palmer	11/25/2015 7:17 PM
10	Big lake	11/25/2015 5:35 PM
11	Merril currently	11/25/2015 3:25 PM
12	Lake Hood	11/25/2015 11:53 AM
13	PAWS	11/24/2015 6:31 PM
14	Lincoln village air park	11/24/2015 4:07 PM
15	PAQ	11/24/2015 4:06 PM
16	Rustic Wilderness, Willow	11/24/2015 4:00 PM
17	Lake Hood	11/24/2015 1:45 PM
18	soldotna	11/24/2015 1:13 PM
19	Lake Hood	11/22/2015 8:08 AM
20	Lake Hood	11/20/2015 11:51 PM
21	Lower Fire Lake	11/20/2015 2:18 PM
22	Lake Hood	11/20/2015 1:18 PM
23	Merrill	11/20/2015 12:18 PM
24	Lake Hood	11/20/2015 11:09 AM
25	LHD	11/20/2015 10:38 AM
26	Anchorage	11/20/2015 9:43 AM
27	anchorage	11/19/2015 11:07 AM
28	65AK, 3K9	11/15/2015 5:06 PM
29	Flat Lake	11/14/2015 6:23 PM
30	LWT	11/14/2015 1:55 PM
31	Lake Hood	11/13/2015 11:30 PM
32	MRI	11/13/2015 10:54 PM
33	Lake Hood	11/13/2015 4:52 PM
34	TKA	11/13/2015 2:32 PM
35	Wolf Lake	11/13/2015 12:18 PM
36	Willow Airport	11/13/2015 10:34 AM
37	Based at Lake Hood	11/13/2015 9:25 AM

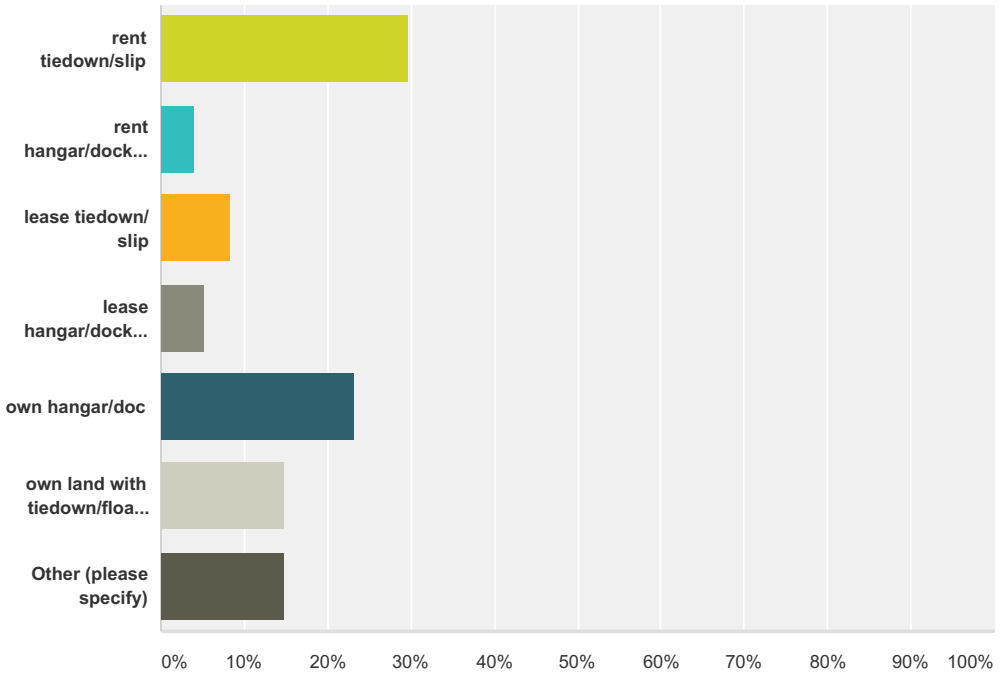
38	ENA	11/13/2015 9:25 AM
39	private lake	11/13/2015 8:27 AM
40	Private	11/13/2015 8:12 AM
41	Lake Hood	11/13/2015 8:12 AM
42	Talkeetna	11/13/2015 8:03 AM
43	lake lucille	11/13/2015 7:39 AM
44	June Lake	11/13/2015 7:19 AM
45	PALH	11/13/2015 6:49 AM
46	lake hood	11/13/2015 6:41 AM
47	LHD	11/13/2015 5:39 AM
48	Merrill Field	11/13/2015 4:13 AM
49	Lake Hood	11/13/2015 3:01 AM
50	Anderson or lake hood	11/12/2015 10:24 PM
51	Paws	11/12/2015 8:31 AM
52	PAWS	11/11/2015 8:32 PM
53	Willow	11/11/2015 1:11 PM
54	Meadow lakes	11/11/2015 9:41 AM
55	PAWS	11/11/2015 8:48 AM
56	Wasilla Lake	11/11/2015 1:00 AM
57	Lake	11/10/2015 10:02 PM
58	anderson lake	11/10/2015 7:35 PM
59	Wasilla	11/10/2015 7:34 PM
60	Palmer	11/10/2015 7:32 PM
61	Paaq	11/10/2015 5:52 PM
62	Lincoln Air Park	11/10/2015 5:51 PM
63	Wolf lake	11/10/2015 5:03 PM
64	Birchwood	11/10/2015 4:55 PM
65	Pasw	11/10/2015 4:50 PM
66	4AK6	11/10/2015 4:36 PM
67	Palmer	11/10/2015 4:17 PM
68	PASX	11/10/2015 4:05 PM
69	Finger Lake	11/10/2015 3:52 PM
70	Anderson Lake Airstrip	11/10/2015 3:41 PM
71	Paaq	11/10/2015 3:37 PM
72	Anderson Lake	11/10/2015 3:14 PM
73	PALH	11/10/2015 11:56 AM
74	meadow lakes	11/9/2015 1:33 PM
75	0AK1	11/9/2015 7:38 AM
76	Birchwood	11/8/2015 2:50 PM
77	LHD	11/8/2015 11:01 AM
78	Stephan Lake and Lincoln Air Park	11/8/2015 10:06 AM
79	Lake Hood	11/8/2015 9:28 AM

80	77AK	11/8/2015 8:31 AM
81	Fire Lake/AK24	11/8/2015 8:27 AM
82	Lake Hood / Campbell Lake	11/8/2015 7:55 AM
83	PABV	11/7/2015 11:52 PM
84	Lake Hood	11/7/2015 3:20 PM
85	hangar private finger lake	11/7/2015 2:14 PM
86	ak44	11/7/2015 12:24 PM
87	Lake hood	11/7/2015 11:43 AM
88	Anc	11/7/2015 11:16 AM
89	willow	11/7/2015 8:42 AM
90	Palmer	11/7/2015 8:13 AM
91	Meadow Lakes	11/7/2015 7:19 AM
92	Airpark	11/7/2015 6:54 AM
93	Wrangell Mountains	11/7/2015 6:52 AM
94	AK01	11/7/2015 6:39 AM
95	Seymour Lake "3A3"	11/7/2015 4:45 AM
96	Currently Lake Hood but looking to move it to the valley	11/6/2015 10:38 PM
97	Auburn, Ca	11/6/2015 9:50 PM
98	PALH	11/6/2015 9:45 PM
99	Kasilof	11/6/2015 9:25 PM
100	Fairbanks	11/6/2015 9:12 PM
101	PAWS	11/6/2015 8:04 PM
102	4AK6	11/6/2015 7:31 PM
103	Wolf Lake Airport	11/6/2015 7:21 PM
104	Lake hood	11/6/2015 6:36 PM
105	lake hood	11/6/2015 6:23 PM
106	0AK1	11/6/2015 5:55 PM
107	Sand Lake ANCH.	11/6/2015 5:43 PM
108	85AK	11/6/2015 5:32 PM
109	Birchwood Airport	11/6/2015 5:31 PM
110	PABV	11/6/2015 5:08 PM
111	Seymour Lake	11/6/2015 5:01 PM
112	Willow Airport	11/6/2015 4:38 PM
113	PABV	11/6/2015 4:34 PM
114	Wolf Lake	11/6/2015 4:32 PM
115	Stephan Lake in summer, hangared at Willow in winter.	11/6/2015 4:24 PM
116	Fire Lake, Eagle River	11/6/2015 4:21 PM
117	4AK6	11/6/2015 3:57 PM
118	Lake Hood Strip; Campbell Lake	11/6/2015 3:37 PM
119	International	11/6/2015 3:11 PM
120	Wolf Lake	11/6/2015 3:07 PM
121	Willow and Houston	11/6/2015 3:06 PM

122	Willow Shirley Lake strip	11/6/2015 3:01 PM
123	Lake Hood	11/6/2015 2:59 PM
124	PAMR	11/6/2015 2:56 PM
125	Lake Hood	11/6/2015 2:15 PM
126	AK50	11/4/2015 10:32 AM
127	Talkeetna	11/2/2015 6:20 AM
128	PABG	11/1/2015 10:36 AM
129	Big lake	10/31/2015 9:14 PM
130	TKA	10/31/2015 9:11 AM
131	Lake Hood	10/31/2015 2:45 AM
132	PAMR	10/30/2015 8:01 PM
133	Paws	10/30/2015 5:09 PM
134	Fire lake on floats, butte on wheels	10/30/2015 4:44 PM
135	Lhd	10/30/2015 12:34 PM
136	Palmer Airport	10/30/2015 12:17 PM
137	06AK	10/30/2015 9:07 AM
138	Palh	10/30/2015 6:19 AM
139	PASX	10/30/2015 5:54 AM
140	PASX	10/30/2015 5:11 AM
141	PAUO	10/30/2015 12:20 AM
142	PAMR	10/29/2015 11:38 PM
143	Nenana	10/29/2015 9:35 AM
144	TKA	10/28/2015 4:17 PM
145	Wolf Lake	10/27/2015 11:08 AM
146	Alaska	10/27/2015 10:36 AM
147	FAI	10/26/2015 11:02 AM
148	9AK6	10/25/2015 1:11 PM
149	Talkeetna	10/24/2015 7:23 PM
150	Patk	10/24/2015 6:33 PM
151	Talkeetna	10/24/2015 3:30 PM
152	Merrill field	10/22/2015 6:14 PM

Q8 Type of space:

Answered: 155 Skipped: 82



Answer Choices	Responses	
rent tiedown/slip	**29.68%**	46
rent hangar/dock space	**3.87%**	6
lease tiedown/ slip	**8.39%**	13
lease hangar/dock space	**5.16%**	8
own hangar/doc	**23.23%**	36
own land with tiedown/floatplane slip	**14.84%**	23
Other (please specify)	**14.84%**	23
Total		**155**

#	Other (please specify)	Date
1	Lease floatplane slip from June through October. Own land on Village Airstrip for remainder of year.	11/30/2015 10:51 AM
2	Maintenance Hanger adjacent tie-down	11/25/2015 3:25 PM
3	red Shirt lake	11/22/2015 8:08 AM
4	Friends property.	11/13/2015 2:32 PM
5	I own 2 hangers & lease 2 lots from DOT	11/13/2015 10:34 AM
6	rent tiedown at PATK	11/13/2015 8:03 AM
7	I own a commercial hanger at Palmer. Have to beg for float parking.	11/10/2015 7:32 PM
8	Own land with floatplane slip, and own hanger on Johnson Rd.	11/8/2015 10:06 AM
9	BLM land	11/7/2015 12:24 PM

10	Occasionally fly into Palmer and stay in transient parking. Tried to find a hangar to buy, but airport leases were too one-sided with no accommodation to the airplane owner.	11/7/2015 6:52 AM
11	Lease slip and tie down, also own waterfront at big lake with floatplane slip	11/6/2015 9:45 PM
12	Private airstrip.	11/6/2015 9:25 PM
13	Own a Hanger, Plan to put the Maule on Floats	11/6/2015 3:57 PM
14	rent tie down (Wheels) onw land with float slip	11/6/2015 3:37 PM
15	I own a house on a lake in Houston and have lease at the willow airport	11/6/2015 3:06 PM
16	Stowed in trailer On lot	11/6/2015 3:01 PM
17	Private tie down	11/4/2015 10:32 AM
18	All of the above	11/2/2015 6:20 AM
19	Flight school	10/30/2015 8:01 PM
20	Tka state airport lease (own building and hangar)	10/28/2015 4:17 PM
21	aircraft parked in front yard with access to 9AK6	10/25/2015 1:11 PM
22	Rent space on wheels at Talkeetna Airport; floats problematic because no locally available slips	10/24/2015 7:23 PM
23	Have floatplane acces via peronal property adjacent	10/24/2015 3:30 PM

Q9 If you had to wait to get parking space for this aircraft, how long was the wait?

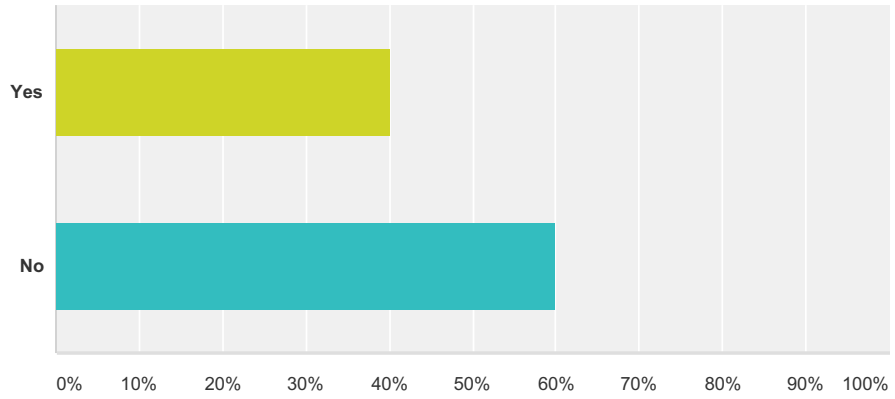
Answered: 65 Skipped: 172

#	Responses	Date
1	2002-2012 10 Years	11/29/2015 2:25 PM
2	0	11/25/2015 3:25 PM
3	Long	11/25/2015 11:53 AM
4	5 YEARS	11/24/2015 4:06 PM
5	Does not apply	11/24/2015 4:00 PM
6	17 years	11/20/2015 11:51 PM
7	No	11/20/2015 2:18 PM
8	5 years	11/20/2015 1:18 PM
9	11 years	11/20/2015 11:09 AM
10	10 years	11/20/2015 10:38 AM
11	7 years	11/20/2015 9:43 AM
12	10 years	11/19/2015 11:07 AM
13	N/A	11/13/2015 10:54 PM
14	15 Years	11/13/2015 4:52 PM
15	The wait for wheel tied down was 6 months. I am on the float plane list which is 10 years. I currently rent a commercial tie down in order to fly floats	11/13/2015 9:25 AM
16	20 years	11/13/2015 8:12 AM
17	15 months	11/13/2015 8:03 AM
18	10 years	11/13/2015 6:49 AM
19	3 years	11/13/2015 6:41 AM
20	0	11/13/2015 4:13 AM
21	3 years	11/13/2015 3:01 AM
22	No wait	11/11/2015 1:00 AM
23	1 year	11/10/2015 7:34 PM
24	No where to get in line	11/10/2015 7:32 PM
25	5 years	11/10/2015 4:50 PM
26	3 months	11/10/2015 4:17 PM
27	9 years	11/10/2015 11:56 AM
28	No wait	11/8/2015 2:50 PM
29	Float slip 10 years	11/8/2015 11:01 AM
30	15 years	11/8/2015 9:28 AM
31	N/A	11/8/2015 8:31 AM
32	2 years	11/8/2015 8:27 AM
33	10 Years	11/8/2015 7:55 AM
34	2 yr.	11/7/2015 3:20 PM
35	2 yrs	11/7/2015 2:14 PM
36	Approx. 10 years	11/7/2015 11:43 AM

37	8years	11/7/2015 11:16 AM
38	one year	11/7/2015 9:38 AM
39	N/A	11/7/2015 4:45 AM
40	18 years	11/6/2015 10:38 PM
41	None	11/6/2015 9:45 PM
42	I got the last available non-electric tiedown and waited two months for a tiedown with electric.	11/6/2015 8:04 PM
43	2 years (1975)	11/6/2015 6:23 PM
44	I always had a hanger since I moved to the valley.	11/6/2015 5:55 PM
45	20 yrs.	11/6/2015 5:43 PM
46	3 months	11/6/2015 4:34 PM
47	N/A	11/6/2015 4:24 PM
48	NA	11/6/2015 4:21 PM
49	N/A	11/6/2015 3:01 PM
50	Three years..	11/6/2015 2:59 PM
51	Six years	11/6/2015 2:15 PM
52	N.a.	10/31/2015 9:14 PM
53	16 years	10/31/2015 2:45 AM
54	3 weeks	10/30/2015 5:09 PM
55	5 months	10/30/2015 12:17 PM
56	none	10/30/2015 5:54 AM
57	There was no wait for me to get my tie-down space.	10/30/2015 12:20 AM
58	Too long.	10/29/2015 11:38 PM
59	None	10/29/2015 9:35 AM
60	0	10/28/2015 4:17 PM
61	0	10/26/2015 11:02 AM
62	N/A	10/25/2015 1:11 PM
63	No wait at Talkeetna airport.	10/24/2015 7:23 PM
64	None available	10/24/2015 6:33 PM
65	No wait at airport No available public float slips at nearby lakes	10/24/2015 3:30 PM

Q10 Do you operate an additional aircraft?

Answered: 157 Skipped: 80



Answer Choices	Responses	
Yes	**40.13%**	63
No	**59.87%**	94
Total		**157**

Q11 Tell us about your aircraft:

Answered: 58 Skipped: 179

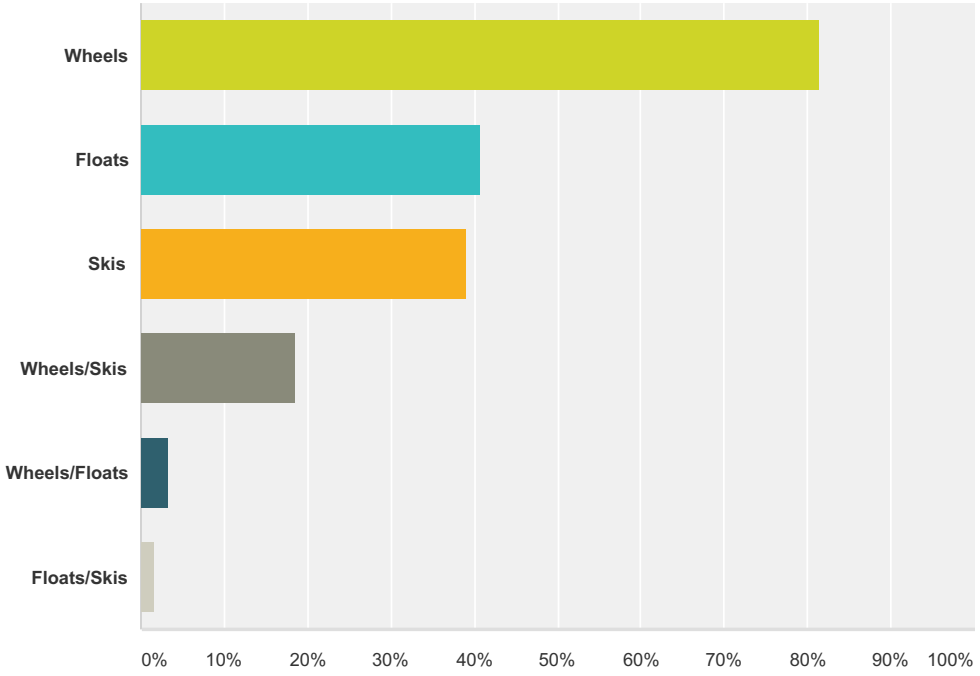
Answer Choices	Responses	
Make and Model	100.00%	58

#	Make and Model	Date
1	Cessna Skywagon 1966 180-H	11/29/2015 11:15 AM
2	Cessna	11/25/2015 7:17 PM
3	Piper pa-18	11/25/2015 5:35 PM
4	Pa-18	11/24/2015 4:07 PM
5	pa 18	11/24/2015 1:14 PM
6	Super Cub	11/22/2015 8:09 AM
7	Cessna 150	11/14/2015 6:23 PM
8	Cessna 172	11/13/2015 10:55 PM
9	Super Cub	11/13/2015 4:52 PM
10	Maule MX7	11/13/2015 10:34 AM
11	BC12D	11/13/2015 9:26 AM
12	Cessna 180	11/13/2015 8:12 AM
13	Cessna 172 taildragger	11/13/2015 8:04 AM
14	m-5	11/13/2015 7:40 AM
15	taylorcraft	11/13/2015 7:20 AM
16	Cessna 152	11/13/2015 6:50 AM
17	piper cub	11/13/2015 6:42 AM
18	C182	11/13/2015 5:40 AM
19	PA-20	11/13/2015 4:13 AM
20	Cessna 185	11/11/2015 8:33 PM
21	Pa18	11/11/2015 9:41 AM
22	Cessna 206	11/10/2015 7:35 PM
23	Three Cubs,taylorcraft , 3 cessnas	11/10/2015 7:33 PM
24	Supercub	11/10/2015 5:52 PM
25	PA-11	11/10/2015 4:55 PM
26	Pa18	11/10/2015 4:51 PM
27	pa18	11/10/2015 4:05 PM
28	PA-18	11/10/2015 3:53 PM
29	Taylocraft BC12D 1946	11/10/2015 3:15 PM
30	C-182	11/9/2015 7:39 AM
31	Piper PA-18	11/8/2015 9:29 AM
32	Piper PA-32	11/8/2015 8:28 AM
33	Cessna 185	11/7/2015 11:44 AM
34	Cessna 206	11/7/2015 11:17 AM
35	Pa-18	11/7/2015 8:14 AM

36	Piper J3	11/7/2015 7:19 AM
37	Robinson R44	11/7/2015 6:55 AM
38	Aerotreck 220	11/7/2015 6:54 AM
39	DHC-2	11/6/2015 10:38 PM
40	PA32	11/6/2015 9:51 PM
41	Cessna172	11/6/2015 7:31 PM
42	RV-4	11/6/2015 7:22 PM
43	piper pa-12	11/6/2015 6:24 PM
44	PA18	11/6/2015 5:56 PM
45	PA18	11/6/2015 5:33 PM
46	Replica Super Cub	11/6/2015 5:03 PM
47	Piper J3	11/6/2015 4:39 PM
48	RV4	11/6/2015 4:26 PM
49	C-172	11/6/2015 3:12 PM
50	182 Cessna	11/6/2015 3:03 PM
51	7. PA-22/20's	11/2/2015 6:21 AM
52	C305A	10/31/2015 9:12 AM
53	Cessna 170	10/30/2015 12:35 PM
54	experimental super cub	10/30/2015 9:08 AM
55	husky	10/30/2015 5:55 AM
56	Maule M7	10/29/2015 9:36 AM
57	PA12	10/27/2015 10:37 AM
58	PA 12	10/24/2015 7:25 PM

Q12 Gear:

Answered: 59 Skipped: 178



Answer Choices	Responses	
Wheels	**81.36%**	48
Floats	**40.68%**	24
Skis	**38.98%**	23
Wheels/Skis	**18.64%**	11
Wheels/Floats	**3.39%**	2
Floats/Skis	**1.69%**	1
Total Respondents: 59		

Q13 Where is the aircraft based?

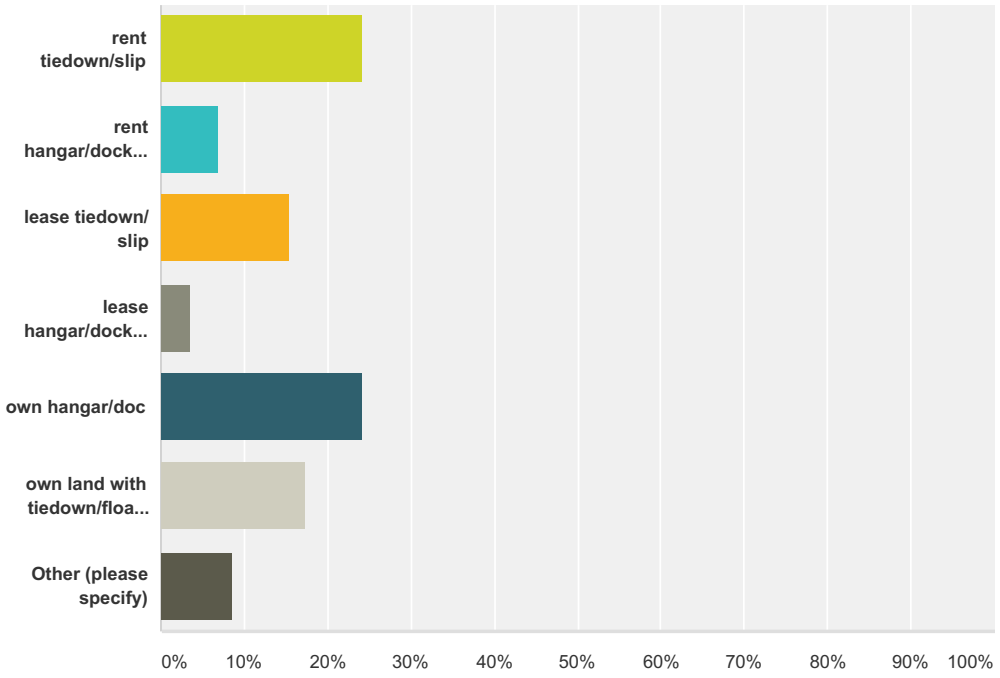
Answered: 55 Skipped: 182

#	Responses	Date
1	Leisurewood Airstrip	11/29/2015 11:15 AM
2	Palmer	11/25/2015 7:17 PM
3	Big lake	11/25/2015 5:35 PM
4	Lincoln Village Airpark	11/24/2015 4:07 PM
5	soldotna	11/24/2015 1:14 PM
6	Lake Hood	11/22/2015 8:09 AM
7	Birchwood Airport	11/14/2015 6:23 PM
8	MRI	11/13/2015 10:55 PM
9	Lake Hood	11/13/2015 4:52 PM
10	Willow Airport	11/13/2015 10:34 AM
11	GZ41	11/13/2015 9:26 AM
12	Merrill Field	11/13/2015 8:12 AM
13	PATK	11/13/2015 8:04 AM
14	mirror lake	11/13/2015 7:40 AM
15	Big Lake	11/13/2015 6:50 AM
16	lake hood	11/13/2015 6:42 AM
17	LHD	11/13/2015 5:40 AM
18	Merrill Field	11/13/2015 4:13 AM
19	Paws	11/11/2015 8:33 PM
20	Wasilla	11/10/2015 7:35 PM
21	Almer	11/10/2015 7:33 PM
22	Lincoln Air Park	11/10/2015 5:52 PM
23	Birchwood	11/10/2015 4:55 PM
24	Palh	11/10/2015 4:51 PM
25	pasx	11/10/2015 4:05 PM
26	Wasilla	11/10/2015 3:53 PM
27	Anderson Lake	11/10/2015 3:15 PM
28	0AK1	11/9/2015 7:39 AM
29	Merrill	11/8/2015 9:29 AM
30	AK-24	11/8/2015 8:28 AM
31	Lake hood	11/7/2015 11:44 AM
32	PAMR	11/7/2015 11:17 AM
33	Palmer	11/7/2015 8:14 AM
34	Meadow Lakes	11/7/2015 7:19 AM
35	Wasilla	11/7/2015 6:54 AM
36	PALH	11/6/2015 10:38 PM
37	Big Lake, AK	11/6/2015 9:51 PM

38	4AK6	11/6/2015 7:31 PM
39	Wolf Lake Airport	11/6/2015 7:22 PM
40	anchorage	11/6/2015 6:24 PM
41	0AK1	11/6/2015 5:56 PM
42	85AK	11/6/2015 5:33 PM
43	Leisurewood Airstrip	11/6/2015 5:03 PM
44	Willow Airport	11/6/2015 4:39 PM
45	It lives out of state for now.	11/6/2015 4:26 PM
46	International	11/6/2015 3:12 PM
47	Willow public	11/6/2015 3:03 PM
48	Talkeetna	11/2/2015 6:21 AM
49	TKA	10/31/2015 9:12 AM
50	9ak5	10/30/2015 12:35 PM
51	06AK	10/30/2015 9:08 AM
52	PASX	10/30/2015 5:55 AM
53	Nenana	10/29/2015 9:36 AM
54	Z41	10/27/2015 10:37 AM
55	Talkeetna	10/24/2015 7:25 PM

Q14 Type of space:

Answered: 58 Skipped: 179



Answer Choices	Responses	
rent tiedown/slip	**24.14%**	14
rent hangar/dock space	**6.90%**	4
lease tiedown/ slip	**15.52%**	9
lease hangar/dock space	**3.45%**	2
own hangar/doc	**24.14%**	14
own land with tiedown/floatplane slip	**17.24%**	10
Other (please specify)	**8.62%**	5
Total		**58**

#	Other (please specify)	Date
1	Red Shirt Lake	11/22/2015 8:09 AM
2	I own 2 hangers & lease 2 lots from DOT	11/13/2015 10:34 AM
3	private tiedown	11/13/2015 8:04 AM
4	slip in a another family members name	11/13/2015 6:42 AM
5	On wheels & retractable skis; tied down at Talkeetna Airport. Floats problematic because there are no availalable slips	10/24/2015 7:25 PM

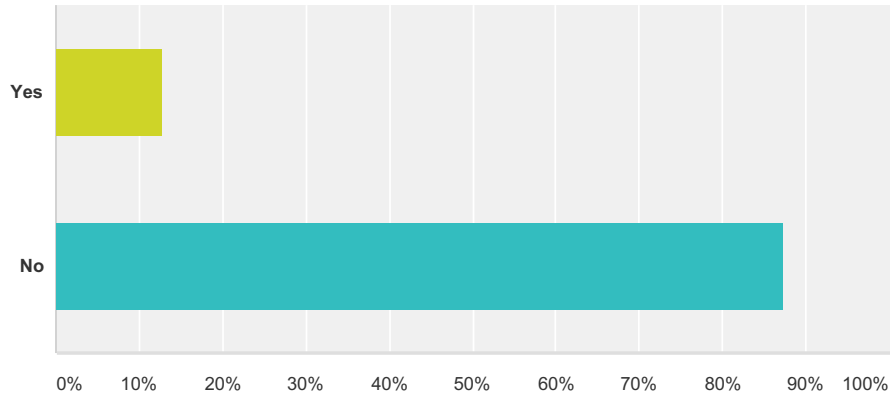
Q15 If you had to wait to get parking space for this aircraft, how long was the wait?

Answered: 16 Skipped: 221

#	Responses	Date
1	N/A	11/13/2015 10:55 PM
2	15 Years	11/13/2015 4:52 PM
3	no wait	11/13/2015 8:12 AM
4	0	11/13/2015 4:13 AM
5	1 year	11/10/2015 7:35 PM
6	10 years	11/10/2015 4:51 PM
7	No wait	11/8/2015 9:29 AM
8	2 years	11/8/2015 8:28 AM
9	Two months	11/7/2015 6:54 AM
10	no wait	11/6/2015 6:24 PM
11	N/A	11/6/2015 4:26 PM
12	No wait	11/6/2015 3:03 PM
13	none	10/30/2015 5:55 AM
14	none	10/29/2015 9:36 AM
15	12 years	10/27/2015 10:37 AM
16	On wheel/skis: no wait. Interminable wait for float slip[	10/24/2015 7:25 PM

Q16 Do you operate an additional aircraft?

Answered: 55 Skipped: 182



Answer Choices	Responses	
Yes	**12.73%**	7
No	**87.27%**	48
Total		**55**

Q17 Tell us about your aircraft:

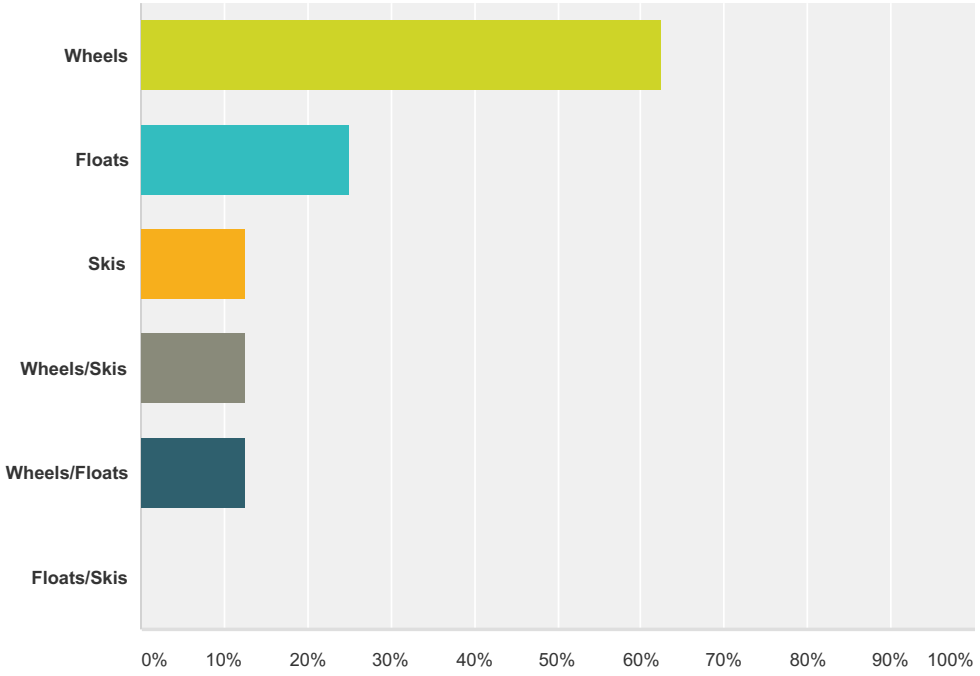
Answered: 7 Skipped: 230

Answer Choices	Responses	
Make and Model	100.00%	7

#	Make and Model	Date
1	Twin Comanche 1964 PA-30 T	11/29/2015 11:16 AM
2	C150	11/13/2015 9:26 AM
3	Cessna 150	11/10/2015 7:35 PM
4	Cessna 172	11/8/2015 9:29 AM
5	Cessna 180	11/7/2015 7:20 AM
6	Taylorcraft	11/6/2015 4:39 PM
7	Piper Super Cruiser	10/28/2015 4:18 PM

Q18 Gear: Aircraft 1

Answered: 8 Skipped: 229



Answer Choices	Responses	
Wheels	62.50%	5
Floats	25.00%	2
Skis	12.50%	1
Wheels/Skis	12.50%	1
Wheels/Floats	12.50%	1
Floats/Skis	0.00%	0
Total Respondents: 8		

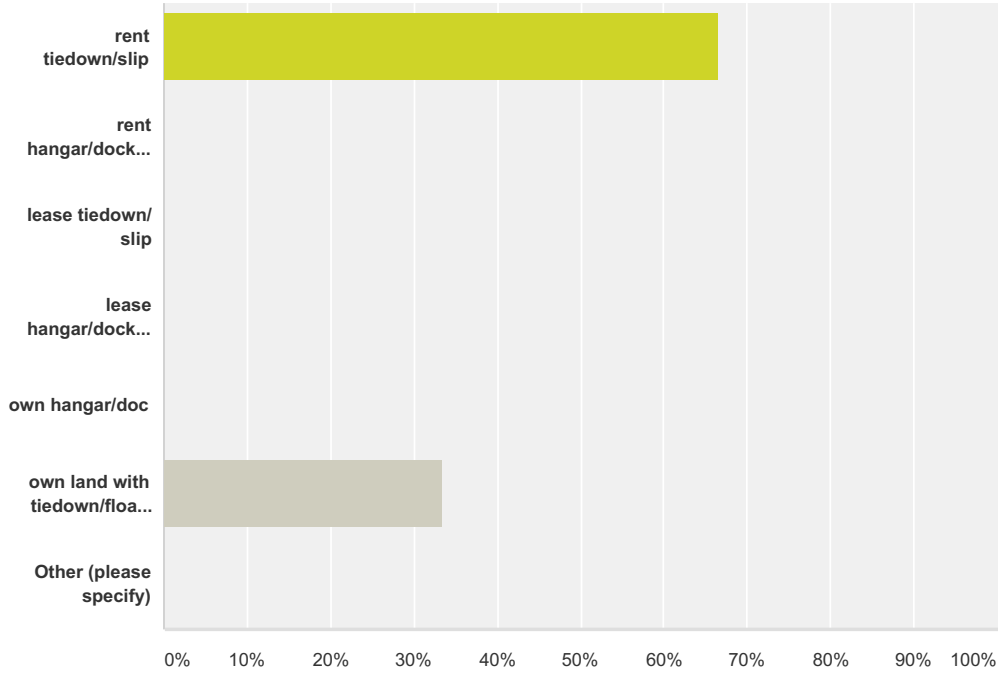
Q19 Where is the aircraft based?

Answered: 6 Skipped: 231

#	Responses	Date
1	3A3 PAWS	11/29/2015 11:16 AM
2	ENA	11/13/2015 9:26 AM
3	Wasilla	11/10/2015 7:35 PM
4	Merrill	11/8/2015 9:29 AM
5	Houston AK.	11/6/2015 4:39 PM
6	Tka	10/28/2015 4:18 PM

Q20 Type of space:

Answered: 6 Skipped: 231



Answer Choices	Responses	
rent tiedown/slip	**66.67%**	4
rent hangar/dock space	**0.00%**	0
lease tiedown/ slip	**0.00%**	0
lease hangar/dock space	**0.00%**	0
own hangar/doc	**0.00%**	0
own land with tiedown/floatplane slip	**33.33%**	2
Other (please specify)	**0.00%**	0
Total		**6**

#	Other (please specify)	Date
	There are no responses.	

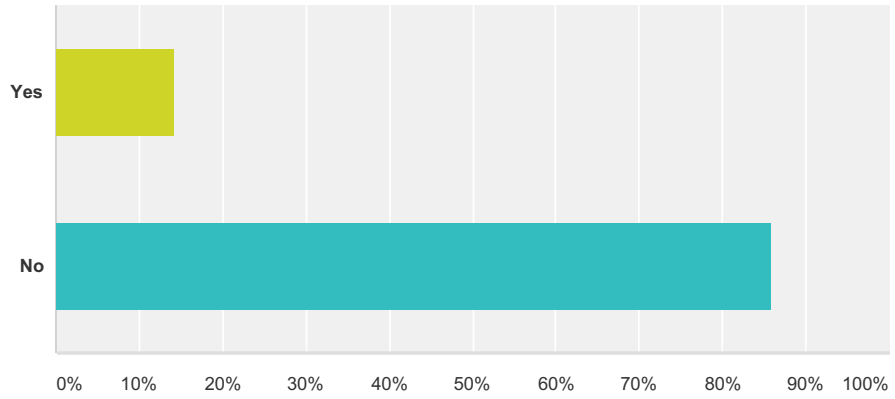
Q21 If you had to wait to get parking space for this aircraft, how long was the wait?

Answered: 2 Skipped: 235

#	Responses	Date
1	1 year	11/10/2015 7:35 PM
2	No wait	11/8/2015 9:29 AM

Q22 Do you operate additional aircraft?

Answered: 7 Skipped: 230



Answer Choices	Responses	
Yes	**14.29%**	1
No	**85.71%**	6
Total		**7**

Q23 Tell us about your aircraft:

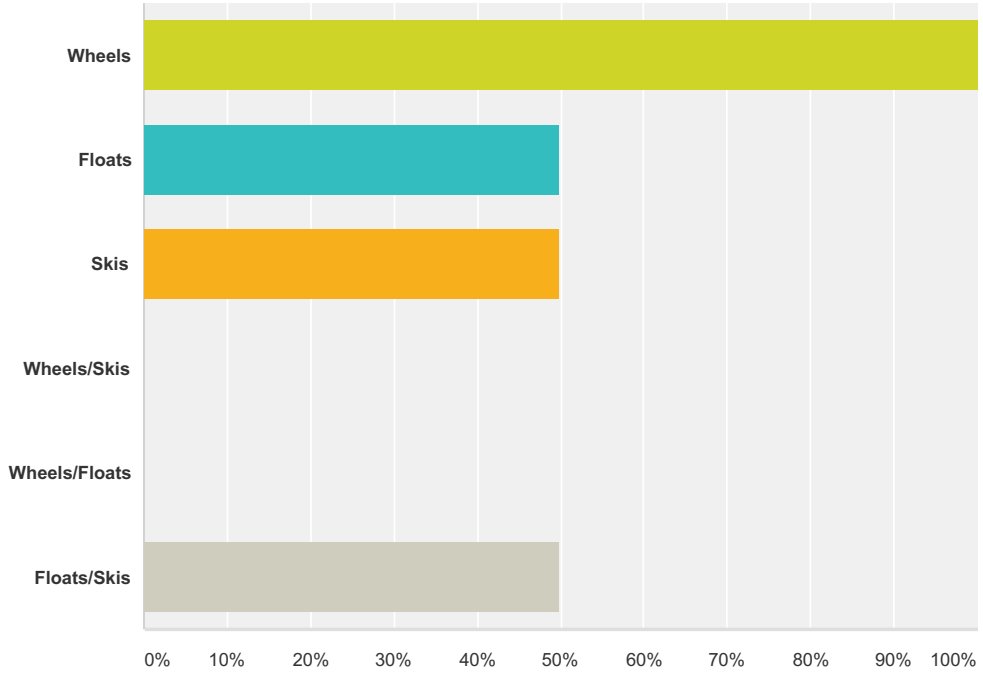
Answered: 1 Skipped: 236

Answer Choices	Responses	
Make and Model	100.00%	1

#	Make and Model	Date
1	Beech BE-50	11/7/2015 7:20 AM

Q24 Gear:

Answered: 2 Skipped: 235



Answer Choices	Responses	
Wheels	100.00%	2
Floats	50.00%	1
Skis	50.00%	1
Wheels/Skis	0.00%	0
Wheels/Floats	0.00%	0
Floats/Skis	50.00%	1
Total Respondents: 2		

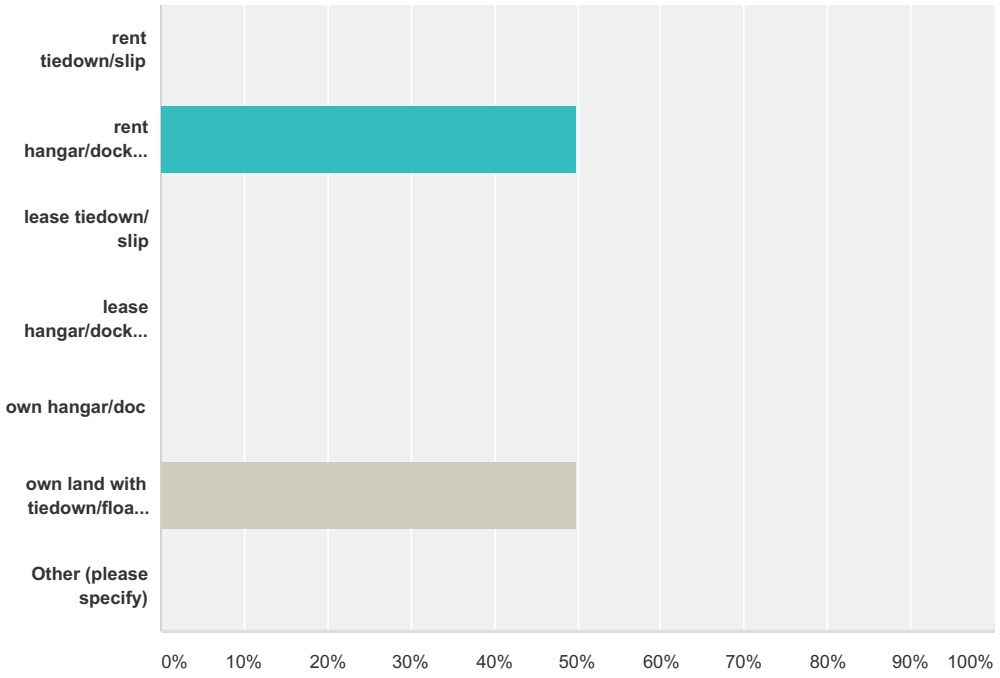
Q25 Where is the aircraft based?

Answered: 0 Skipped: 237

#	Responses	Date
	There are no responses.	

Q26 Type of space:

Answered: 2 Skipped: 235



Answer Choices	Responses	
rent tiedown/slip	**0.00%**	0
rent hangar/dock space	**50.00%**	1
lease tiedown/ slip	**0.00%**	0
lease hangar/dock space	**0.00%**	0
own hangar/doc	**0.00%**	0
own land with tiedown/floatplane slip	**50.00%**	1
Other (please specify)	**0.00%**	0
Total		**2**

#	Other (please specify)	Date
	There are no responses.	

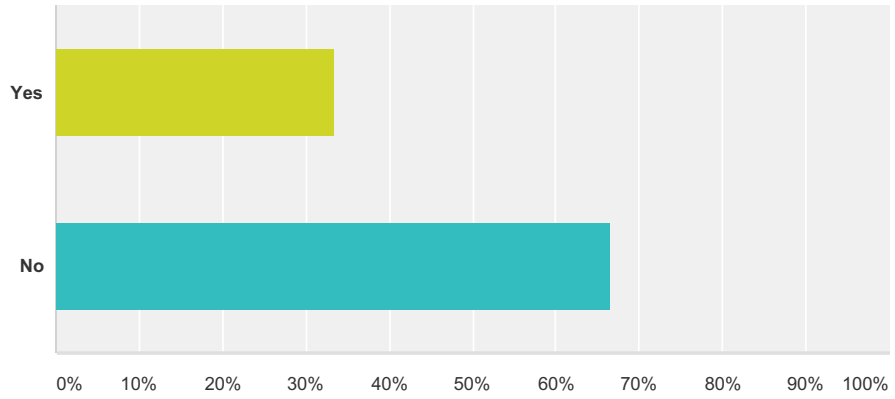
Q27 If you had to wait to get parking space for this aircraft, how long was the wait?

Answered: 0 Skipped: 237

#	Responses	Date
	There are no responses.	

Q28 Do you operate additional aircraft?

Answered: 3 Skipped: 234



Answer Choices	Responses	
Yes	33.33%	1
No	66.67%	2
Total		3

Q29 Tell us about your aircraft:

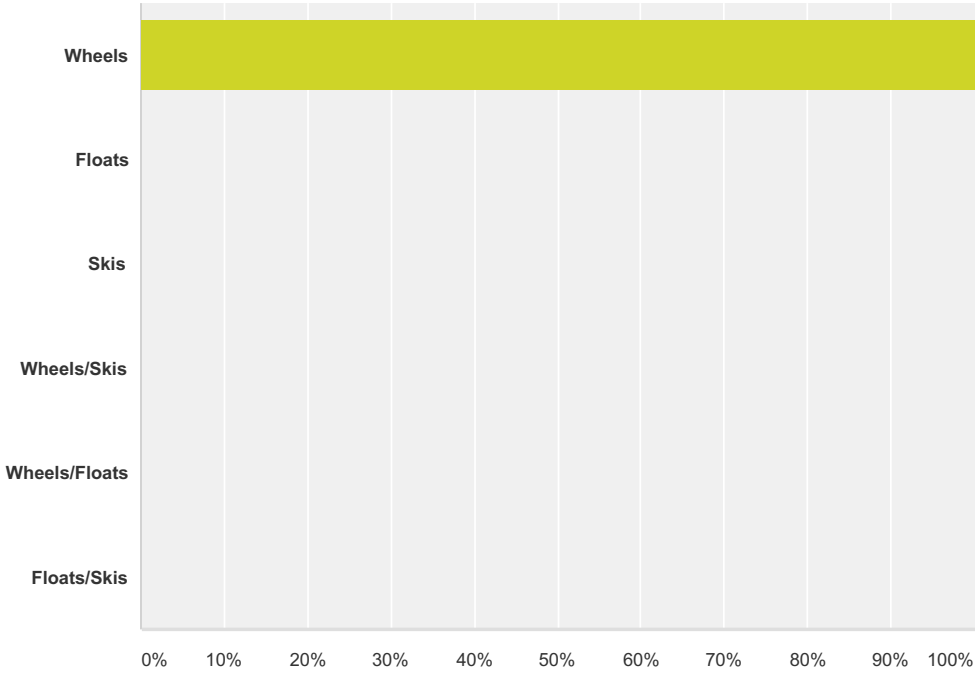
Answered: 1 Skipped: 236

Answer Choices	Responses	
Make and Model	100.00%	1

#	Make and Model	Date
1	Pa-22-20	11/2/2015 6:22 AM

Q30 Gear:

Answered: 1 Skipped: 236



Answer Choices	Responses	
Wheels	**100.00%**	1
Floats	**0.00%**	0
Skis	**0.00%**	0
Wheels/Skis	**0.00%**	0
Wheels/Floats	**0.00%**	0
Floats/Skis	**0.00%**	0
Total Respondents: 1		

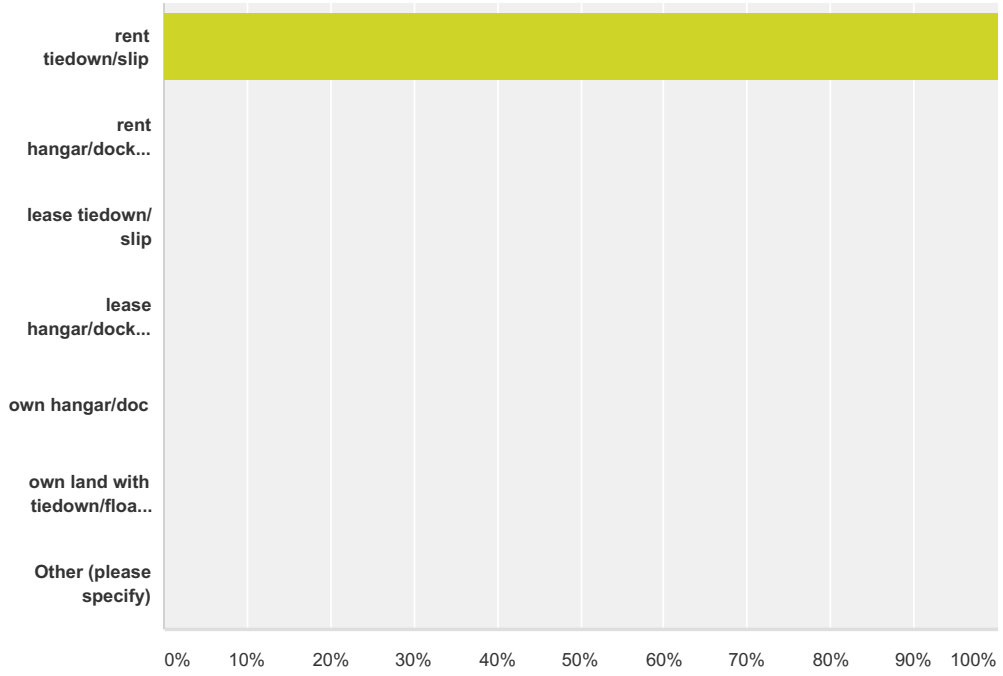
Q31 Where is the aircraft based?

Answered: 0 Skipped: 237

#	Responses	Date
	There are no responses.	

Q32 Type of space:

Answered: 1 Skipped: 236



Answer Choices	Responses	
rent tiedown/slip	**100.00%**	1
rent hangar/dock space	**0.00%**	0
lease tiedown/ slip	**0.00%**	0
lease hangar/dock space	**0.00%**	0
own hangar/doc	**0.00%**	0
own land with tiedown/floatplane slip	**0.00%**	0
Other (please specify)	**0.00%**	0
Total		**1**

#	Other (please specify)	Date
	There are no responses.	

Q33 If you had to wait to get parking space for this aircraft, how long was the wait?

Answered: 0 Skipped: 237

#	Responses	Date
	There are no responses.	

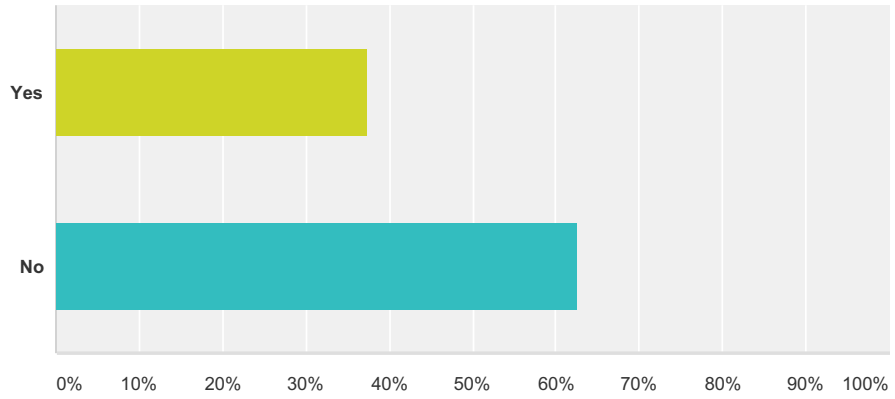
Q34 If you operate more than 5 aircraft please leave any information below:

Answered: 2 Skipped: 235

#	Responses	Date
1	I own artics air academy. I have a lot of aircraft but can't use Palmer for skis. They need a ski strip there. Also, I beg every year for a float tie down on cottonwood lake.	11/10/2015 7:35 PM
2	Yes Flight school	11/2/2015 6:22 AM

Q35 Do you operate as a transient aircraft within the MSB?

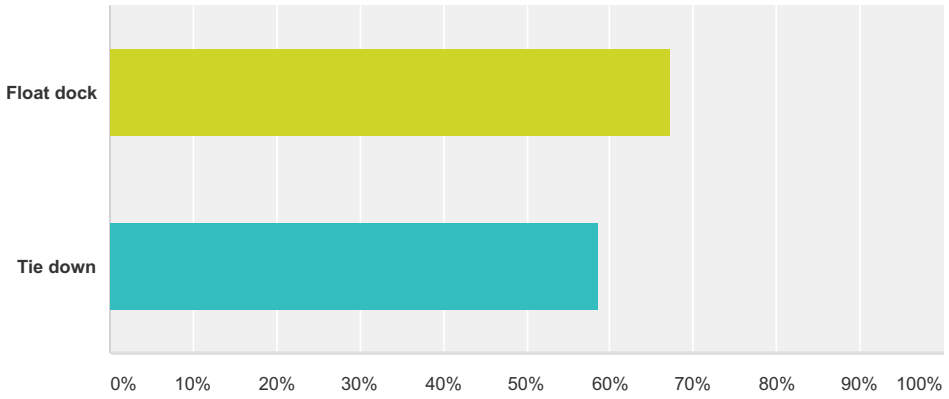
Answered: 179 Skipped: 58



Answer Choices	Responses	
Yes	**37.43%**	67
No	**62.57%**	112
Total		**179**

Q36 What transient facilities would you use at a new facility?

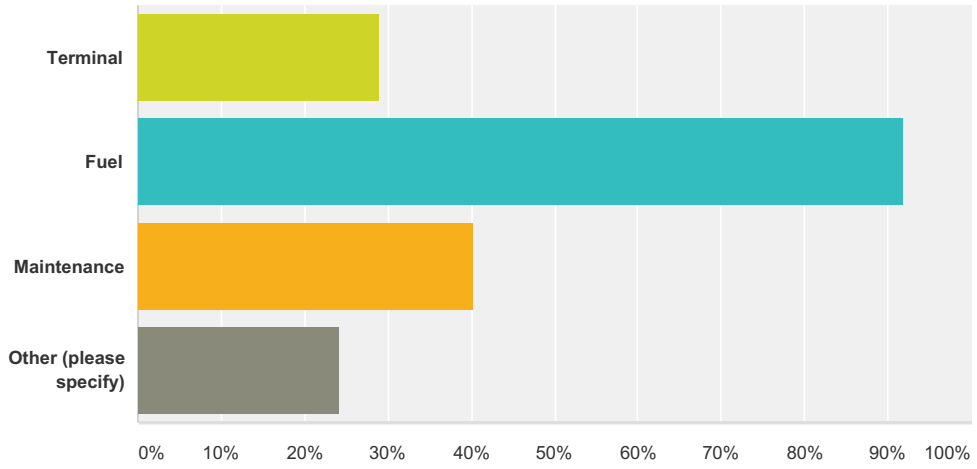
Answered: 58 Skipped: 179



Answer Choices	Responses	
Float dock	**67.24%**	39
Tie down	**58.62%**	34
Total Respondents: 58		

Q37 Are there services, as a transient aircraft, you would use at a new facility?

Answered: 62 Skipped: 175

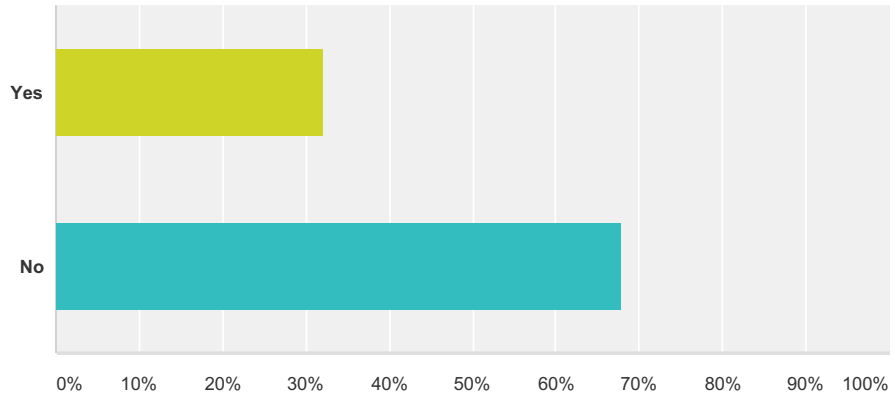


Answer Choices	Responses	
Terminal	**29.03%**	18
Fuel	**91.94%**	57
Maintenance	**40.32%**	25
Other (please specify)	**24.19%**	15
Total Respondents: 62		

#	Other (please specify)	Date
1	Avionics	11/25/2015 3:25 PM
2	WX	11/24/2015 4:06 PM
3	None	11/22/2015 8:10 AM
4	i wouldn't have a reason to go to a new facility	11/13/2015 10:56 PM
5	Car Rental	11/13/2015 9:26 AM
6	adequate car parking for customers at dock locations	11/13/2015 8:04 AM
7	Hangar space	11/10/2015 5:08 PM
8	food lounge	11/10/2015 4:06 PM
9	Access to MSB businesses if close enough.	11/7/2015 3:21 PM
10	Transient parking	11/6/2015 10:39 PM
11	Avoid severe crosswinds Sand Lk	11/6/2015 5:44 PM
12	restaurant	11/6/2015 5:09 PM
13	Internet service	11/6/2015 4:52 PM
14	AWAS WITH CAMERAS	11/6/2015 3:05 PM
15	Just kidding, i don't :)	11/6/2015 8:41 AM

Q38 Do you plan to obtain additional aircraft in the next five years?

Answered: 180 Skipped: 57



Answer Choices	Responses	
Yes	**32.22%**	58
No	**67.78%**	122
Total		**180**

Q39 What kind of aircraft and what kind of gear do you plan to obtain?

Answered: 52 Skipped: 185

#	Responses	Date
1	Cessna or Piper float plane	11/30/2015 3:12 PM
2	Cessna 180, wheels, ski's and floats	11/30/2015 10:52 AM
3	Unknown	11/24/2015 4:08 PM
4	Super Cub	11/20/2015 1:19 PM
5	PA12/18, wheels,skis	11/15/2015 5:08 PM
6	LOW WING - COMPLEX	11/14/2015 1:55 PM
7	Cessna float plane	11/13/2015 10:57 PM
8	Single engine float plane	11/13/2015 6:30 PM
9	piper cub/floats/skis	11/13/2015 4:08 PM
10	C150	11/13/2015 9:27 AM
11	Cessna 185 on floats/skis	11/13/2015 8:15 AM
12	Cessna 206	11/13/2015 8:05 AM
13	Float Plane	11/13/2015 6:51 AM
14	Cub	11/13/2015 5:11 AM
15	Cessna 185. Wheel skis, floats	11/13/2015 4:14 AM
16	Cessna 180 wheels/skis/floats	11/13/2015 3:02 AM
17	Float	11/11/2015 8:34 PM
18	C185	11/11/2015 1:02 AM
19	206, Beaver	11/10/2015 10:04 PM
20	More float airplanes and large aircraft but will run them from Palmer.	11/10/2015 7:37 PM
21	Beaver on floats, wheels, skis	11/10/2015 7:37 PM
22	Experimental super cub	11/10/2015 7:36 PM
23	Cessna 185 or 206 on floats	11/10/2015 5:53 PM
24	Light twins, caravans	11/10/2015 5:09 PM
25	Doc-2 floats	11/10/2015 4:52 PM
26	Cub on floats	11/10/2015 4:18 PM
27	Super Cub with wheels, floats, and skis.	11/10/2015 3:42 PM
28	floatplane	11/10/2015 3:37 PM
29	Supercub	11/10/2015 5:20 AM
30	experimental	11/9/2015 1:34 PM
31	CE-206 on floats	11/8/2015 8:29 AM
32	T206	11/8/2015 6:42 AM
33	Cessna 185 floarplane	11/7/2015 2:16 PM
34	Cessna 185	11/7/2015 11:18 AM
35	light weight/ off airport use specific	11/7/2015 11:17 AM
36	Wheel airplane	11/7/2015 9:39 AM

37	cessna 180 wheels, skis, floats	11/7/2015 8:43 AM
38	Un-known	11/7/2015 6:56 AM
39	PA-18 150 on Floats	11/7/2015 6:40 AM
40	C-185 Floats and skis	11/7/2015 5:48 AM
41	Piper PA-18 Super Cub	11/7/2015 4:46 AM
42	Super cub. Floats and wheels.	11/6/2015 9:14 PM
43	Piper Cub on floats, wheels, skis	11/6/2015 5:11 PM
44	Helicopter	11/6/2015 4:40 PM
45	PA-18 wheels and skis and floats	11/6/2015 4:35 PM
46	C-185 most likely on floats, skis, wheels.	11/6/2015 4:27 PM
47	Pa-18 Super Cub, Permanent attached floats	11/6/2015 4:23 PM
48	Maule Floats/Wheels	11/6/2015 3:58 PM
49	Lake L4	11/6/2015 3:41 PM
50	C-185 or C-206	11/6/2015 3:38 PM
51	Cessna 185	11/6/2015 2:58 PM
52	Floats	11/2/2015 6:23 AM

Q40 What will you use the aircraft for?

Answered: 50 Skipped: 187

#	Responses	Date
1	Pleasure	11/30/2015 3:12 PM
2	Business and pleasure	11/30/2015 10:52 AM
3	Recreation	11/20/2015 1:19 PM
4	Personal/recreational use	11/15/2015 5:08 PM
5	BUSINESS	11/14/2015 1:55 PM
6	recreation	11/13/2015 10:57 PM
7	Transportation from Anchorage to cabin at Redshirt Lake	11/13/2015 6:30 PM
8	Personal business / pleasure	11/13/2015 4:08 PM
9	Training	11/13/2015 9:27 AM
10	photography	11/13/2015 8:15 AM
11	Flight tours	11/13/2015 8:05 AM
12	Recreation and flight instruction	11/13/2015 6:51 AM
13	Pleasure	11/13/2015 5:11 AM
14	Recreation	11/13/2015 4:14 AM
15	General Purpose	11/13/2015 3:02 AM
16	Pleasure	11/11/2015 8:34 PM
17	Fuel	11/11/2015 1:02 AM
18	use for fishing and hunting guide guiding	11/10/2015 10:04 PM
19	Commercial operations School, charter, leasing	11/10/2015 7:37 PM
20	Charter/bear viewing	11/10/2015 7:37 PM
21	fun	11/10/2015 7:36 PM
22	Recreational and possible aviation business related	11/10/2015 5:53 PM
23	Survey	11/10/2015 5:09 PM
24	Lodge	11/10/2015 4:52 PM
25	Pleasure	11/10/2015 4:18 PM
26	Personal use.	11/10/2015 3:42 PM
27	Flying. Duh.	11/10/2015 3:37 PM
28	Personal	11/10/2015 5:20 AM
29	play	11/9/2015 1:34 PM
30	Fishing Lodge	11/8/2015 8:29 AM
31	Carry sleds for unsupported science expeditions at high latitudes	11/8/2015 6:42 AM
32	Personal	11/7/2015 2:16 PM
33	Float flying, ski flying	11/7/2015 11:18 AM
34	recreation/exploration	11/7/2015 11:17 AM
35	Pleasure / Hunting	11/7/2015 9:39 AM
36	personal	11/7/2015 8:43 AM
37	Pleasure	11/7/2015 6:40 AM

38	personal	11/7/2015 5:48 AM
39	Recreation and lodge use.	11/7/2015 4:46 AM
40	Private flying	11/6/2015 9:14 PM
41	pleasure	11/6/2015 5:11 PM
42	Fun	11/6/2015 4:40 PM
43	Hunting, Fishing, Pleasure.	11/6/2015 4:35 PM
44	General purpose use, like I use a pickup truck. Basic transportation and load hauling to our cabins and to locations around the state.	11/6/2015 4:27 PM
45	Flying from home to lakes/rivers for Fun, fishing and hunting.	11/6/2015 4:23 PM
46	Pleasure	11/6/2015 3:58 PM
47	Personal travel for business, Hunting	11/6/2015 3:41 PM
48	recreation	11/6/2015 3:38 PM
49	Recreation, Commute to recreational cabin.	11/6/2015 2:58 PM
50	Instruction	11/2/2015 6:23 AM

Q41 Where will you base the aircraft?

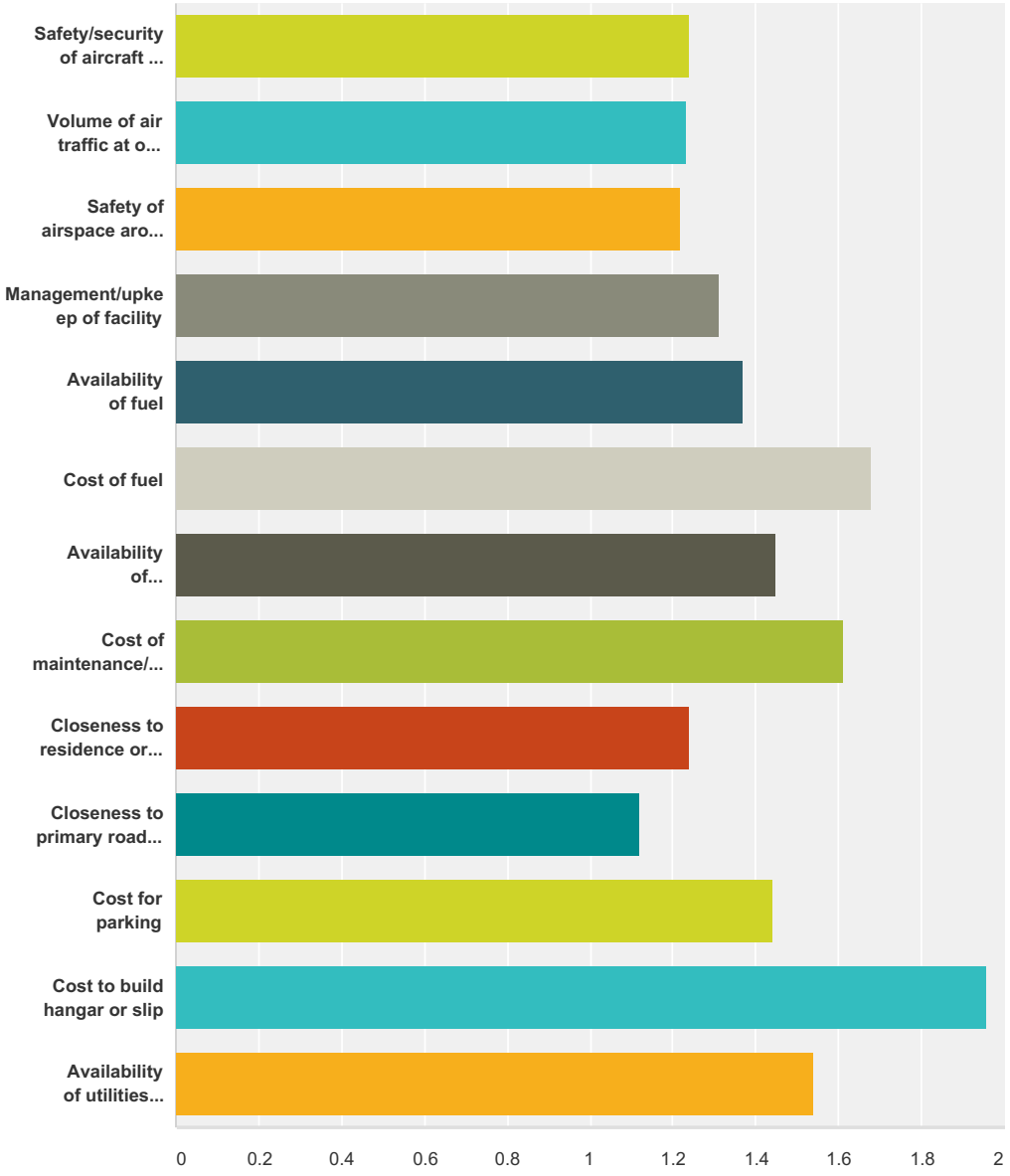
Answered: 50 Skipped: 187

#	Responses	Date
1	Palmer--matsu	11/30/2015 3:12 PM
2	Talkeetna	11/30/2015 10:52 AM
3	Anchorage	11/20/2015 1:19 PM
4	65AK	11/15/2015 5:08 PM
5	LWT and FFZ	11/14/2015 1:55 PM
6	Lake Hood or Fire Lake	11/13/2015 10:57 PM
7	Anchorage	11/13/2015 6:30 PM
8	Talkeetna	11/13/2015 4:08 PM
9	PASX	11/13/2015 9:27 AM
10	ukn this time	11/13/2015 8:15 AM
11	PATK	11/13/2015 8:05 AM
12	MSB	11/13/2015 6:51 AM
13	Palmer	11/13/2015 5:11 AM
14	Lake Hood	11/13/2015 4:14 AM
15	Big Lake	11/13/2015 3:02 AM
16	?	11/11/2015 8:34 PM
17	Wasilla Lake	11/11/2015 1:02 AM
18	Lakes	11/10/2015 10:04 PM
19	All at Palmer. The commercial airport. Wasilla won't work.	11/10/2015 7:37 PM
20	Wasilla	11/10/2015 7:37 PM
21	anderson lake	11/10/2015 7:36 PM
22	Undecided	11/10/2015 5:53 PM
23	Anywhere with facilities to avoid premium anchorage prices	11/10/2015 5:09 PM
24	Pasw	11/10/2015 4:52 PM
25	Island lake	11/10/2015 4:18 PM
26	Anderson Lake Strip	11/10/2015 3:42 PM
27	Finger or Wolf Lake	11/10/2015 3:37 PM
28	Fairbanks	11/10/2015 5:20 AM
29	meadow lakes	11/9/2015 1:34 PM
30	Not sure yet.	11/8/2015 8:29 AM
31	KBJC (Colorado)	11/8/2015 6:42 AM
32	???	11/7/2015 2:16 PM
33	Lake Hood, if slip is available	11/7/2015 11:18 AM
34	Anc	11/7/2015 11:17 AM
35	Mat-su bourough	11/7/2015 9:39 AM
36	willow	11/7/2015 8:43 AM
37	AKo1	11/7/2015 6:40 AM

38	Mat-Su	11/7/2015 5:48 AM
39	Wasilla Airport (PAWS)	11/7/2015 4:46 AM
40	Fairbanks	11/6/2015 9:14 PM
41	PABV for wheels & skis. Unknown for floats.	11/6/2015 5:11 PM
42	Willow or Home	11/6/2015 4:40 PM
43	South Central Alaska	11/6/2015 4:35 PM
44	Big Lake	11/6/2015 4:27 PM
45	Fire Lake, Eagle River. Transient at Willow and Anderson Lakes	11/6/2015 4:23 PM
46	4AK6	11/6/2015 3:58 PM
47	????????	11/6/2015 3:41 PM
48	Lake hood strip/Campbell Lake	11/6/2015 3:38 PM
49	I'm on a 10 year waiting list for Lake Hood	11/6/2015 2:58 PM
50	AK-8. Talkeetna	11/2/2015 6:23 AM

Q42 How do you feel about the following conditions where you base your aircraft (answer for each facility):

Answered: 162 Skipped: 75



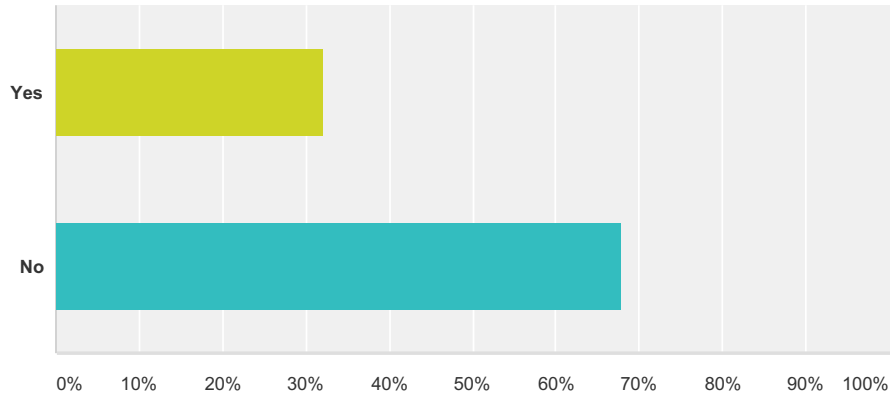
	Satisfied	Dissatisfied	No Opinion	Total	Weighted Average
Safety/security of aircraft on the ground	**81.37%** 131	**13.66%** 22	**4.97%** 8	161	1.24
Volume of air traffic at or near this facility	**83.75%** 134	**10.00%** 16	**6.25%** 10	160	1.23
Safety of airspace around the facility for landing and takeoff	**83.23%** 134	**11.80%** 19	**4.97%** 8	161	1.22
Management/upkeep of facility	**78.13%** 125	**12.50%** 20	**9.38%** 15	160	1.31

Availability of fuel	**72.67%** 117	**17.39%** 28	**9.94%** 16	161	1.37
Cost of fuel	**45.86%** 72	**40.13%** 63	**14.01%** 22	157	1.68
Availability of maintenance/repair services	**70.00%** 112	**15.00%** 24	**15.00%** 24	160	1.45
Cost of maintenance/repair services	**59.63%** 96	**19.25%** 31	**21.12%** 34	161	1.61
Closeness to residence or business	**83.85%** 135	**8.07%** 13	**8.07%** 13	161	1.24
Closeness to primary road system	**93.17%** 150	**1.24%** 2	**5.59%** 9	161	1.12
Cost for parking	**72.50%** 116	**11.25%** 18	**16.25%** 26	160	1.44
Cost to build hangar or slip	**33.13%** 53	**38.13%** 61	**28.75%** 46	160	1.96
Availability of utilities (water/sewer,. electric, etc.)	**62.89%** 100	**20.13%** 32	**16.98%** 27	159	1.54

#	Other (please specify)	Date
1	Mat Su Borough Staff is clueless	11/29/2015 5:09 PM
2	Access within Anchorage is critical	11/29/2015 2:30 PM
3	I am based at Lake Hood, but do fly in the Mat-Su Valley some. Your questions didn't seem to cover that stituation.	11/25/2015 5:12 PM
4	Answers above anticipate my move of the aircraft to Palmer	11/25/2015 3:30 PM
5	sorry Patty here looking at the questions	11/24/2015 10:27 AM
6	Infrastructure	11/22/2015 8:14 AM
7	Still waiting for some improvements discussed at Willow Airport Master Plan meetings	11/13/2015 10:39 AM
8	tie downs pulling out of pavement at PATK, dogs running loose peeing on airplane and chasing taxing planes	11/13/2015 8:13 AM
9	State Snow removal plan sucks	11/13/2015 3:05 AM
10	No fuel available for floatplanes. Need a seaplane base with fuel.	11/10/2015 7:41 PM
11	No local access to seaplane fueling	11/10/2015 3:58 PM
12	carrying capacity of our area for planes has been reached	11/1/2015 12:09 PM
13	Need access to 100LL fuel on Willow Lake	10/30/2015 12:39 AM
14	I am a transient pilot that comes and goes from the Mat-Su area. I am not based there. I used to have my maintenance done at Willow but the politics and lack of services caused me to go to a shop in Kenai. Are you considering the needs of pilots like me?	10/29/2015 9:41 AM
15	Limited number of lease lots at Talkeetna airport for private hangars	10/24/2015 7:29 PM

Q43 Have you considered locating your aircraft elsewhere, but have not moved?

Answered: 156 Skipped: 81



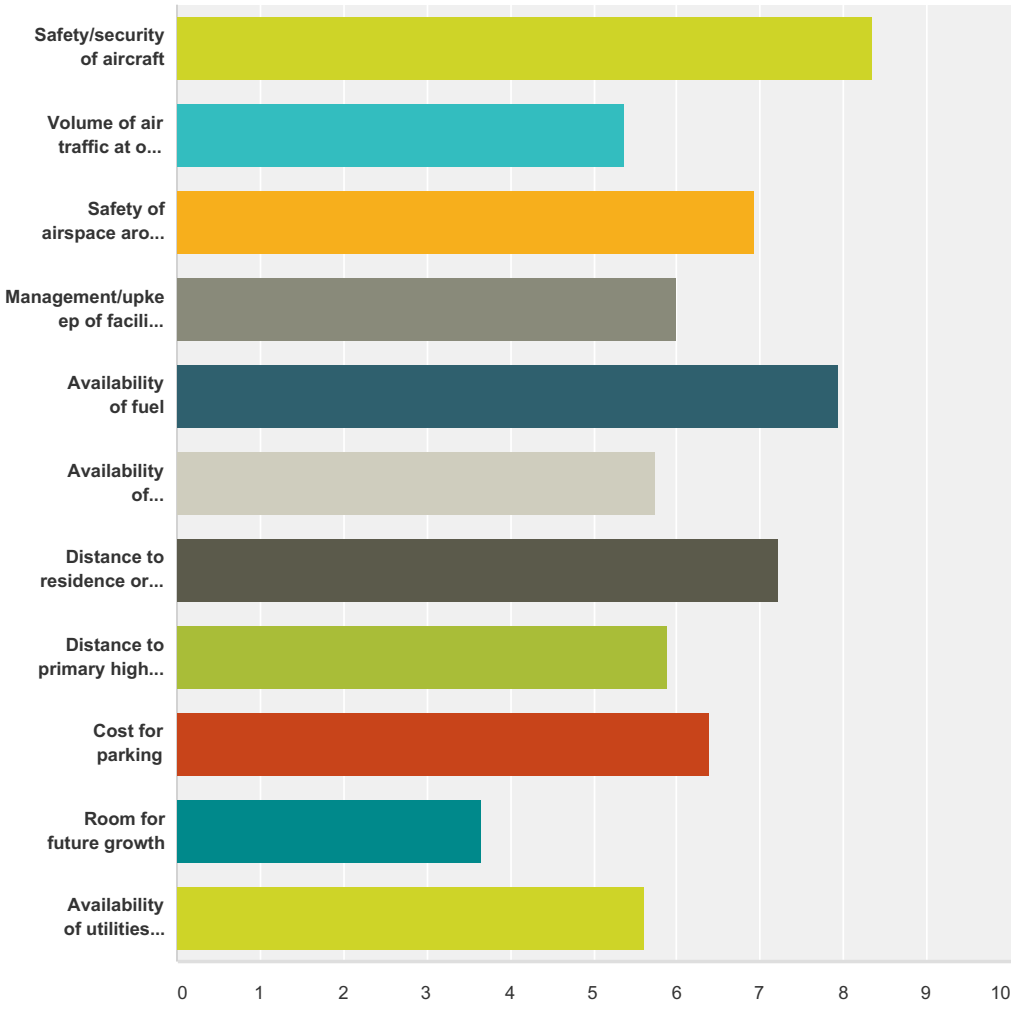
Answer Choices	Responses	
Yes	**32.05%**	50
No	**67.95%**	106
Total		**156**

#	If Yes: Where would you have moved and what made you decide not to move?	Date
1	Palmer - Maintenance costs	11/25/2015 3:30 PM
2	Sometimes BCV, more services at MRI	11/13/2015 10:59 PM
3	Smaller Airstrip in SC Alaska	11/13/2015 4:54 PM
4	Sold prior a/c because no availability to park floatplane	11/13/2015 4:11 PM
5	Off a DOT maintained airport	11/13/2015 10:39 AM
6	Private slip further from town was too far to be convenient	11/13/2015 9:45 AM
7	BCV. Shorter drive to MRI	11/13/2015 4:16 AM
8	anywhere in the valley	11/13/2015 3:05 AM
9	Commute, power, gravel strip option,	11/12/2015 10:27 PM
10	Willow, to far o drive	11/11/2015 8:51 AM
11	Currently working to move it. Private strip	11/10/2015 5:55 PM
12	Safety of the aircraft while parked (theft of fuel,vandalism)	11/10/2015 4:24 PM
13	Butte, not secure.	11/10/2015 3:39 PM
14	Birchwood, but not float options.	11/10/2015 12:01 PM
15	MatSu, Lack of services1	11/9/2015 3:38 AM
16	MatSu lake but no availability	11/8/2015 2:53 PM
17	Six Mile Lake	11/8/2015 8:39 AM
18	KEIK - hangar price increase was not large enough to justify the move	11/8/2015 6:45 AM
19	No place to keep a float plane without living on a lake	11/7/2015 3:24 PM
20	Campbell Lake, Lake Hood. No available space	11/7/2015 11:21 AM
21	Willow	11/7/2015 9:41 AM

22	off a state airport. to many regs, and pay tax on land not owned!	11/7/2015 8:45 AM
23	To a suitable hangar at Palmer Airport. No hangares and those that were present did not have a suitabl owners agreement.	11/7/2015 7:04 AM
24	Off Hollywood and Angila dr.	11/7/2015 7:01 AM
25	Mat-Su	11/7/2015 5:50 AM
26	Wasilla/Palmer area. Partnership in the aircraft	11/6/2015 10:44 PM
27	Fairbanks	11/6/2015 9:56 PM
28	Dutch Harbor - Need a hangar for winter and during storms.	11/6/2015 8:26 PM
29	in the valley	11/6/2015 6:30 PM
30	Merrill field	11/6/2015 5:34 PM
31	MatSu Valley Inconvenience of operating my floatplane. The convenience of operating from LHD	11/6/2015 5:11 PM
32	I base our plane at Merrill Field and Birchwood during change of seasons and gear.	11/6/2015 4:27 PM
33	Lake Hood	11/6/2015 3:01 PM
34	PAAQ, convenience and cost	11/4/2015 10:37 AM
35	Moved to BGQ because we liked the area.	11/1/2015 10:46 AM
36	No other facilities nearby.	10/31/2015 9:18 AM
37	Mat Su valley	10/31/2015 2:51 AM
38	Private strip closer to home	10/30/2015 5:21 PM
39	To my house, Own the Tee Hangar	10/30/2015 12:23 PM
40	Wolf Lake. Cost of property there.	10/30/2015 5:18 AM
41	Partner wants to sell PA-12 because lack of float slip	10/24/2015 7:29 PM

Q44 If a new airport/floatplane base is constructed, what factors would make you consider moving there? Rank the following 1 through 11, with 1 being the most important factor and 11 being the least important.

Answered: 144 Skipped: 93



	1	2	3	4	5	6	7	8	9	10	11	Total	Score
Safety/security of aircraft	37.25% 38	7.84% 8	12.75% 13	6.86% 7	10.78% 11	9.80% 10	5.88% 6	0.00% 0	0.98% 1	3.92% 4	3.92% 4	102	8.36
Volume of air traffic at or near this facility	5.83% 6	7.77% 8	9.71% 10	3.88% 4	8.74% 9	11.65% 12	5.83% 6	10.68% 11	10.68% 11	16.50% 17	8.74% 9	103	5.37
Safety of airspace around the facility for landing and takeoff	9.09% 9	10.10% 10	15.15% 15	16.16% 16	7.07% 7	11.11% 11	7.07% 7	13.13% 13	5.05% 5	1.01% 1	5.05% 5	99	6.93
Management/upkeep of facility	4.00% 4	9.00% 9	6.00% 6	15.00% 15	13.00% 13	6.00% 6	13.00% 13	13.00% 13	12.00% 12	3.00% 3	6.00% 6	100	6.00

Availability of fuel	**15.89%** 17	**14.02%** 15	**17.76%** 19	**16.82%** 18	**14.02%** 15	**5.61%** 6	**4.67%** 5	**2.80%** 3	**2.80%** 3	**4.67%** 5	**0.93%** 1	107	7.94
Availability of maintenance/repair services	**5.56%** 6	**4.63%** 5	**6.48%** 7	**8.33%** 9	**12.96%** 14	**14.81%** 16	**12.96%** 14	**11.11%** 12	**10.19%** 11	**9.26%** 10	**3.70%** 4	108	5.74
Distance to residence or business	**22.73%** 25	**14.55%** 16	**7.27%** 8	**6.36%** 7	**6.36%** 7	**9.09%** 10	**7.27%** 8	**9.09%** 10	**8.18%** 9	**5.45%** 6	**3.64%** 4	110	7.23
Distance to primary highway system	**8.18%** 9	**11.82%** 13	**7.27%** 8	**6.36%** 7	**8.18%** 9	**8.18%** 9	**9.09%** 10	**15.45%** 17	**7.27%** 8	**10.91%** 12	**7.27%** 8	110	5.89
Cost for parking	**6.09%** 7	**13.04%** 15	**13.91%** 16	**9.57%** 11	**6.09%** 7	**11.30%** 13	**8.70%** 10	**6.09%** 7	**14.78%** 17	**6.09%** 7	**4.35%** 5	115	6.38
Room for future growth	**0.88%** 1	**4.42%** 5	**4.42%** 5	**6.19%** 7	**3.54%** 4	**2.65%** 3	**13.27%** 15	**6.19%** 7	**7.96%** 9	**16.81%** 19	**33.63%** 38	113	3.66
Availability of utilities (water/sewer, electric, etc.)	**8.59%** 11	**7.03%** 9	**4.69%** 6	**7.81%** 10	**17.19%** 22	**9.38%** 12	**4.69%** 6	**8.59%** 11	**6.25%** 8	**12.50%** 16	**13.28%** 17	128	5.61

Q45 Other factors to consider:

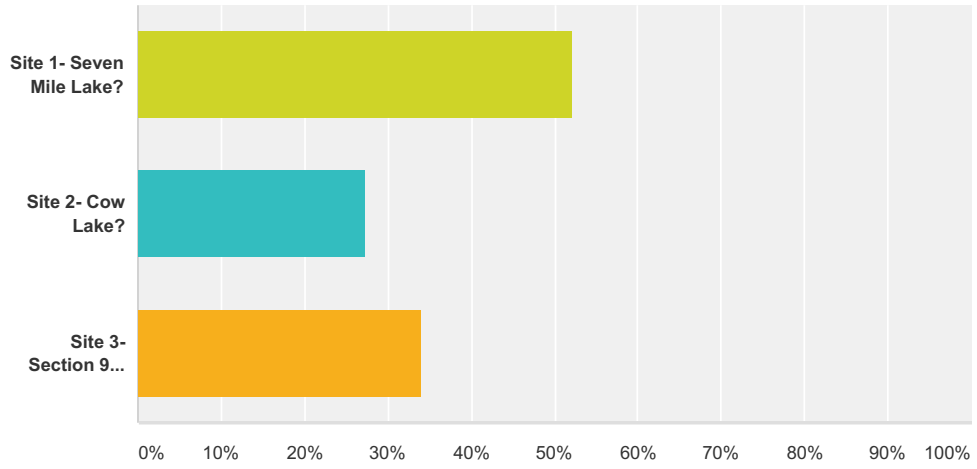
Answered: 44 Skipped: 193

#	Responses	Date
1	Cost to build the facility	11/30/2015 10:59 AM
2	Mat Su Borough Staff should be fired!	11/29/2015 5:09 PM
3	Need to fly out of anchorage to get to a cabin on Red Shirt Lake. I'd perfer to see a sea plane base at Big Lake.	11/29/2015 2:30 PM
4	Since I am not going to move out to the Mat-Su Valley I would not want to base my plane there.	11/25/2015 5:12 PM
5	Dust. Policing/Theft rate. Possibility of through the fence access to low cost services.	11/25/2015 3:30 PM
6	RESTROOMS.	11/24/2015 4:11 PM
7	control tower, noise level, traffic density	11/22/2015 8:14 AM
8	Must be an short drive from Wasilla. Why not Big Lake? Put it right next to the existing runway. Easy to get to, utilities, fuel, repairs, it has it all there for crying out loud!!	11/20/2015 2:23 PM
9	Landing options for varying windon waterways. Ability to taxi on wheels from float slip to hard runway. Room at float slip to park plane when on wheels. Electrical at tiedowns. Proximity to grocery store.	11/20/2015 1:24 PM
10	I would not consider moving	11/20/2015 11:11 AM
11	I am not a plane operator	11/20/2015 9:53 AM
12	None at this time.	11/19/2015 9:03 AM
13	I wouldn't move there.	11/13/2015 10:59 PM
14	Type of tiedown - dock/shore line/trees, etc.	11/13/2015 4:11 PM
15	I wouldn't move to the new facility unless I moved from Anchorage to the MSB. However, I would potentially use the facility for refueling or shuttling gear depending on the location.	11/13/2015 9:31 AM
16	Point Mackenzie is out of the way and would serve Anchorage, not the Mat-Su Residents. I think the Borough is doing this for their own revenue benefit. There is already a float plane lake at Willow but Talkeetna has nothing. I'd like to see a base at Fish Lake. The Borough has a large tract of land there and K2 Aviation has bought up most of the accessible shorelands and kicked other users off the lake. The other good option is a facility at Talkeetna State Airport. There is a huge demand but no place to go!	11/13/2015 8:13 AM
17	Proximity to business and services. There needs to be a reason to travel to the seaplane base. Simply having a facility isn't enough, it needs to be a destination with access to businesses, residences and services.	11/13/2015 6:58 AM
18	I live in ANC and would never consider a space at any of locations mentioned	11/13/2015 6:45 AM
19	Wind	11/11/2015 8:51 AM
20	ramp to launch and recover aircraft from lake when on floats.	11/10/2015 3:46 PM
21	length of primary waterway and room for safe water taxiing due to other taxiing traffic considering challenges of wind.	11/10/2015 12:01 PM
22	I couldn't get your numbers above to work	11/8/2015 10:09 AM
23	The one absolute at the new seaplane facility is an airstrip co-located to facilitate seasonal float/wheel change overs. My assumption is that because this is not listed in your desirables, you have considered this as a mandatory element in your considerations.	11/8/2015 8:39 AM
24	I have my aircraft at my residence, at a private airport. Is there a need for this type of facility?	11/8/2015 8:36 AM
25	Cosnider a public private partnership. Land should be owned and not leased with access agreements...	11/7/2015 12:03 PM
26	more efficient use of borough funds!	11/7/2015 8:45 AM
27	Your form doesn't work right. It will not keep the numbers recorded. It deletes many of them after they have been entered.	11/7/2015 7:04 AM
28	8' x 12' storage shed. On lake and strip.	11/6/2015 9:56 PM
29	Ability to de-ice planes is especially important for trancient pilots.	11/6/2015 8:26 PM
30	Building sites nearby for home and/or hangar	11/6/2015 5:15 PM

31	People aren't going to drive great distances to a centralized facility where their floatplane is parked. Thought should be given to establishing several smaller facilities spread out across the Valley, convenient to many pilots living in different areas of the MatSu region. The increased cost of this idea would need to be taken into account in the planning process of course but I think there would be more interest from people. No one wants to drive an hour to their plane to take a 1/2 hour flight.	11/6/2015 5:11 PM
32	Localized weather, particularly wind.	11/6/2015 5:09 PM
33	I dont expect to ever end up there because I think the municipality will see it as an income generating scheme and feel they need to hire out an expensive airport manager. You'll tell us we asked for it, or safety demands it. You wont pay for it out of your pockets, we will. So I expect to stay where I am and only land there when I need maintenance that I would be unable to obtain in the valley presently.	11/6/2015 4:35 PM
34	You got problems with questions above	11/6/2015 3:12 PM
35	Weather patterns and wind	11/4/2015 10:37 AM
36	Your Scale needs to be divided in to TWO charts... One for economics and one for life style and Aviation Safety/Services.	11/1/2015 10:46 AM
37	Availability to build or lease a hanger at reasonable cost.	10/31/2015 9:18 AM
38	A well maintained ski strip in the winter would be nice for the planes on straight skis, the strips at the current airports are mostly gravel throughout the winter.	10/30/2015 5:21 PM
39	Distance from residence	10/30/2015 4:48 PM
40	Availability of Tee hangars to rent or buy	10/30/2015 12:23 PM
41	Ability to have a residence there.	10/30/2015 5:18 AM
42	TRANSIENT PILOTS!	10/29/2015 9:41 AM
43	I have no intention of basing my aircraft elsewhere even if a new airplane/floatplane base were constructed.	10/25/2015 1:16 PM
44	Primary factor is location of facility close to residence and where aircraft would be used.	10/24/2015 7:29 PM

Q46 Would you consider relocating your existing business to:

Answered: 44 Skipped: 193



Answer Choices	Responses	
Site 1- Seven Mile Lake?	**52.27%**	23
Site 2- Cow Lake?	**27.27%**	12
Site 3- Section 9 Gravel Pit?	**34.09%**	15
Total Respondents: 44		

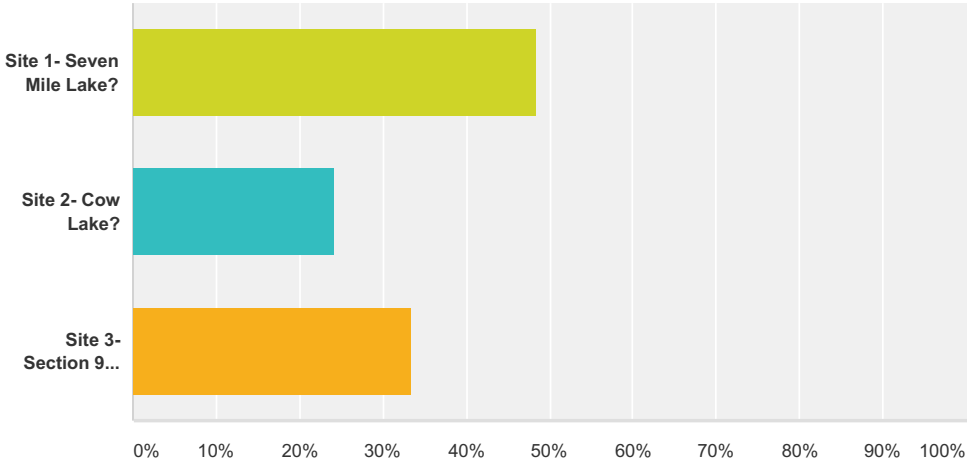
#	Comments	Date
1	I've been flying out of Talkeetna since 1987 and do not want to relocate. I am very satisfied with the options I have for my aircraft in Talkeetna.	11/30/2015 11:04 AM
2	No	11/29/2015 5:11 PM
3	Needs to be 7k feet with no obstructions on either end and aligned with the primary wind direction. Big Lake would be a much better choice.	11/29/2015 2:36 PM
4	This is the best choice	11/29/2015 11:27 AM
5	Anything without a road to it is a waste of money	11/25/2015 5:40 PM
6	I do not have a business to relocate.	11/25/2015 5:15 PM
7	I like the idea of building for 12-15 years from now demand. The other two locations will be overrun by commercial and residential developments too soon. Whereas Cow lake would pull development to the west. This is the long term future for the MSB - to the west, so I think this is where investment should take place.	11/25/2015 3:36 PM
8	Other two locations are rediculous	11/25/2015 11:58 AM
9	Not a chance. Why so far from Everything??!!	11/24/2015 6:34 PM
10	NOTHING OF INTEREST FOR CUSTOMERS	11/24/2015 4:15 PM
11	I have no business at this time	11/24/2015 4:04 PM
12	N/A	11/24/2015 2:07 PM
13	None of these. These are all HORRIBLE choices and have multiple drawbacks.	11/22/2015 8:18 AM
14	If I considered moving my business I would be interested in the Gravel Pit development.	11/21/2015 12:11 AM
15	The facility should be located on an existing road system	11/20/2015 10:48 PM

16	Gravel pit would be the best of the three choices that are all lousy choices. This should go on Big Lake, finger Lake or Wolf Lake. Put it closer to where the people are!!	11/20/2015 2:27 PM
17	Lakes too small.	11/20/2015 1:27 PM
18	No	11/20/2015 11:12 AM
19	Don't own a business	11/20/2015 10:59 AM
20	Best of the three choices. Close to road. Level or flat terrain surrounding.	11/20/2015 10:02 AM
21	I am not a plane operator	11/20/2015 9:55 AM
22	NO	11/15/2015 5:12 PM
23	No, I would not operate out of any of those places.	11/13/2015 11:07 PM
24	All are too far from home for me	11/13/2015 4:12 PM
25	no	11/13/2015 2:42 PM
26	Willow Airport & Lake facility will need to remain in addition to one or more of these options as its close to the Parks Hwy, but doesn't allow for much expansion.	11/13/2015 10:45 AM
27	Cow Lake seems to be the bets option, however, only if there is road access and development has increased to where there is infrastructure near by.	11/13/2015 9:42 AM
28	First, I have no reason to move as my lake & slip are ideal for me, second, none of those three sites have any appeal to me and my passengers and students.	11/13/2015 8:37 AM
29	We own property on Cow Lake, southwest corner.	11/13/2015 8:18 AM
30	no/none	11/13/2015 8:15 AM
31	None of these. There isn't a reason to go to these isolated places. I would only consider a location where I would have not only road access, but a reason to go there in the first place. Places like Willow, Big Lake, Talkeetna as examples, have stores, post offices, restaurants, residences ... places where people have a need and an interest in going to. Simply having a facility where I can secure my aircraft and get fuel and maintenance means nothing to me if I don't have other reasons to go there, nothing to do while I'm there, no passengers who have reasons to go there. These three locations are ridiculous and meaningless to pilots who need a seaplane base in the valley.	11/13/2015 7:17 AM
32	Would make more sense to build as you already have a road. Cow Lake is surrounded by hills and a wich would make a poor choice	11/13/2015 5:48 AM
33	no.	11/10/2015 10:09 PM
34	Never. It's too far away. Not a lot of people want to be that far away.	11/10/2015 7:41 PM
35	I'd have to research the exact locations of these areas.	11/10/2015 6:05 PM
36	NA	11/10/2015 3:48 PM
37	I don't have a business ... So NA	11/10/2015 3:20 PM
38	Do not own an aviation business	11/10/2015 12:08 PM
39	NA	11/8/2015 2:57 PM
40	Cow Lake is too far, Seven Mile is good, but will impact my lake, and I don't know where the gravel pit is located	11/8/2015 10:12 AM
41	Must have airstrip co-located.	11/8/2015 8:41 AM
42	N/A	11/8/2015 8:39 AM
43	i really can not tell where these locations are?	11/7/2015 8:47 AM
44	Whoever put site maps together should have given more information of locations! Loved here my whole life and the only reaso I know two of the general locations is my prior knowledge... Poorly put together!	11/7/2015 7:05 AM
45	No to all three.	11/7/2015 4:51 AM
46	no way ... nothing there for me or my clients ... no destination for anyone. Why not Big Lake where there are services, maintenance, food, fuel, groceries, post office!	11/6/2015 5:40 PM
47	Need available building sites for private ownership, or leased lots around airport	11/6/2015 5:31 PM
48	None of the above. Willow is a great seaplane base	11/6/2015 4:47 PM
49	n/a	11/6/2015 4:39 PM
50	NA	11/6/2015 4:36 PM

51	No	11/6/2015 3:05 PM
52	NA	11/4/2015 10:39 AM
53	NO	11/1/2015 10:52 AM
54	I do not have a business to relocate.	10/30/2015 12:40 AM
55	I'm not going to relocate my aircraft to the Mat-Su but I need a place to come and go from in this part of the state!	10/29/2015 9:44 AM
56	Do not plan on moving business south - but would utilize any of the three sites recreationally	10/28/2015 4:22 PM
57	No	10/27/2015 10:57 AM
58	None of the above	10/24/2015 7:31 PM
59	Need satellite facility in upper Susitna valley	10/24/2015 6:38 PM

Q47 Would you open a new business at:

Answered: 33 Skipped: 204



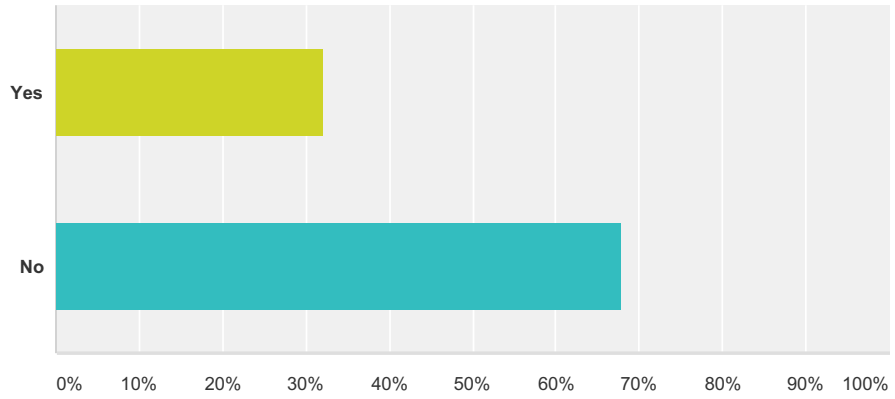
Answer Choices	Responses	
Site 1- Seven Mile Lake?	**48.48%**	16
Site 2- Cow Lake?	**24.24%**	8
Site 3- Section 9 Gravel Pit?	**33.33%**	11
Total Respondents: 33		

#	Comments	Date
1	If I were to move, Cow Lake looks like the best option	11/30/2015 11:04 AM
2	No	11/29/2015 5:11 PM
3	No	11/29/2015 2:36 PM
4	If I were entertaining opening a business this is he only choice.	11/29/2015 11:27 AM
5	None of the above. I think wasilla or big lake improvements make more sense	11/25/2015 5:40 PM
6	I do not plan to own a business.	11/25/2015 5:15 PM
7	Possibly - First ones in will have the cat-bird seat in 10 years. Good for family investment if we want to see our kids and grandkids thrive in the borough/Alaska.	11/25/2015 3:36 PM
8	No way. To far out.	11/24/2015 6:34 PM
9	NO PRIVATE LAND	11/24/2015 4:15 PM
10	I have no business at this time	11/24/2015 4:04 PM
11	N/A	11/24/2015 2:07 PM
12	If I considered opening a new business I would be interested in the Gravel Pit development.	11/21/2015 12:11 AM
13	No way!!	11/20/2015 2:27 PM
14	No	11/20/2015 11:12 AM
15	No way, way too far away	11/20/2015 10:59 AM
16	no	11/20/2015 9:55 AM
17	NO	11/15/2015 5:12 PM
18	No	11/13/2015 11:07 PM
19	no	11/13/2015 4:12 PM

20	no	11/13/2015 2:42 PM
21	no	11/13/2015 8:37 AM
22	no/none	11/13/2015 8:15 AM
23	no ... see the comment above.	11/13/2015 7:17 AM
24	no	11/10/2015 10:09 PM
25	Never. see above.	11/10/2015 7:41 PM
26	No plans for a business	11/10/2015 3:48 PM
27	I don't have a business ... So NA	11/10/2015 3:20 PM
28	Not planning to open an aviation business.	11/10/2015 12:08 PM
29	NA	11/8/2015 2:57 PM
30	no	11/8/2015 10:12 AM
31	Must have airstrip co-located.	11/8/2015 8:41 AM
32	N/A	11/8/2015 8:39 AM
33	Site maps poorly put together.	11/7/2015 7:05 AM
34	Same as above answer.	11/7/2015 4:51 AM
35	no way ... nothing there for me or my clients ... no destination for anyone. Why not Big Lake where there are services, maintenance, food, fuel, groceries, post office!	11/6/2015 5:40 PM
36	Not interested in starting a business	11/6/2015 5:31 PM
37	I already have a very active seaplane maintenance shop at the Willow airport.	11/6/2015 4:47 PM
38	n/a	11/6/2015 4:39 PM
39	NA	11/6/2015 4:36 PM
40	No	11/6/2015 3:05 PM
41	NA	11/4/2015 10:39 AM
42	NO	11/1/2015 10:52 AM
43	Na	10/31/2015 9:20 PM
44	I do not have a business to relocate.	10/30/2015 12:40 AM
45	N/a	10/28/2015 4:22 PM
46	No	10/27/2015 10:57 AM
47	None of the above	10/24/2015 7:31 PM

Q48 If you own an aircraft, would you consider moving to site 1?

Answered: 121 Skipped: 116



Answer Choices	Responses	
Yes	**32.23%**	39
No	**67.77%**	82
Total		**121**

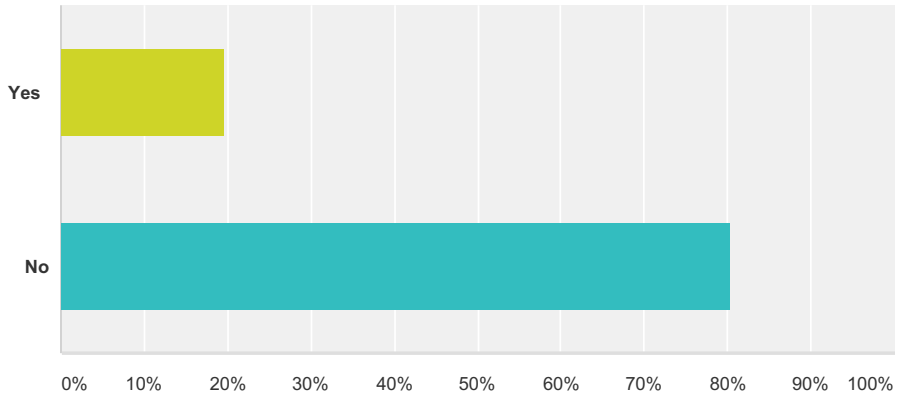
#	Which Aircraft?Why or why not?	Date
1	Satisfied with my current situation	11/30/2015 11:04 AM
2	Staff is out of touch with reality	11/29/2015 5:11 PM
3	Lake is too small. I live in Anchorage and need to fly out of there. I'm not going to drive to the valley.	11/29/2015 2:36 PM
4	If I were to move to a different location this site is closest to existing infrastructure.	11/29/2015 11:27 AM
5	If I were going to move my residence near by, which I am not interested in doing.	11/25/2015 5:15 PM
6	To far.	11/25/2015 3:36 PM
7	NOTHING TO BUY TO OWN	11/24/2015 4:15 PM
8	Fine where I am at	11/24/2015 4:04 PM
9	Of the three sites, I prefer this one the most...as it seems to be the safest location based on current airspace usage.	11/24/2015 2:07 PM
10	No way!! To far to drive.	11/20/2015 2:27 PM
11	Lake too small.	11/20/2015 1:27 PM
12	No. We live in Anchorage	11/20/2015 11:12 AM
13	Too far from everywhere	11/20/2015 10:59 AM
14	Too short. One directional - no cross wind water lane.	11/20/2015 10:02 AM
15	Cessna 180 Float Plane Not completely familiar with 7 Mile Lake. It appears to be large enough, in an open area and close to a road system.	11/19/2015 11:26 AM
16	Anchorage is fine	11/13/2015 11:07 PM
17	The Gravel Pit has the only accessible road.	11/13/2015 6:48 PM
18	I am happy where I am.	11/13/2015 2:42 PM
19	Would have to see how it would work first.	11/13/2015 10:45 AM
20	If I moved to the MSB and did not live on a lake I would consider moving from Lake Hood. Site 1 or Site 2 seem to be the best options.	11/13/2015 9:42 AM

21	too remote, no road access	11/13/2015 8:37 AM
22	Too far from where we live.	11/13/2015 8:18 AM
23	It's too far away and increase commute and flight costs and I'd loose customers	11/13/2015 8:15 AM
24	see comment above. Site 1 is an remote lake with nothing around it that would compel me to travel there. I use that lake frequently for take off and landing practice for that very reason, there is nothing around it to disturb as I practice. There is one cabin there where I've never seen anyone in attendance. It is a peaceful, quiet, isolated lake that has no appeal as a seaplane base destination.	11/13/2015 7:17 AM
25	Too remote	11/13/2015 4:18 AM
26	Transient user	11/12/2015 8:09 AM
27	If I understand correctly, all these spots are too far from Palmer Wasilla.	11/10/2015 7:41 PM
28	Too far away	11/10/2015 4:44 PM
29	high air traffic	11/10/2015 4:18 PM
30	Too far	11/10/2015 4:01 PM
31	too far from my home	11/10/2015 3:48 PM
32	too far	11/10/2015 3:45 PM
33	I already own a hangar at Anderson Lake.	11/10/2015 3:20 PM
34	Yes if was the closest to my new house, or recreation activities	11/10/2015 12:08 PM
35	Location	11/8/2015 2:57 PM
36	Ok where it is now	11/8/2015 11:06 AM
37	Distance from residence	11/8/2015 9:32 AM
38	Must have airstrip co-located.	11/8/2015 8:41 AM
39	I own my own hanger/house on a private airport.	11/8/2015 8:39 AM
40	Cessna 180 on Floats	11/8/2015 8:02 AM
41	No float space avail at hood without a long wait	11/7/2015 11:24 AM
42	Plan to use as transient	11/7/2015 11:23 AM
43	I can't tell where the lake is due to the scale and extents fo the map provided.	11/7/2015 7:31 AM
44	Site maps poorly put together.	11/7/2015 7:05 AM
45	Cessna 185, Palmer and Wasilla airports are more convenient for wheels and are already established but under utilized. I an looking for float plane parking on Wasilla, Finger, or Shaw Tri-Lakes area. It is much more convenient.	11/6/2015 10:57 PM
46	Float plane. Need 5,000 feet.	11/6/2015 9:59 PM
47	The commute is too far from where my current business needs are.	11/6/2015 8:57 PM
48	PA-18 Close to home	11/6/2015 7:29 PM
49	Nothing there ... no destination for me or my clients ... dumb idea to locate a seaplane base where there is nothing there for pilots, passengers and clients.	11/6/2015 5:40 PM
50	Cessna 180 and Piper Cub, if we could live nearby.	11/6/2015 5:31 PM
51	Too far to drive to	11/6/2015 5:16 PM
52	see above	11/6/2015 4:47 PM
53	I would consider it but expect it to be cost prohibitive when available.	11/6/2015 4:42 PM
54	All	11/6/2015 4:39 PM
55	PA-18 Site 1 is near our retirement property.	11/6/2015 4:36 PM
56	No Need to move, Would use the facility if Fuel was avalible	11/6/2015 4:04 PM
57	Residence in Fairbanks	11/6/2015 3:18 PM
58	too far from residence	11/4/2015 10:39 AM
59	Prefer the Current BGQ Big Lake Airport location, It offers development to the Community of BIG LAKE	11/1/2015 10:52 AM

60	Too distant.	10/31/2015 9:19 AM
61	Too far from my house, and work.	10/31/2015 3:01 AM
62	Too far from my residence	10/30/2015 12:40 AM
63	Don't live in the Mat-Su. I need a viable place to use as a transient pilot!	10/29/2015 9:44 AM
64	I am satisfied with where I am currently located.	10/27/2015 10:57 AM
65	Too far from residence AND too far where I would use airplane	10/24/2015 7:31 PM
66	Too far	10/24/2015 6:38 PM

Q49 If you own an aircraft, would you consider moving to site 2?

Answered: 122 Skipped: 115



Answer Choices	Responses	
Yes	**19.67%**	24
No	**80.33%**	98
Total		**122**

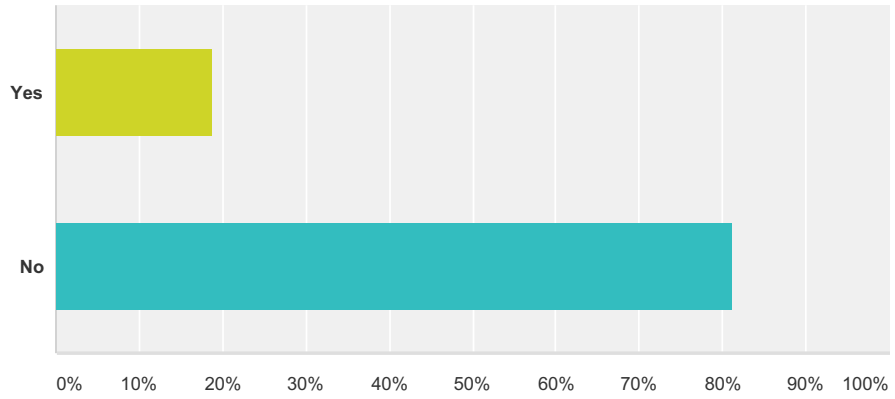
#	Which aircraft?Why or why not?	Date
1	If I did relocate this looks like the best option	11/30/2015 11:04 AM
2	Staff is out of touch with reality	11/29/2015 5:11 PM
3	It is too small a lake with high hills around it. Big Lake is a better choice. VOR, Large Lake, Existing Airport, Help available in case of an emergency, Can drive and park there if I'm picking someone up to fly to Red Shirt Lake.	11/29/2015 2:36 PM
4	This portion of the Susitna valley is frequently shrouded in fog and unusable, not to mention too far off the existing road system.	11/29/2015 11:27 AM
5	Topograhy around it not good for air operations.	11/25/2015 5:15 PM
6	To far from present residence.	11/25/2015 3:36 PM
7	NATIVE OWN TO MUCH OF THE LAKE.	11/24/2015 4:15 PM
8	Fine where I am at	11/24/2015 4:04 PM
9	This option is the farthest away, and is within the busy approach to aircraft landing/departing Redshirt Lake. Of the three sites, I prefer this one the least.	11/24/2015 2:07 PM
10	this lake has no infrastructure and is too close to quiet privately owned recreational properties and nancy lake park area. It would absolutely ruin the quiet and peaceful nature of the surrounding properties that individuals have spent money and time developing.	11/24/2015 1:23 PM
11	Cow lake is not a good spot for a seaplane base mostly because of the terrain on the south end of lake is high for takeoffs to the south into the prevailing wind.	11/21/2015 12:11 AM
12	No way!! To far to drive!!	11/20/2015 2:27 PM
13	Lake too small	11/20/2015 1:27 PM
14	To Remote, to expensive for utilities, roads, topography, persistant fog in fall and winter	11/20/2015 12:27 PM
15	Cow Lake is too short and too small, no infrastructure, this is the dumbest location of all!	11/20/2015 10:59 AM
16	Too short. Too remote. No security. Surrounding terrain. One directional. Bad!	11/20/2015 10:02 AM

17	Cessna 180 Float Plane I am very familiar with Cow Lake. It is extremely poor lake for a sea plane base because of it's narrow size, one way in one way out, hills on both sides causing wind burbles and extensive fog. It is in the middle of moose and bear habit which makes this lake incompatible with a float plane base. It does not have road access.	11/19/2015 11:26 AM
18	Too far from primary roads and not a great lake to fly in and out of.	11/14/2015 6:33 PM
19	No and I would hate to see Cow Lake turned into an airport. The area is hilly and the noise would significantly disturb the many property owners on neighboring Red Shirt Lake, not to mention the destruction of what people have spent their lives building on Cow Lake. That area is also a snow machine highway.	11/13/2015 11:07 PM
20	The hills around Cow Lake make large scale entry and exits to dangerous.	11/13/2015 6:48 PM
21	too far away	11/13/2015 2:42 PM
22	Cow Lake seems to be the bets option, however, only if there is road access and development has increased to where there is infrastructure near by. This provides the best option for refueling or shuttling gear/materials to other areas. The other two options don't really provide much benefit in this regard.	11/13/2015 9:42 AM
23	too remote, no road access	11/13/2015 8:37 AM
24	Cessna 180. We own property on this lake, southwest corner.	11/13/2015 8:18 AM
25	Same comments as above ... Cow lake has no road access, it has a few cabins and is too close to relatively busy Red Shirt lake to serve as a seaplane base. Again, why even go there unless you have a cabin on the lake ... there is nothing out there to compel me to base my plane there.	11/13/2015 7:17 AM
26	ABSOULTELY NOT. cow lake is directly in the flight path of hundreds of airplanes flying up valley every day. redshirt lake is too close. not to mention no road and no infrastructure at cow lake. and unfair to current residents.	11/13/2015 6:48 AM
27	The lake is surrounded by hills a poor choice	11/13/2015 5:48 AM
28	Too remote	11/13/2015 4:18 AM
29	Transient user	11/12/2015 8:09 AM
30	Too far away	11/10/2015 4:44 PM
31	less air traffic	11/10/2015 4:18 PM
32	Too far	11/10/2015 4:01 PM
33	too far from my home	11/10/2015 3:48 PM
34	Nearest	11/10/2015 3:45 PM
35	I already own a hangar at Anderson Lake.	11/10/2015 3:20 PM
36	Yes if was the closest to my new house, or recreation activities	11/10/2015 12:08 PM
37	Location	11/8/2015 2:57 PM
38	I already have tie downs	11/8/2015 10:12 AM
39	Distance from residence	11/8/2015 9:32 AM
40	Must have airstrip co-located.	11/8/2015 8:41 AM
41	I own my own hanger/house on a private airport.	11/8/2015 8:39 AM
42	Road access is a problem	11/8/2015 8:02 AM
43	to hard to get to	11/7/2015 11:24 AM
44	Plan to use as transient	11/7/2015 11:23 AM
45	See option 1.	11/6/2015 10:57 PM
46	Need 5,000 feet of water	11/6/2015 9:59 PM
47	The commute is too far from where my current business needs are.	11/6/2015 8:57 PM
48	Too far from home	11/6/2015 7:29 PM
49	Nothing there ... no destination for me or my clients ... dumb idea to locate a seaplane base where there is nothing there for pilots, passengers and clients.	11/6/2015 5:40 PM
50	Native Corp. land surrounds airport land.	11/6/2015 5:31 PM
51	Too far to drive to	11/6/2015 5:16 PM
52	see previous answer	11/6/2015 4:47 PM

53	All	11/6/2015 4:39 PM
54	Site 1 is more desirable	11/6/2015 4:36 PM
55	No Need to move, Would use the facility if Fuel was avalible	11/6/2015 4:04 PM
56	Residence in Fairbanks	11/6/2015 3:18 PM
57	too far from residence	11/4/2015 10:39 AM
58	No private land to purchase	11/2/2015 6:26 AM
59	Location is to far from the current BIG LAKE Airport	11/1/2015 10:52 AM
60	Location	10/31/2015 9:20 PM
61	Too distant.	10/31/2015 9:19 AM
62	Too far from house and work.	10/31/2015 3:01 AM
63	Only if I lost slip I currently have	10/30/2015 4:52 PM
64	Don't live in the Mat-Su. I need a viable place to use as a transient pilot!	10/29/2015 9:44 AM
65	See Above	10/27/2015 10:57 AM
66	Too far from residence AND too far from where I would use aircraft.	10/24/2015 7:31 PM
67	Too far	10/24/2015 6:38 PM

Q50 If you own an aircraft, would you consider moving to site 3?

Answered: 123 Skipped: 114



Answer Choices	Responses	
Yes	**18.70%**	23
No	**81.30%**	100
Total		**123**

#	Which aircraft?Why or why not?	Date
1	Looks like it would cost a lot of money for development	11/30/2015 11:04 AM
2	Staff is out if touch with reality	11/29/2015 5:11 PM
3	I'd rather fly to an existing lake. Makes no sense to build another one.	11/29/2015 2:36 PM
4	The prospect of creating a manmade seaplane waterway is ridiculous considering the number of natural lakes that are suitable.	11/29/2015 11:27 AM
5	Way too small.	11/25/2015 5:15 PM
6	To far from present residence.	11/25/2015 3:36 PM
7	ONLY GOOD FOR TOUCH AND GO'S	11/24/2015 4:15 PM
8	Fine where I am at	11/24/2015 4:04 PM
9	As with site 2, this one seems undesirable from the perspective of proximity to Goose Bay strip activity.	11/24/2015 2:07 PM
10	I live in Anchorage.	11/21/2015 12:11 AM
11	Never, this is way off the beaten path. Ridiculous choice!!	11/20/2015 2:27 PM
12	No lake	11/20/2015 1:27 PM
13	Too far away	11/20/2015 10:59 AM
14	Nearest to road system and most potential for designing a good float plane base. Save money on the roads that would be required to Cow Lake and Seven Mile Lake and put the money into the airport. This is the one you want.	11/20/2015 10:02 AM
15	Cessna 180 Float Plane I like the gravel pit for its openness and the ability to create a first float plane service, close to road access, ability to access not only from Anchorage north but from the Mat-Su south.	11/19/2015 11:26 AM
16	Too far from primary roads.	11/14/2015 6:33 PM
17	Anchorage is fine	11/13/2015 11:07 PM
18	Possibly if access from Anchorage was more expediant.	11/13/2015 6:48 PM
19	tooo to far.	11/13/2015 2:42 PM

20	This is the least desirable option of the three. However if I moved to MSB and it were near by I would park there. However this option does not provide any benefit as a fuel stop.	11/13/2015 9:42 AM
21	seriously? I've lived in the valley for 15 years and I don't know where this site is, but it doesn't look like it even has a lake! are you considering building a water lane in a gravel pit?	11/13/2015 8:37 AM
22	Too far from where we live	11/13/2015 8:18 AM
23	see comments above ... this is the most ridiculous location of the 3. Why not pick a location that is currently a destination for pilots and passengers with existing lakes like Big Lake, Willow, or Talkeetna ... even Palmer or Wasilla if there is a potential to build a water lane?	11/13/2015 7:17 AM
24	you already have a road. sell the gravel to help fund the project	11/13/2015 5:48 AM
25	Less remote	11/13/2015 4:18 AM
26	Transient user	11/12/2015 8:09 AM
27	All of these options are way to far away from the core area to be useful for business and tourism industry	11/10/2015 7:44 PM
28	Too far away.	11/10/2015 4:44 PM
29	C 206	11/10/2015 4:01 PM
30	too far from my home	11/10/2015 3:48 PM
31	Too far	11/10/2015 3:45 PM
32	I already own a hangar at Anderson Lake.	11/10/2015 3:20 PM
33	Yes if was the closest to my new house, or recreation activities	11/10/2015 12:08 PM
34	Float facility?	11/8/2015 2:57 PM
35	I already have tie downs	11/8/2015 10:12 AM
36	Distance from residence	11/8/2015 9:32 AM
37	Must have airstrip co-located.	11/8/2015 8:41 AM
38	I own my own hanger/house on a private airport.	11/8/2015 8:39 AM
39	Primarily interested in floats	11/8/2015 8:02 AM
40	currently too far for practical storage/use	11/7/2015 11:24 AM
41	Plan to use as transient	11/7/2015 11:23 AM
42	Both wheels and floats OK	11/7/2015 9:44 AM
43	Manmade water lanes are not as safe for float operations as longer and wider lakes. The Kenai and Nenana float lanes are examples. They are adequate for occasional use, but I would not want to operate primarily from them. If something goes wrong on takeoff, you have very limited options at these types of facilities.	11/7/2015 7:31 AM
44	Too far from where I live for ALL three locations.	11/7/2015 4:51 AM
45	See option 1	11/6/2015 10:57 PM
46	The commute is too far from where my current business needs are.	11/6/2015 8:57 PM
47	Too far from home	11/6/2015 7:29 PM
48	c-185	11/6/2015 6:32 PM
49	Nothing there ... no destination for me or my clients ... dumb idea to locate a seaplane base where there is nothing there for pilots, passengers and clients.	11/6/2015 5:40 PM
50	Too far to drive to	11/6/2015 5:16 PM
51	same	11/6/2015 4:47 PM
52	See above.	11/6/2015 4:42 PM
53	All	11/6/2015 4:39 PM
54	Site 1 is more desirable	11/6/2015 4:36 PM
55	No Need to move, Would use the facility if Fuel was avalible	11/6/2015 4:04 PM
56	Residence in Fairbanks	11/6/2015 3:18 PM
57	too far from residence	11/4/2015 10:39 AM

58	Small and far away	11/2/2015 6:26 AM
59	Location is to far from the current BIG LAKE Airport	11/1/2015 10:52 AM
60	Location	10/31/2015 9:20 PM
61	Too distant.	10/31/2015 9:19 AM
62	Too far from house and work	10/31/2015 3:01 AM
63	Too far from home	10/30/2015 5:51 PM
64	No lake for when I'm on floats.	10/30/2015 5:20 AM
65	Too far from my residence	10/30/2015 12:40 AM
66	Don't live in the Mat-Su. I need a viable place to use as a transient pilot!	10/29/2015 9:44 AM
67	See above	10/27/2015 10:57 AM
68	Too far from residence AND too far from where I would use aircraft	10/24/2015 7:31 PM
69	Too far	10/24/2015 6:38 PM

Q51 How do you think aviation in the MSB is growing?

Answered: 82 Skipped: 155

#	Responses	Date
1	I think it is growing just fine.	11/30/2015 11:07 AM
2	Need regulations and limits	11/29/2015 5:12 PM
3	More people, more aircraft, Wolf Lake seems busy based on radio transmissions. Big Lake would be the best choice for a sea plane base. Put in a nice restaurant next to it.	11/29/2015 2:38 PM
4	As the Anchorage bowl becomes more saturated General Aviation will continue to grow in the MSB. You simply get more for your investment here than in Anchorage.	11/29/2015 11:34 AM
5	I think the frequency change made it too busy. Why build a road to a remote place or build a base without a road when better options are available	11/25/2015 5:42 PM
6	I very much like the plethora of private airstrips in the borough. I would actively work to oppose regulating existing or future private airstrips (except to limit horsepower to under 300hp on residential area airstrips). It is a wonderful 'distinctive' of life in the borough.	11/25/2015 4:10 PM
7	Fast. New public floatplane base good idea, find a few better more closer lakes. The MSB has MANY OF THEM!!	11/24/2015 6:36 PM
8	IN SPITE OF THE POOR PLANING OR DIRECTION PEOPLE ARE GOING TO FLY IN ALASKA	11/24/2015 4:15 PM
9	Steadily	11/24/2015 4:05 PM
10	it is a growing "use"issue. There are numerous private strips and float plane properties.	11/24/2015 1:26 PM
11	I don't think it is out of control.	11/22/2015 8:25 AM
12	It may be growing slightly but in the 56 yrs I have lived in AK which a lot of it has been in the MSB, I have not seen a problem with the volume of traffic.	11/21/2015 8:46 AM
13	Slowly.	11/20/2015 2:30 PM
14	Aviation is shrinking. Active Pilots are down, airplanes sit due to the high cost of fuel, available personal income is down and people can not afford insurance, parts, and operating costs.	11/20/2015 12:30 PM
15	slow	11/20/2015 10:02 AM
16	Slowly increasing as more people begin to reside in the valley, and in particular, around the Pt. MacKenzie area lakes.	11/19/2015 9:30 AM
17	It's not...	11/15/2015 5:12 PM
18	Unfortunately, I think the pilot base is shrinking over time.	11/14/2015 6:37 PM
19	Aviation in the MSB is probably static, may be changing one way or another but I see few drivers for growth, to the contrary I have seen a shrinkage over the last 25 years. A dedicated Lake Hood class float plane base might be a chicken and egg thing but hard to tell.	11/14/2015 5:20 PM
20	NOT SURE	11/14/2015 1:59 PM
21	Not totally sure what this question is asking. I would guess that it is not growing rapidly. The pilot generation is aging.	11/13/2015 11:19 PM
22	With the growing population in the Mat Su it is only natural that more pilots would be in the Matsu too. There seems to be limited number of float plane locations that are open to the public, but enough air strips for wheeled plan.	11/13/2015 6:57 PM
23	yes	11/13/2015 4:14 PM
24	Growing	11/13/2015 10:46 AM
25	My general sense is that the population continues to increase so will the aviation. I would say most people who fly floats or skis purchase property that will support this, such as living on a lake, but I would guess that many would park at a new floatplane base. In order to make this an option, a lake must be designated because once there are homes or recreational cabins on a certain lake, the probability of making that lake a sea plane base will decrease drastically. Options such as lakes further north make more sense in the grand scheme of things. Either Willow or Talkeetna areas seem like they might make more sense, though to serve the Big Lake area and any potential growth to the west Cow Lake seams to like a good option.	11/13/2015 9:47 AM
26	steady at the present, but fast in the near future	11/13/2015 8:26 AM

27	Tourism	11/13/2015 8:17 AM
28	yes	11/13/2015 7:44 AM
29	You ask the obvious ... it's growing at an outrageous rate ... we've lived there for 20 years and the growth in the past 10 has been crazy.	11/13/2015 7:26 AM
30	How many pilots & frequency of travel	11/12/2015 10:30 PM
31	Rapidly	11/11/2015 1:08 AM
32	More Pilots are locating away from Anchorage. Better accessibility to the wilderness and storage of their aircraft away from the high traffic airports.	11/10/2015 10:12 PM
33	It huge. I know. I instruct with all of them. We need to expand on one of the lakes in the core area. Not so far out. There are too many hoodlums for one reason. I would rather see the Palmer airport get the work. It's already planted out. The same with Wasilla.	11/10/2015 7:45 PM
34	It seems to be stagnant for the most part.	11/10/2015 6:06 PM
35	Growing slowly. Always a congested mess on the weekend.	11/10/2015 4:29 PM
36	Too fast for safety. I'm part of the problem of too many small landing areas in a relatively small core area. Nice as it is too have AC at the house, I think the safety issue is huge. We really need a local seaplane refueling location.	11/10/2015 4:05 PM
37	no idea	11/10/2015 3:49 PM
38	This is a stupid qusetion... Not by leaps and bounds. It's not growing at all.	11/10/2015 3:46 PM
39	FAST! Lots more traffic every year. Glad to see plans to accommodate more are under development.	11/10/2015 3:25 PM
40	Not growing formally. Just many individuals creating many of their own private strips.	11/10/2015 12:09 PM
41	Rapidly	11/9/2015 3:40 AM
42	Moderate pace	11/8/2015 2:58 PM
43	Aviation will grow with the population which is the fastest growing area of the State	11/8/2015 10:14 AM
44	Slowly	11/8/2015 8:41 AM
45	Residential airstrip, float flying. ADS-B mandate 1/1/2020 will motivate many to leave the ANC area and base their aircraft in the MSB to avoid hardware upgrades to their avionics	11/7/2015 11:25 AM
46	slowly growing	11/7/2015 11:24 AM
47	Very Fast	11/7/2015 9:44 AM
48	At a healthy rate	11/7/2015 8:19 AM
49	There is a large volume of private, independent aircraft useage. I don't see a big need for large commercial operations, other than the facilities that are already available. As far as floatplanes go, I've never heard of any pilots needing more space to park a floatplane. There are many lakes in the valley for such activity. There is more parking space and operating lakes available than there are floatplanes and pilots.	11/7/2015 7:38 AM
50	Doing fine but it could use more hangar space at existing municipal airports.	11/7/2015 7:09 AM
51	Slow growth	11/7/2015 7:07 AM
52	I would use the float base as a transient stop overnight when I travel up to the area. I would also land and purchase fuel.	11/7/2015 6:45 AM
53	Very rapidly!	11/7/2015 4:52 AM
54	Slowly. I anticipate the number of private aircraft in the valley to grow after the 2020 ADS-B mandate goes into effect.	11/6/2015 11:00 PM
55	10% year	11/6/2015 10:01 PM
56	Airspace traffic is picking up in the area due to the amount of airports. It's not a terrible problem at this point. Always like seeing new aviators	11/6/2015 6:42 PM
57	Yes	11/6/2015 6:00 PM
58	level ... flat ... not growing, but very active and busy	11/6/2015 5:44 PM
59	Haphazardly	11/6/2015 5:32 PM
60	Rapidly!	11/6/2015 5:18 PM
61	Yes	11/6/2015 4:52 PM

62	I would guess it is somewhat stagnant based upon cost and difficulty dealing with the Federal and State governments. If it wasnt so heavily regulated I would expect it to grow exponentially as the valley grows.	11/6/2015 4:43 PM
63	Rapidly	11/6/2015 4:39 PM
64	More MSB residents have more disposable income.	11/6/2015 4:38 PM
65	Growing because their is room to grow. Not everyone likes combat flying or paying rent and taxes.	11/6/2015 3:19 PM
66	No opinion.	11/6/2015 3:19 PM
67	Steadily	11/6/2015 3:03 PM
68	It is growing	11/2/2015 6:27 AM
69	Aviation in MSB is growing. But it is being pushed to grow by people who believe that there should be airports and float plane facilities everywhere in the borough without regard for the area. There is no factual evidence that there is additional need for float plane access. The talk about demand is anecdotal especially when there is talk about a new float plane base in the northern part of the borough. There are already 23 registered float plane bases in the borough. What RASP II is working on is appropriate for the southern part of the borough because of the overflow on Lake Hood.	11/1/2015 12:16 PM
70	The only development has been done by individuals, and two state owned airports.	11/1/2015 11:02 AM
71	Rapidly	10/31/2015 9:20 PM
72	Modestly. The State of AK's finances are in dire shape and much of AK aviation is supported by discretionary spending. As higher paying energy sector jobs are lost, the trickle down effect will be felt in the aviation community.	10/31/2015 9:22 AM
73	Private Air parks, with hanger homes	10/30/2015 4:55 PM
74	I don't thing the MSB is even aware of how fast it is growing.	10/30/2015 12:28 PM
75	Slowly	10/30/2015 5:20 AM
76	I do not understand this question. Do I believe that it is growing in a sustainable way? Probably so.	10/30/2015 2:02 AM
77	Slowly because the lack of viable facilities. I used to come to the Mat-Su for my maintenance but don't anymore because the lack of services for transient float planes.	10/29/2015 9:46 AM
78	Aviation is growing at a healthy rate. It is essential that correct locations are determined for future airports - those which can avoid conflicted airspace and user conflicts.	10/28/2015 4:24 PM
79	It is growing very fast & there are too many non aviation subdivisions being allowed too close to existing airports	10/27/2015 11:16 AM
80	Rapidly	10/27/2015 10:58 AM
81	Growing at a reasonable pace and at least growing unlike the lower 48 where general aviation is declining due to local govt. non support or opposition.	10/25/2015 1:23 PM
82	This is a mixed bag. At local levels, some areas are saturated and some areas are closed to new development. It seems difficult top predict in general given expected population growth and projected state tax revenues. The use of aircraft for tourism and personal use seems positive, but public facilities don't always match needs. The key questions with float planes is to ask who is going to use them and where are they going to go with the plane. Then centralize the location of that facility. The MSB lacks an all weather jet airport. An area for this should be identified and acquired as the most important priority.	10/24/2015 7:44 PM

Q52 Do you have any additional comments?

Answered: 45 Skipped: 192

#	Responses	Date
1	None of these sites make sense to me for business. They are all several miles from any towns, residential area, or infrastructure. I am not sure what the purpose of these locations is but I probably would not keep my plane at any of them unless I moved closer to their location.	11/30/2015 3:21 PM
2	Mat Su Staff should be fired	11/29/2015 5:12 PM
3	Put the sea plane base on Big Lake.	11/29/2015 2:38 PM
4	Much of the future of General Aviation hangs in the balance of who occupies the white House. If we continue down a secular progressive path of wealth redistribution and heavy handed government agencies such as the EPA and IRS, General Aviation will eventually be strangled.	11/29/2015 11:34 AM
5	I do not think enough analysis was given to placing a waterway landing area next to, and east of the North/South runway at Palmer Municipal Airport. It was primarily dismissed without any hard analysis at all. 1. It has a great landing area with Navigation aids and weather that does not have to be built from scratch at all! 2. It would improve the economics of running Palmer Municipal Airport to the point where Palmer may become sustainable on its own revenues without subsidy! 3. It would greatly reduce the site of a 'greenfield' airport by incorporating its construction into the Matanuska River braided outflow area, 4. It would allow federal and state funds to assist in performing Matanuska River channelization that may save many houses on the east side of the river, 5. It would incorporate salmon enhancing features as a prerequisite to construction- for the benefit of all borough residents, 6. It would allow Chugiak, Birchwood, Eagle River and East Anchorage pilots to have a logical float plane alternative to Lake Hood - in addition to the float plane operators located primarily in the central corridor of the MSB. 7. It would allow Palmer to make East of N/S runway leaselot improvements to the airport, 8. It would allow the golf course to be improved along with a 'fix' to the golf course fence location problem as a part of the project. 9. It would facilitate considerable tourism, flight-seeing and recreational opportunities as the waterway area opens to a a beautiful part of Southcentral Alaska that is located close to 1/2 the population of Alaska. The one structural problem would be the grade change between businesses located to the west of the N/S R/W getting to and from a waterway located 50' lower down on the east side. But there are smart engineers who can easily design a ramp out of the current bluff to give a 1%, or less, grade.	11/25/2015 4:10 PM
6	The best place for a float plane basin that serves the msb area is closer to Palmer/Wasilla. This will also allow operators of Lake Hood to effectively use the location.	11/24/2015 1:26 PM
7	What is the reason for believing growth is out of control and additional facilities are needed? Who picked these 3 locations and why? Who is going to pay for the extensive infrastructure, roads, power,security etc. that will be required. It is working just fine now. Leave it alone.	11/22/2015 8:25 AM
8	I don't understand why you are looking at sites that you will need to spend millions of dollars to provide access to. There are several lakes in the MSB that are already established with roadway access and utilities to them. Why would you be looking at remote sites. Something doesn't sound right to me, and there is more to this project that is not being presented to the public. I am also curious why you have not had a public process yet, besides this survey. A public meeting/open house is definitely a necessity. Thank you	11/21/2015 8:46 AM
9	Come up with better choices. The three you list are just rediculous.	11/20/2015 2:30 PM
10	It seems Cow Lake is way off the highway/utility system and away from populations centers to be a viable location.	11/20/2015 12:30 PM
11	How about putting out a survey that affects users and property owners that do not own an aircraft	11/20/2015 9:56 AM
12	Not at this time. Thank you for the opportunity to provide input/comments.	11/19/2015 9:30 AM
13	Having a dedicated float plane maintenance and parking facility would bring in pilots and revenue who currently have to endure decades long wait times for a slip at lake hood. The Seven Mile lake option seems the closest to the main population centers in the Valley and would be the most convenient for most.	11/14/2015 6:37 PM
14	As an interested party I had the following comments: 1. The Cow Lake site makes no sense at all - access is totally problematic and it is isolated from any kind of basic services - fire, medical, commercial, communications, sewer, water, power. It has either been in or bordered exactly on several TFR's in recent history and could easily get caught in a wildfire event. Two have sandwiched that lake in recent memory, Millers Reach in the '90s and the Sockeye Rd event of 2015. 2. The site "Gravel Pit" is VERY poorly presented, very hard to even get a grasp as to where it is. Finally managed to ferret it out squinting at the "area" map and via process of elimination and some stare and compare with Google Earth figured it out.	11/14/2015 5:20 PM

15	I'm not aware of the need for a new seaplane facility in the MSB. According to folks I talked to at DOWL at the Lake Hood Planning meeting, there are spots available for rent on Lake Hood that are not being taken advantage of. The Av. Heritage Museum has open spots. The Hood waiting list is not as long as it used to be. My father waited 17 years. I've been told it's closer to 10 now. I think that number will keep going down as the baby boomer generation pilots start hanging up their wings. If you need more seaplane facility space, but were unable to use Willow Lake, due to noise complaints and jet skis, why would it work in an area like Cow Lake? At least at Willow Lake the residents are already accustomed to the air traffic from the Willow strip.	11/13/2015 11:19 PM
16	Being a property owner on Redshirt Lake, I thought my mom or I would have been contacted for comments on this study before I read about it in the paper. I also talked to a property owner on Cow Lake and he didn't now any thing about the study either. Were any property owners around the projects notified of the study?	11/13/2015 6:57 PM
17	this is foolishness. If there is going to be a public seaplane base in the matsu valley, it needs to be at the Wasilla Airport. I understand that the waterway at Jacobson Lake runs perpendicular to the runway and could potentially cause conflict without a control tower, so the obvious sollution is to put in a waterway that parallels the runway like in Fairbanks, Kenai and Juneau. Building a seaplane base 30 plus miles from the Palmer Wasilla core area is rediculous.	11/13/2015 6:12 PM
18	A float plane facility is badly needed in Talkeetna. Many of us don't operate on floats because of the lack of facilities.	11/13/2015 4:14 PM
19	Have you considered somewhere on/near the road system? How about Willow or Talkeetna? Talkeetna's airspace is pretty busy with commercial traffic, but Willow might be good. Close to an airport with fuel and maintenance and lots of homes and businesses. same goes for Wasilla.	11/13/2015 8:44 AM
20	Great to have options, but having maintenance facilities and fuel is a big thing.	11/13/2015 8:26 AM
21	I think you should consider contacting the Talkeetna Community Council or members of the aviation community and find out what their needs are. Because of territorialism and land designation, new comers have no where to park a float plane!	11/13/2015 8:17 AM
22	Big Lake is the most appropriate location. Thousands of people live in the area, many travel there from Anchorage and other areas for both business and recreation year round. There are plenty of reasons to go there and base an airplane in that area, including the fact that it already has excellent road access. There are shops, restaurants, homes, cabins, a post office, fire department, library and all kinds of services. There are many reasons why folks want to and need to travel there, unlike any of the 3 sites that are being considered.	11/13/2015 7:26 AM
23	As a new pilot, it is not an easy area to learn and watch for so much traffic.	11/12/2015 10:30 PM
24	Who came up with these sites needs to reconsider. Period.	11/10/2015 7:45 PM
25	A public fuel dock and possibly float slips would be nice. Preferably located between palmer and big lake.	11/10/2015 4:46 PM
26	More lakes with fuel available to purchase would be very useful and improve safety.	11/10/2015 3:49 PM
27	There is a strong need for fueling facilities for float planes in the Valley. There are none at all right now. Pick a spot for float plane operations that has the longest possible stretch of water so aircraft can depart with full fuel and at gross weight.	11/10/2015 3:25 PM
28	Insufficient location info on site 1,2, & 3 to respond on relocation of aircraft.	11/9/2015 3:40 AM
29	Please Hurry and expand any seaplane Base	11/7/2015 9:44 AM
30	I do not want to see ANY of my tax dollars spent on developing a new base. Let private enterprise build something. It will be better, and less expensive. Consider allowing private enterprise to lease and build on MSB property.	11/7/2015 7:38 AM
31	Correct site maps, so people can have a clear picture of location to other references that are familiar.	11/7/2015 7:07 AM
32	None at this time.	11/7/2015 4:52 AM
33	If they put a bridge or ferry access to Anchorage, I think all three options would quickly become very viable.	11/6/2015 9:00 PM
34	Give up trying to find a seaplane base where there are no services, no destination for pilots and/or passengers. No pilot will base a plane on a seaplane base that is remote with no reason to be there. Find a place like Big Lake or Willow where people need to go for some reason. Lots of lakes, but not many that are fly-in destinations.	11/6/2015 5:44 PM
35	The questions on the 3 lake sites are too restrictive and not well enough defined: what are the parameters for the lakes? length width, approaches; larger scale maps with better location information needed. How about owners who own current docking/hangar facilities and their need for fuel and maintenance?	11/6/2015 5:18 PM
36	It seems the MSB and the DOT fail to see the value of a fine lake and airport located at Willow. I've been operating a seaplane facility here for 12 years and it works very well.	11/6/2015 4:52 PM
37	The site maps may not be clear to someone not familiar with those locations.	11/6/2015 4:38 PM
38	No	11/6/2015 3:19 PM

39	The Mat Su Borough Aviation Advisory Board is very prejudiced towards pushing more floatplane bases in the northern part of the valley against the wishes of the community. Their minutes are not transparent and there is no member on the board who represents the public interest. This should be changed.	11/1/2015 12:16 PM
40	Would like to see the MSB support aviation more in the future, its history has been very little to NO support or development.	11/1/2015 11:02 AM
41	Safety issues	10/31/2015 9:20 PM
42	How did the three locations get selected and by who?	10/30/2015 12:28 PM
43	Have you considered establishing an amateur radio APRS station in the Valley to help track aircraft? I can provide more details if you wish.	10/30/2015 2:02 AM
44	Don't live in the Mat-Su. I need a viable place to use as a transient pilot on floats!	10/29/2015 9:46 AM
45	At the local level, the MSB should strive to reach a good mix of private development and public facilities, including identifying a system of lakes accessible to multiple users of float planes. A long range plan might be to identify key exisiting airports an develop additional facilities in a case by case manner rather than investing on unproven ground.	10/24/2015 7:44 PM

Q53 If you would like us to contact you later for additional comment please leave your contact information below.

Answered: 38 Skipped: 199

Answer Choices	Responses	
Name	94.74%	36
Company	31.58%	12
Address	73.68%	28
Address 2	7.89%	3
City/Town	81.58%	31
State/Province	76.32%	29
ZIP/Postal Code	73.68%	28
Country	47.37%	18
Email Address	92.11%	35
Phone Number	78.95%	30

#	Name	Date
[redacted]		

#	Company	Date

#	Address	Date

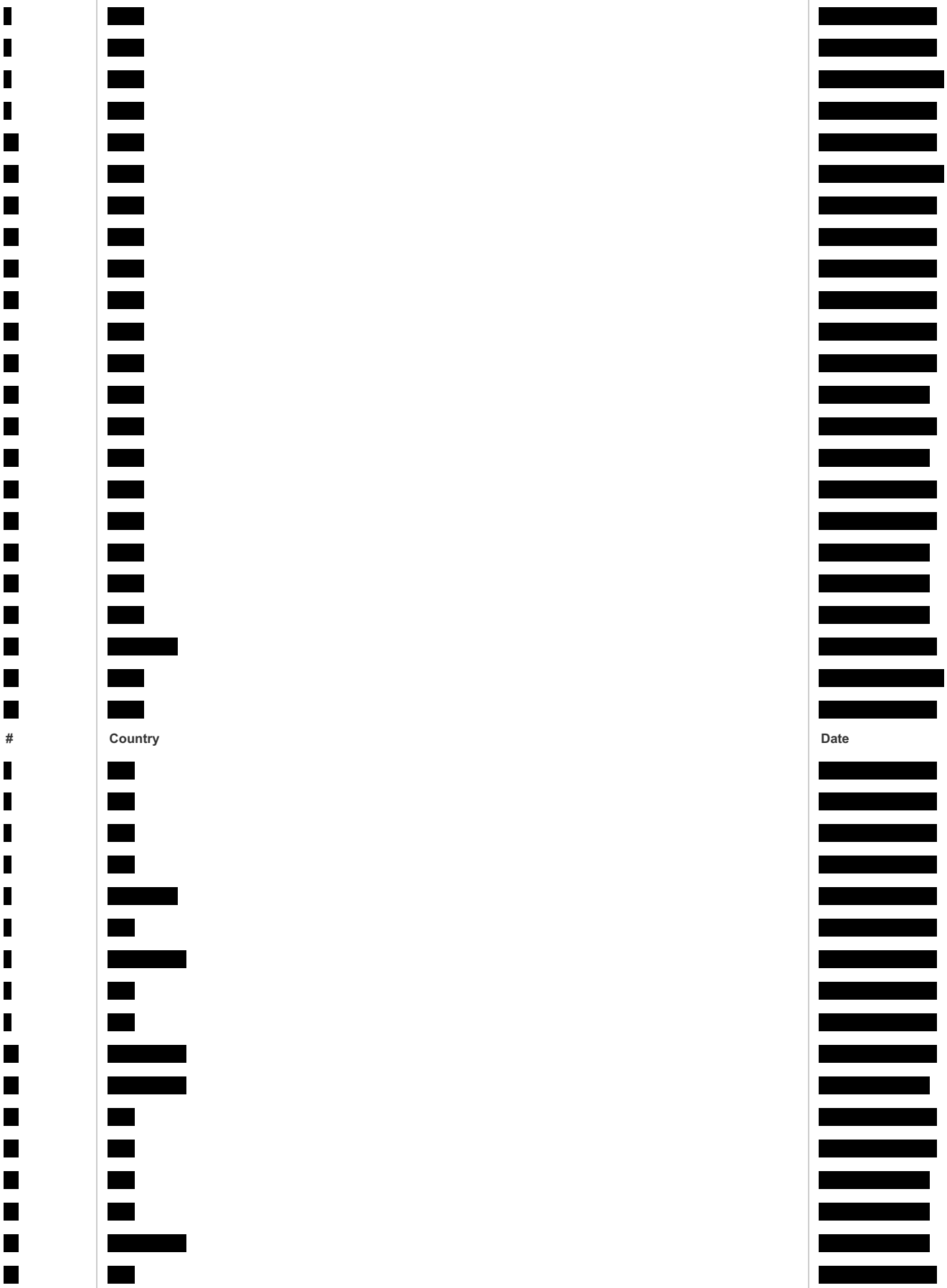
[redacted]

#	Address 2	Date
[redacted]		

#	City/Town	Date
[redacted]		

#	State/Province	Date

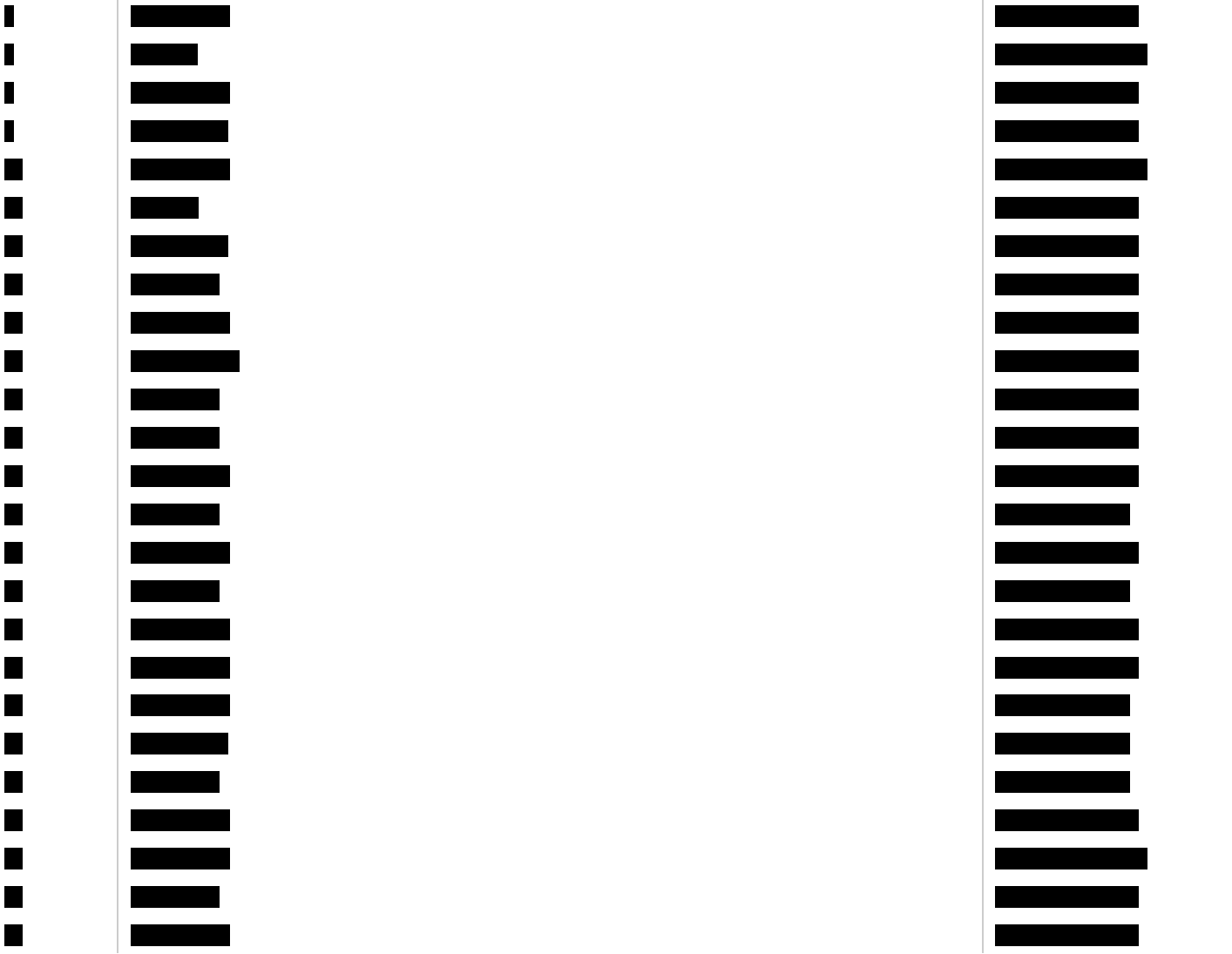
#	ZIP/Postal Code	Date



#	Country	Date

#	Email Address	Date
[redacted]	[redacted]	[redacted]

#	Phone Number	Date
[redacted]	[redacted]	[redacted]



Matanuska-Susitna Regional Aviation System Plan Phase II

The Matanuska-Susitna Borough (MSB) in coordination with DOWL is completing a MSB Regional Aviation System Plan (RASP) Phase II.

Phase I:

In 2008 the MSB and DOWL did extensive research to identify demand for new airport facilities in the MSB. The study performed a preliminary screening of over 33 sites within the MSB. Recommendations included a floatplane facility in the South MSB area, with a water runway length of between 4,000 and 5,000 feet and an initial gravel runway and with the flexibility to expand to a paved instrument runway up to 6,000 feet. Phase I recommended three sites within the south MSB:

- Goose Bay Airport with a new pond
- Big Lake Airport with a new pond
- Seven Mile Lake

Phase II:

- Task 1: Economic impacts — June 2015 – January 2016
  - » Determine the economic impact of aviation at State of Alaska owned airports in the MSB
  - » Examine the operational relationship between the public and private airports
- Task 2: Airport /Floatplane Base Location Study — June 2015 – April 2017
  - » Reexamine the sites considered in Phase I with new research, interviews and surveys to confirm the selection of a final site
  - » Conduct a more detailed final site description and airport concept plan
  - » Identify and forecast airport operating costs, revenue projections, funding, as well as creating an implementation plan included in a final report
- Task 3: Public involvement — June 2015 – April 2017
- Task 4: Airport Master Plan and Airport Layout Plan Analysis — Completed
  - » Identify airports within the MSB needing airport master plans and airport layout plans and produce cost estimates.
- Task 5 Compatible Land Use Study — July 2015 – June 2016
  - » Identify land ownership, potential land use compatibility issues, and non-aeronautical development opportunities around State of Alaska owned public airports in the MSB.

Project Contact Information:

Jessica Smith — Jessica.Smith@matsugov.us

Leah Henderson — LHenderson@dowl.com

DOWL

RASP Phase II Survey Highlights:

237 - Respondents
166 - Operate an aircraft in the MSB
58 - Plan to obtain additional aircraft within 5 years
35 - Operate an aviation business

Site 1 - Seven Mile Lake

39 - Would consider moving to Site 1
23 - Would consider relocating business to Site 1
16 - Would open a new business at Site 1

Site 2 - Cow Lake

24 - Would consider moving to Site 2
12 - Would consider relocating business to Site 2
8 - Would open a new business at Site 2

Site 3 - Section 9 Gravel Pit

23 - Would consider moving to Site 3
15 - Would consider relocating business to Site 3
11 - Would open a new business at Site 3

How do you think aviation in the MSB is growing?

59 - Think it is growing*
19 - Think it is static*
4 - Think it is declining*

*Answers to MSB aviation growth were open ended. Results were paraphrased into the above three options.

Matanuska-Susitna Regional Aviation System Plan Phase II

Big Lake Community Council Presentation

April 12, 2016

RASP Phase II Team

* MatSu Borough
  * **Jessica Smith** – Transportation Planner
* DOWL
  * **Leah Henderson** – Project Manager
  * **Chris Cole** – Lead Planner

Regional Aviation System Plan (RASP) Phase I

* Regional Aviation System Plan (RASP) Phase I
  * Documented aviation facilities and identified demand
  * Recommended a future commercial seaplane base
  * Examined north and south sites
  * Preliminary Screening of sites
  * Recommended 3 sites for consideration
* Outcomes
  * Created MatSu Borough Aviation Advisory Board
  * Recommended phase II siting study

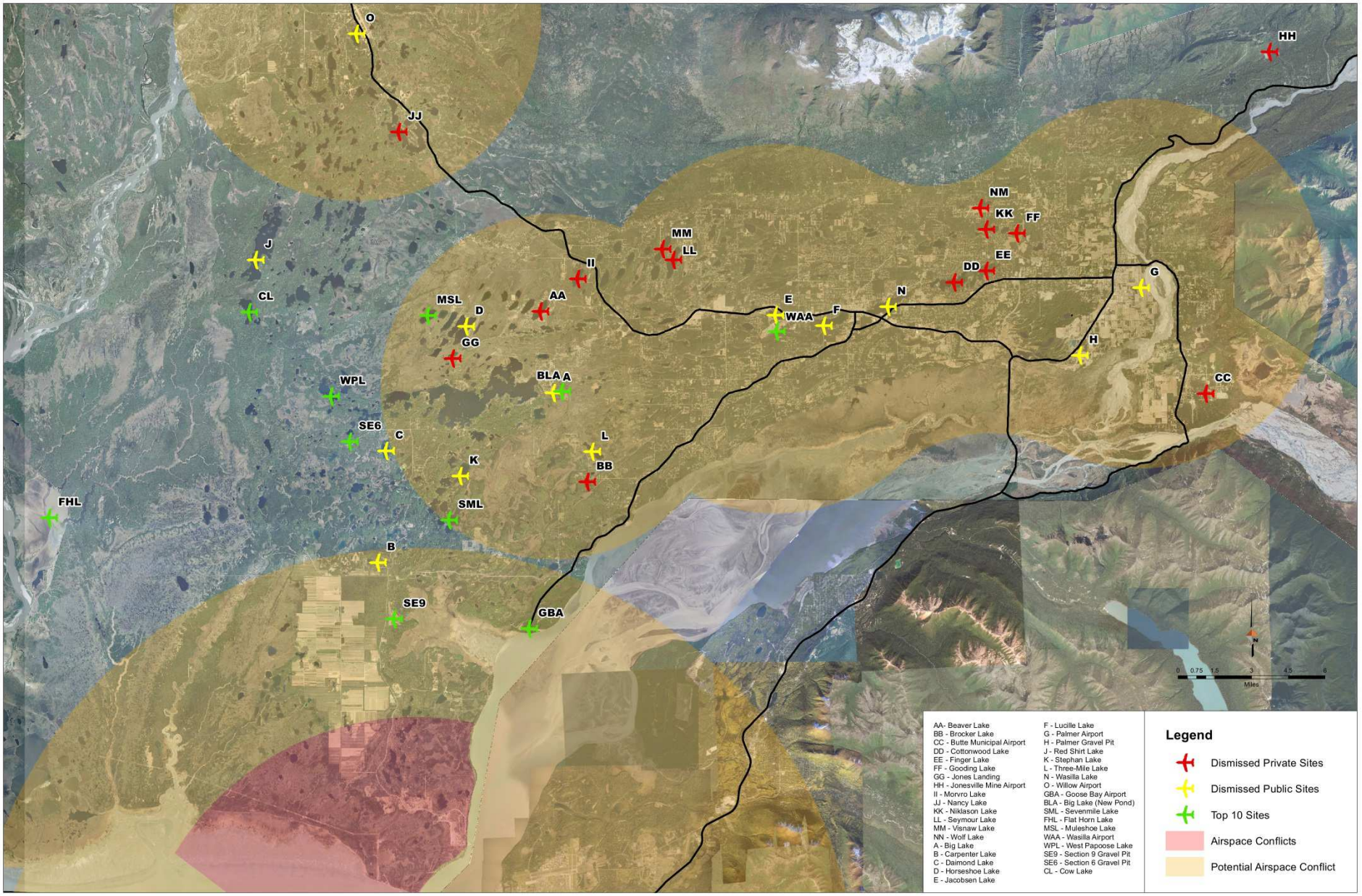
Regional Aviation System Plan (RASP) Phase II

* Regional Aviation System Plan Phase II
  * June 2015 – May 2017
  * Economic Impacts
    * Explored the Economic Impacts of Public Airports in the MatSu Borough
    * Public/Private Airport Relationships
  * Compatible Land Use
    * *State owned public airports only*
    * Identify land ownership
    * Identify land use compatibility Issues
    * Identify non-aeronautical development opportunities

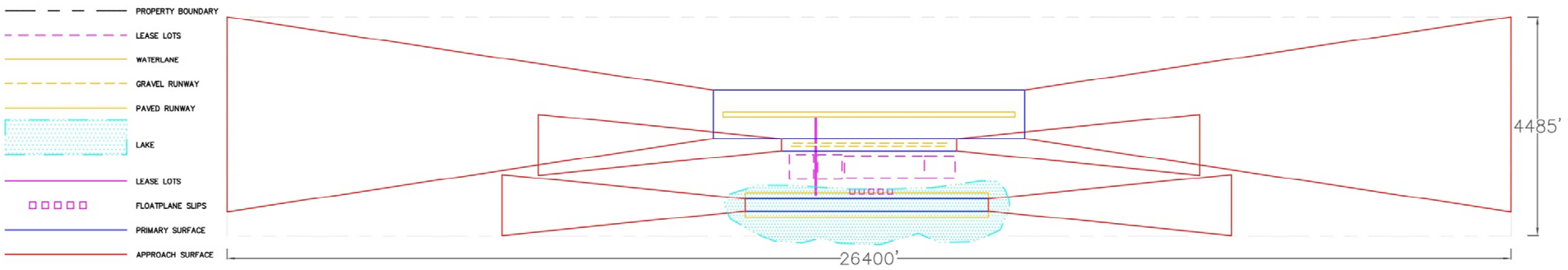
Regional Aviation System Plan (RASP) Phase II

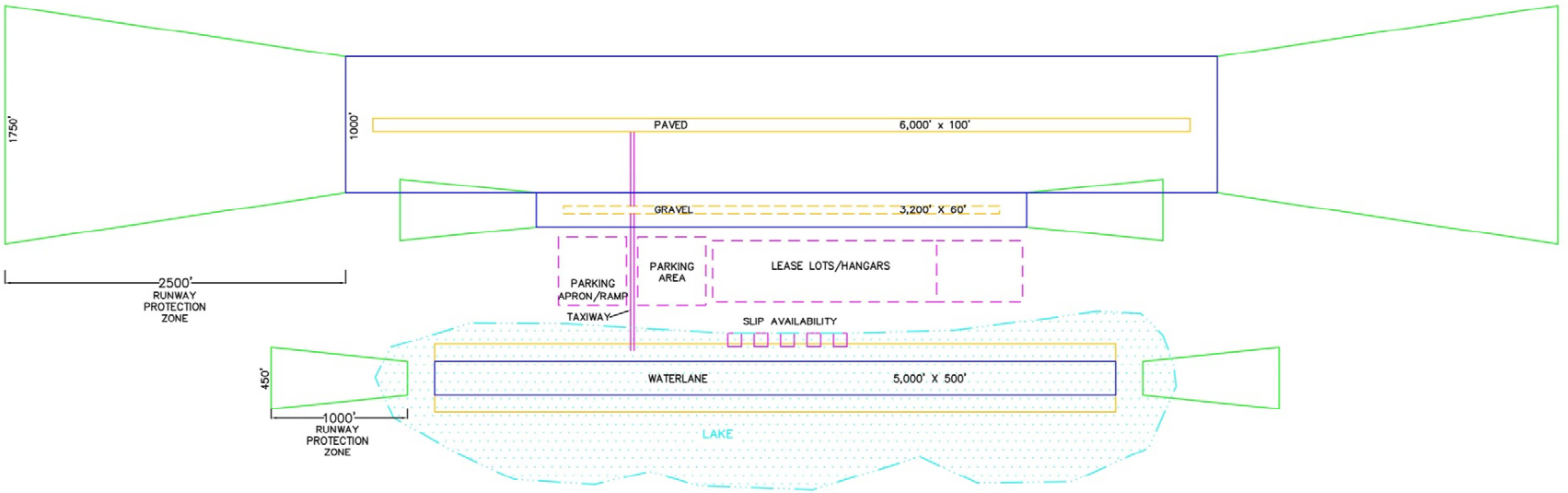
* Airport/Floatplane Base Siting Study
  * Identify top 10 locations and narrowed it down to 3
  * Survey
  * Final site selection
  * Activity forecast
  * Prepare airport concept plan
  * Airport operating costs & revenue projections, funding, implementation plan

Study Focus Area



Proposed Initial/Ultimate Facility





Proposed Evaluation Criteria

* Airspace
* Winds (Alignment)
* Topography
* Wetlands/Uplands
* Land Ownership
* Land Use
* Driving Distance
* Road Access
* Utilities
* Environmental Impact
* Public Support
* Size meets Initial Need
* Size meets Ultimate Need
* Cost

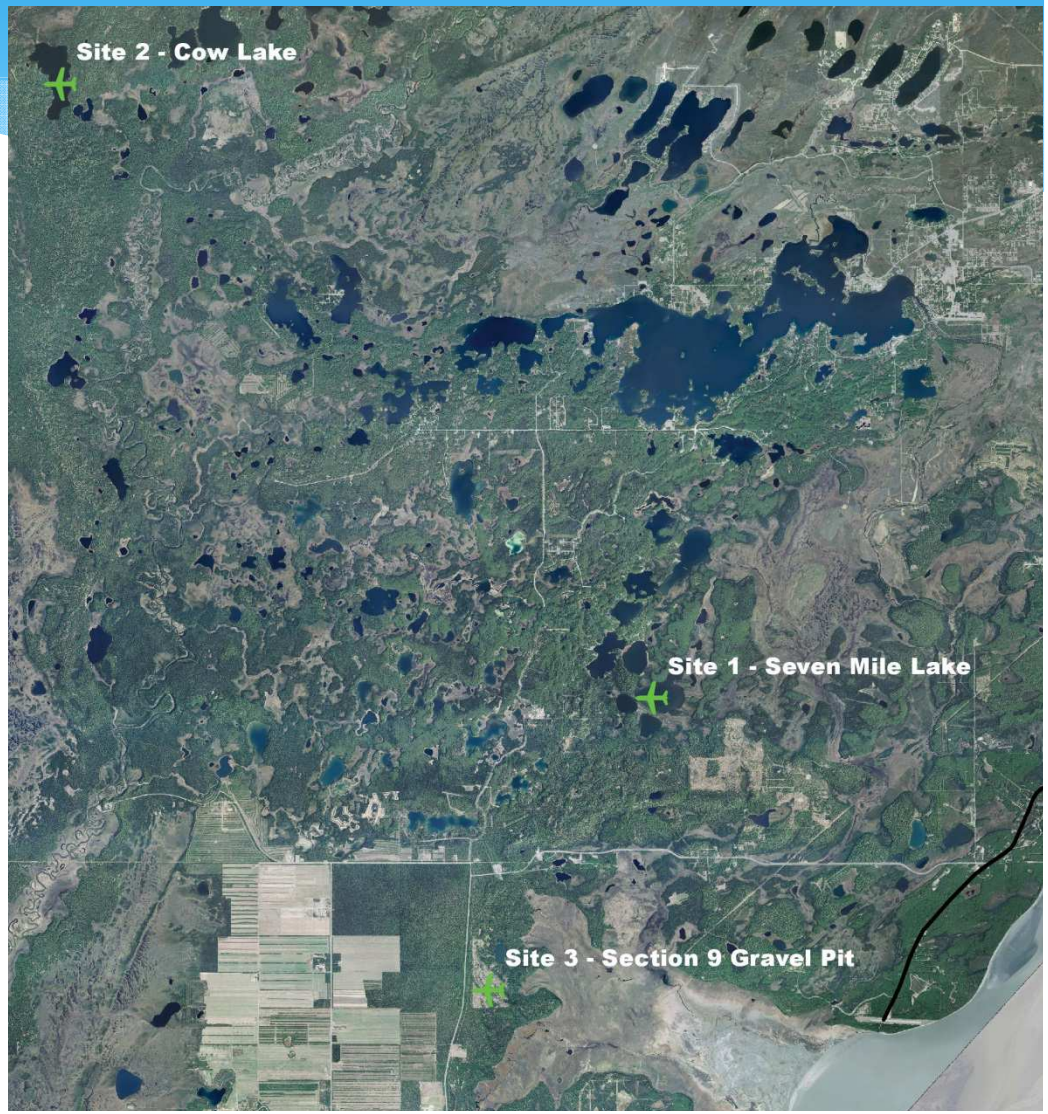
Top Ten Proposed Airport Sites

Top 10 Airports For Consideration

Site	Pros	Cons
Goose Bay Airport	- Existing gravel runway - MSB owned land nearby	- Game refuge nearby - Potential lack of water availability
Big Lake Airport (New Pond)	- Existing runway - Central location	- Compatible land issues in airspace - Re-alignment of existing runway will be needed - Potential incompatible land uses
Sevenmile Lake	- MSB owned land nearby - Existing lakes could be connected - Optimal location	- Land on southwest side privately owned - Current status in wetlands bank - Cost
Flat Horn Lake	- Large lake with good orientation - MSB land around most of lake	- No public development nearby - Currently a remote location - Cost - Distance from cities is poor
Muleshoe Lake	- Relatively undeveloped land - Good orientation for winds	- Poor road access available - Potential VOR conflicts - Wetlands
Wasilla Airport	- Less development costs needed - Existing runway and development areas	- Lack of water availability - Would be channel not lake
West Papoose Lake	- Near public road access and infrastructure - Good central location	- Lack of MSB land around lake - Existing residential land and recreational activity
Section 9 Gravel Pit	- Good location - Good public road access	- Dredging of a channel needed - Topography could be challenging
Section 6 Gravel Pit	- MSB owned land around area - Could meet ultimate needs	- Dredging of a channel needed - Residential development nearby
Cow Lake	- MSB and CIRI land around lake - Large lake to meet ultimate needs	- Driving distance is far from cities - No adequate access to lake

Top 3 Sites

* Narrow 10 sites to Top 3
  * Cow Lake
  * Section 9 Gravel Pit Site
  * Sevenmile Lake
* Survey
* Pros & cons to all three sites
* Caveat: all three sites had big challenges as a preferred site
* Final Site: Sevenmile Lake



Final Site Activity Forecast

* Activity Forecast
  * Initial Site (Initial build demand)
    * 2,200’ gravel runway and 2,500’ waterlane
    * 7 tie down spots & 8 slips
    * 3 commercial lease lots
  * 2040 Demand
    * Low growth: 27 slips and 21 tie downs
    * High growth: 39 floats and 27 tie downs

Next Steps

* Wrap up Airport Concept Plan
* Complete Operating Cost & Revenue Projections, Funding, Implementation Plan
* FAA & DOT review of Airport Concept Plan and Forecast
* Final Report

Contact/Questions

* Jessica Smith – MatSu Borough
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  * Phone: 861-8154
* Leah Henderson – DOWL
  * Email: lhenderson@DOWL.com
  * Phone: 562-2000
* Chris Cole – DOWL
  * Email: ccole@DOWL.com
  * Phone: 562-2000

Matanuska-Susitna Regional Aviation System Plan Phase II

Palmer Airport Advisory Commission

July 27, 2016

RASP Phase II Team

* MatSu Borough
  * Jessica Smith – Transportation Planner
* DOWL
  * Leah Henderson – Project Manager
  * Chris Cole – Lead Planner

Regional Aviation System Plan (RASP) Phase I

* Regional Aviation System Plan (RASP) Phase I
  * Overall documented aviation facilities and identified demand
  * Recommended a future commercial seaplane base
  * Examined north and south sites
  * Preliminary Screening of sites
  * Recommended 3 sites for consideration
* Outcomes
  * Created MatSu Borough Aviation Advisory Board
  * Recommended phase II siting study

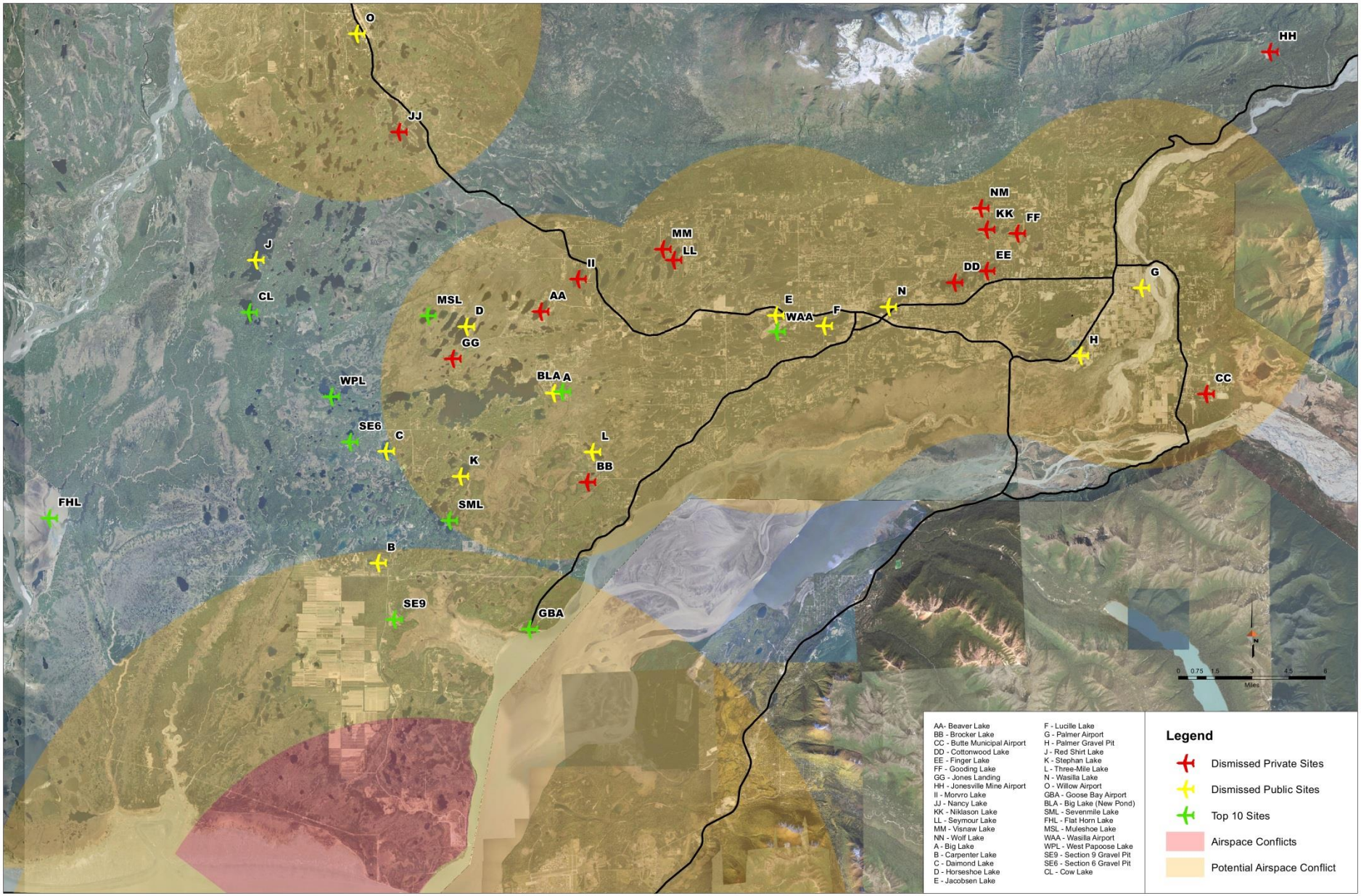
Regional Aviation System Plan (RASP) Phase II

* Regional Aviation System Plan Phase II
  * June 2015 – May 2017
  * Economic Impacts
    * Explored the Economic Impacts of Public Airports in the MatSu Borough
    * Public/Private Airport Relationships
  * Compatible Land Use
    * *State owned public airports only*
    * Identify land ownership
    * Identify land use compatibility Issues
    * Identify non-aeronautical development opportunities

Regional Aviation System Plan (RASP) Phase II

* Airport/Floatplane Base Siting Study
  * Identify preferred floatplane base location
  * Final site selection
  * Forecast
  * Prepare airport concept plan
  * Airport operating costs & revenue projections, funding, implementation plan

Study Focus Area



Proposed Facility Requirements

* Runway
  * 2,200’ (gravel) – Initial Runway
  * 3,200’ (gravel) – Future Runway
  * 6,000’ (paved) & 3,200’ (gravel) – Ultimate Runway
* Waterlane
  * 2,500’ – Initial Waterlane
  * 5,000’ – Ultimate Waterlane

Proposed Evaluation Criteria

* Airspace
* Winds (Alignment)
* Topography
* Wetlands/Uplands
* Land Ownership
* Land Use
* Driving Distance
* Road Access
* Utilities
* Environmental Impact
* Public Support
* Size meets Initial Need
* Size meets Ultimate Need
* Cost

Top Ten Proposed Airport Sites

Top 10 Airports For Consideration

Site	Pros	Cons
Goose Bay Airport	- Existing gravel runway - MSB owned land nearby	- Game refuge nearby - Potential lack of water availability
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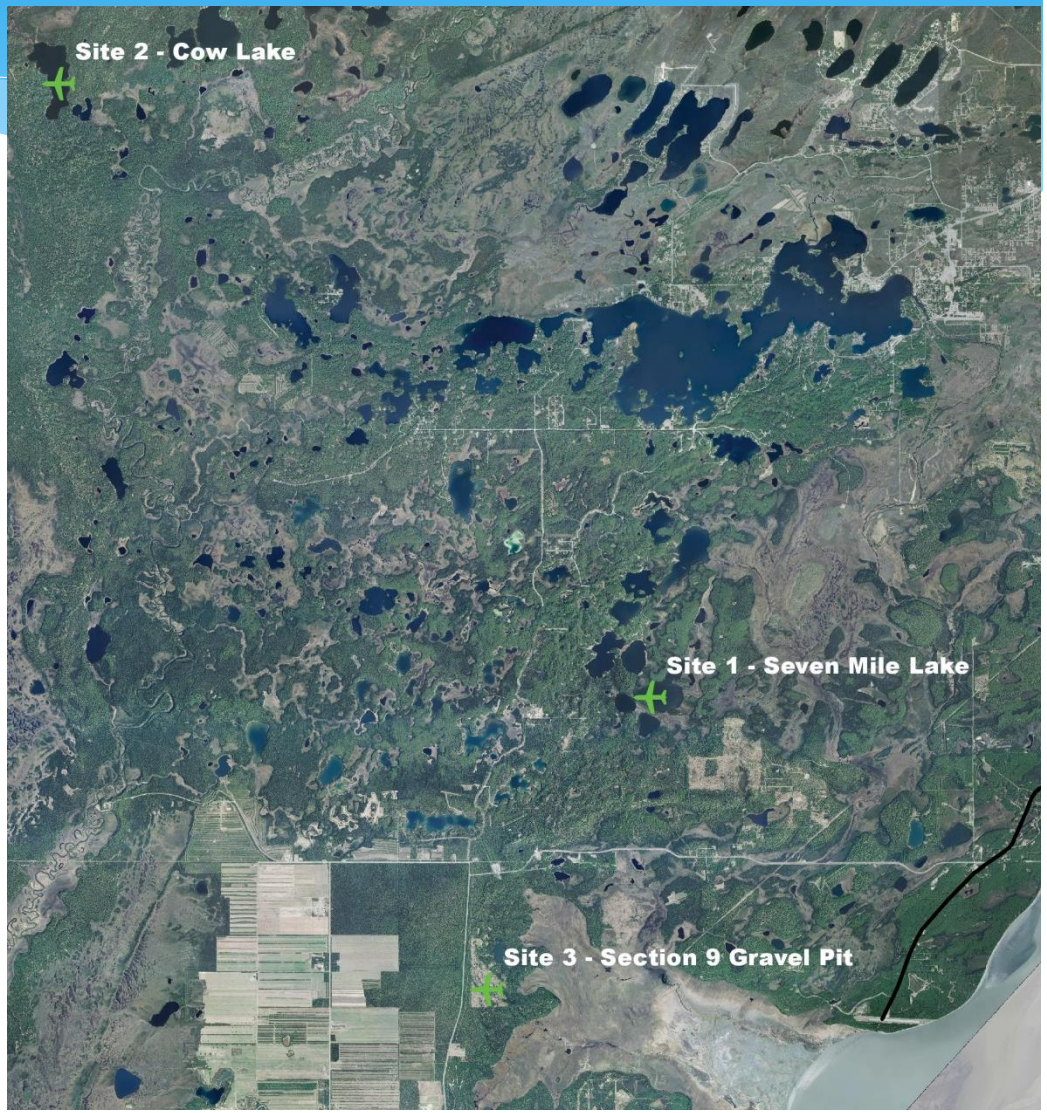
Top 3 Sites

* Narrow 10 sites to Top 3
  * Cow Lake
  * Section 9 Gravel Pit Site
  * Sevenmile Lake
* Pros and cons to all three sites
* Caveat: all three sites had big challenges as a preferred site
* Final Site: Sevenmile Lake



Final site – Sevenmile Lake

* Forecast
  * Initial Site (Initial build demand)
    * 2,200’ gravel runway and 2,500’ waterlane
    * 15 tie down spots & 14 slips
    * 3 commercial lease lots
  * 2040 Demand
    * Low growth: 33 slips and 17 tie downs
    * High growth: 42 floats and 20 tie downs

Next Steps

* Wrap up Airport Concept Plan
* Complete Operating Cost & Revenue Projections, Funding, Implementation Plan
* FAA & DOT review of Airport Concept Plan and Forecast
* Final Report

Matanuska-Susitna Regional Aviation System Plan Phase II

The Matanuska-Susitna Borough (MSB) in coordination with DOWL is completing a MSB Regional Aviation System Plan (RASP) Phase II

Phase I:

In 2008 the MSB and DOWL did extensive research to identify demand for new airport facilities in the MSB. The study performed a preliminary screening of over 33 sites within the MSB. Recommendations included a floatplane facility in the South MSB area, with a water runway length of between 4,000 and 5,000 feet and an initial gravel runway and with the flexibility to expand to a paved instrument runway up to 6,000 feet. Phase I recommended three sites within the south MSB: Goose Bay Airport with a new pond, Big Lake Airport with a new pond, and Sevenmile Lake.

Phase II:

- Task 1: Economic Impacts **Completed**
  - » Determine the economic impact of aviation at State of Alaska owned airports in the MSB
  - » Examine the operational relationship between the public and private airports
- Task 2: Airport/Floatplane Base Location Study **June 2015 – April 2017**
  - » Identified Sevenmile Lake as preferred site
  - » Conduct a more detailed final site description and airport concept plan
  - » Identify and forecast airport operating costs, revenue projections, funding, as well as creating an implementation plan included in a final report
- Task 3: Public Involvement **June 2015 – April 2017**
- Task 4: Airport Master Plan and Airport Layout Plan Analysis **Completed**
  - » Identify airports within the MSB needing airport master plans and airport layout plans and produce cost estimates
- Task 5 Compatible Land Use Study **Draft Under Review**
  - » Identify land ownership, potential land use compatibility issues, and non-aeronautical development opportunities around State of Alaska owned public airports in the MSB

For more information visit the project website at: ***http://www.matsugov.us/plans/rasp***

Project Contact Information:

Jessica Smith Jessica.Smith@matsugov.us

Leah Henderson LHenderson@dowl.com

DOWL

Matanuska-Susitna Regional Aviation System Plan Phase II

Do you have any comments for the project team?_____

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For more information visit the project website at: ***http://www.matsugov.us/plans/rasp***

Project Contact Information:

Jessica Smith — Jessica.Smith@matsugov.us

Leah Henderson — LHenderson@dowl.com

DOWL

Matanuska-Susitna Regional Aviation System Plan Phase II

Floatplane Base Siting Study:

The process to determine a site for a future commercial floatplane base started with re-evaluating the list of sites identified in the Phase I study and identifying any new potential sites. Thirty-seven sites were evaluated and 10 sites were chosen to be more thoroughly reviewed to determine a final site. The 10 sites were:

- Goose Bay Airport
- Muleshoe Lake
- Section 9 Gravel Pit
- Big Lake Airport (New Pond)
- Wasilla Airport (New Pond)
- Section 6 Gravel Pit
- Sevenmile Lake
- West Papoose Lake
- Flat Horn Lake
- Cow Lake

The 10 sites were evaluated more thoroughly using the following criteria:

- Airspace
- Topography
- Land Ownership
- Road Access
- Environmental Impacts
- Size Meets Initial Need
- Winds (Alignment)
- Wetlands/Uplands
- Size Meets Ultimate Need
- Utilities
- Public Support
- Driving Distance
- Cost

All evaluated sites had challenges, but the following emerged as the top three: Cow Lake, Section 9 Gravel Pit, and Sevenmile Lake. Ultimately, Sevenmile Lake became the preferred choice to build a commercial floatplane base.

- Sevenmile Lake is located about 6.5 miles south and west of Big Lake Airport.
- A majority of the Lake is surrounded by MatSu Borough property.
- The site size exceeds the ultimate facility needs.

The buildout of Sevenmile Lake was split into four stages over 20 years: Initial, Near-term, Mid-term and Ultimate. Key highlights of each stage include:

- Initial buildout: Waterlane length of 3,700' x 250', 14 slips, a floatplane ramp and 3 acres of tie down space.
- Near-term buildout: Gravel runway of 3,200' by 60', an additional 14 slips, 3 acres of tie down space and another floatplane ramp.
- Mid-term buildout: An additional 18 slips, and 4 acres of tie down space
- Ultimate buildout: Paved asphalt runway of 5,000' by 75', waterlane extension to 5,000' and an additional 9 slips (totaling 55 slips and 10 acres of tie down space).

Air Traffic Forecast, High Growth, Sevenmile Lake Airport

	Initial	+5 Years	+10 Years	+15 Years	+20 Years
Based Aircraft	15	34	46	55	66
Floats	8	20	27	33	39
Wheels	7	14	19	22	27
Enplanements	0	3,380	8,225	9,892	11,805
Operations	4,251	17,935	29,329	34,663	40,640

Source: Southeast Strategies, January 2016.

For more information visit the project website at: ***http://www.matsugov.us/plans/rasp***

Project Contact Information:

Jessica Smith — Jessica.Smith@matsugov.us

Leah Henderson — LHenderson@dowl.com

DOWL

APPENDIX B

Economic Contributions of Matanuska-Susitna Borough Airports

Economic Contributions of Matanuska-Susitna Borough Airports

Prepared for

The Matanuska-Susitna Borough

February 2016

Northern Economics

Wisdom • Trust • Relevance • Innovation

PROFESSIONAL CONSULTING SERVICES IN APPLIED ECONOMIC ANALYSIS

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Abbreviations

ADOT&PF	Alaska Department of Transportation and Public Facilities
AIP	Airport Improvement Program
BTS	Bureau of Transportation Statistics
DCCED	Department of Commerce, Community, and Economic Development
FAA	Federal Aviation Administration
MSB	Matanuska-Susitna Borough
NAICS	North American Industry Classification System
O&M	Operations and maintenance
RASP	Regional Aviation System Plan

Executive Summary

The diversity of size and scope of operations of public-use airports in the Matanuska-Susitna Borough (MSB) reflects the dual rural-urban nature of the borough. Similarly, the presence of 29 public-use and approximately 200 private-use aviation facilities in the MSB attests to the importance of both commercial and general aviation to the borough. While a unique mix of commercial and private aviation activity defines each of the largest public-use airports, in aggregate aviation in the MSB comprises a number of economic sectors that are vitally important to the larger economies of both the borough and Alaska. The MSB has contracted with DOWL to conduct comprehensive analysis regarding aviation in the borough, including an assessment of the economic impacts of eight of the MSB's public-use airports that together are home to the vast majority of the on-airport commercial operations in the borough. To this end, MSB and DOWL enlisted the support of Northern Economics, Inc.

This study conducted extensive analysis of the economic contributions of six state-owned and two municipally owned airports: Big Lake, Goose Bay, Lake Louise, Palmer, Skwentna, Talkeetna, Wasilla, and Willow. While these eight airports constitute only a small fraction of all the aviation facilities in the MSB, their collective economic contributions comprise much of the economic profile of aviation in the borough. The larger of these airports, in particular, provide fueling and maintenance services that are unavailable at most of the MSB's more than 150 other public- and private-use facilities and, therefore, are critical to the continued operation of these additional facilities. Businesses and government operations at the profiled public-use airports generate hundreds of jobs, as well as millions of dollars in labor income and capital and operating expenditures. Portions of the direct labor and output expenditures cycle back through the borough's and state's economies, creating additional jobs and spurring further economic activity. Northern Economics used extensive employment and expenditure data for leaseholders at many of Alaska's airports, in combination with a list of leaseholders at the MSB's profiled public-use airports, to estimate the number of jobs, labor income, and output generated by these airports.

As shown in Table ES-1, the study team estimates that profiled MSB airports were responsible for approximately 380 jobs, $21 million in labor income, and $17.5 million in output (business sales) within Alaska in 2014. More than 95 percent (370 of 380) of the jobs created by the MSB's profiled public-use airports and generated within the state were in-borough jobs; likewise, more than 95 percent of labor income associated with all in-state jobs was paid to employees working in the MSB. Meanwhile, capital and operating expenditures were more evenly distributed between the MSB and areas of the state outside the borough, with an estimated $12.2 million spent within the borough and $5.3 million spent in other areas of the state. The study team further found that indirect and induced labor income, which together comprise all labor income from jobs not directly tied to on-site airport operations but created by on-site airport activities, constituted less than 20 percent of all labor income in 2014. Indirect and induced output, meanwhile, comprised just over 20 percent of all output.

Table ES-1. Estimated Direct, Indirect, and Induced Jobs, Labor Income, and Output Generated by Eight Profiled MSB Airports, 2014

	Number of Jobs		Labor Income ($Millions)		Output ($Millions)	
Category	In-MSB	Other Alaska	In-MSB	Other Alaska	In-MSB	Other Alaska
Airport Operations	10	0	0.6	0.3	2.7	2.3
Leaseholders	360	10	19.9	0.5	9.6	3.0
Subtotals	370	10	20.4	0.8	12.2	5.3
Total In-State Effect	**380**		**21.2**		**17.5**	

Note: Indirect and induced employment figures have been rounded to the nearest ten jobs to reflect statistical uncertainty of modeling estimates. Job subtotals and totals also have been rounded to the nearest ten jobs. Number of jobs are presented in this table in terms of equivalent full-time jobs; Table 6 breaks down direct employment into full-time and part-time jobs.

Source: Northern Economics, Inc. and IMPLAN, 2015.

Interviews with MSB airport managers revealed several trends concerning aviation in the MSB. First, diversity of the communities and regions served by profiled MSB airports is reflected in the variable size, scope of services, and level of commercial versus private aviation activity across MSB airports. A few of the profiled MSB airports have little economic activity associated with them; one of these is located off the road system and represents the only means for transporting people and goods to and the community it serves. Other airports, such as Talkeetna, are home to commercial operations that are inextricably linked to the regional economy. Other trends in MSB aviation include a general increase in demand for aviation opportunities and associated support services that mirrors continued population growth within the borough; a disconnect between the ongoing expansion of aviation in the MSB and the amount of time that some airport managers have to focus on commercial growth at their respective airports; and a preference among many pilots who reside and keep their aircraft in rural locations outside the MSB to come to MSB airports for fuel and maintenance services.

1 Introduction and Study Purpose

Alaska's aviation industry drives local and state economic activity, provides vital support to many of the state's economic sectors, and acts as a lifeline between the state's rural communities and the world economy. Studies at the state level have shown that the businesses, agencies, and organizations that are located on airports and that comprise Alaska's aviation industry are a crucial component of Alaska's economy. They represent primary sectors of the economy such as government, trade, transportation and utilities, and hospitality and leisure. In FY 2007 these sectors were responsible for generating $3.5 billion of the $42 billion Alaska economy. This amount constituted 8.3 percent of Alaska's total Gross State Product and is 40 percent larger than the typical percentage seen in Lower 48 economies (Northern Economics 2009). The aviation industry in the Matanuska-Susitna Borough (MSB) is in many ways a microcosm of the statewide aviation industry but still reflects the borough's unique nature: the MSB is split by Alaska's largest highways, but includes vast reaches accessible only by air and water.

The purpose of this report is to document and estimate the economic contributions of MSB airports with the highest levels of economic activity. The aviation industry, as defined in this statewide analysis, includes all the businesses and organizations located at an airport. They are referred to in this report as "on-site entities." Spending by these firms and organizations results in other jobs and income—the "multiplier effect"—for businesses located elsewhere (i.e., "off-site"), creating a final economic effect that is greater than just the spending occurring on airports. This report builds on prior studies completed for the State of Alaska's Aviation System Plan in 2009 and 2011 by focusing exclusively on the MSB's network of municipal and state airports.

1.1 Report Structure

This report is broken into the following sections:

Section 1—Introduction

Section 2—Discussion of the airports included in this study

Section 3—Analytical methods

Section 4—Estimates of the economic contributions of on-airport activity in the MSB

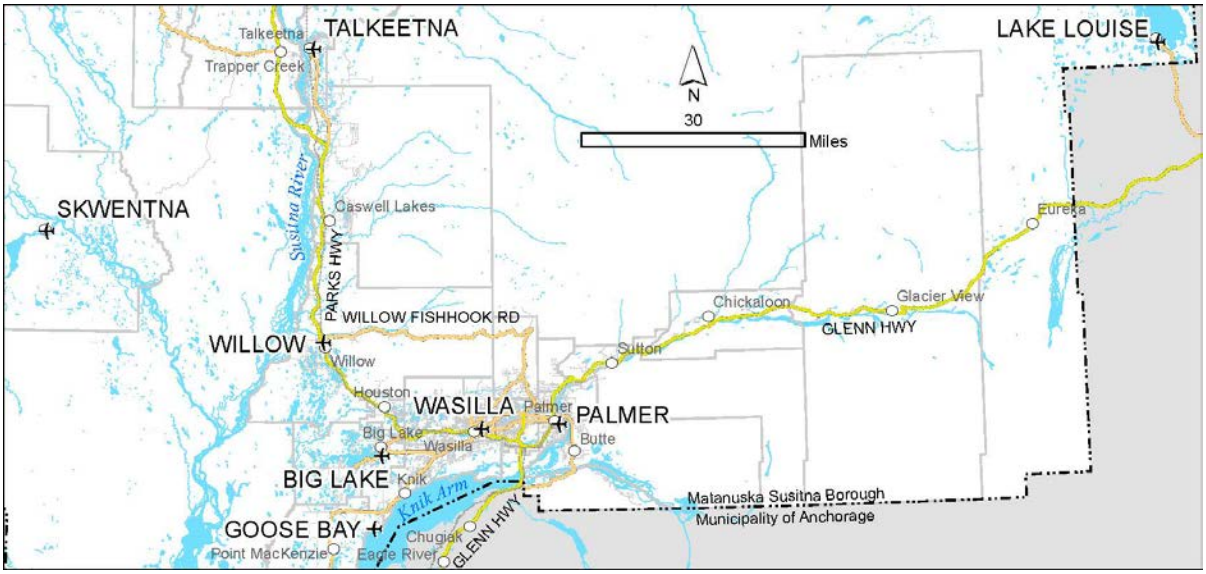
1.2 Acknowledgements

The authors of this report would like to acknowledge the contributions of individuals interviewed for the study, the State of Alaska's Department of Transportation and Public Facilities (ADOT&PF), the City of Palmer, the City of Wasilla, and Southeast Strategies.

2 On-Airport Aviation Activity in the MSB

This report focused on eight airports located in the MSB: Big Lake, Goose Bay, Lake Louise, Palmer, Skwentna, Talkeetna, Wasilla, and Willow. The Palmer and Wasilla Airports are municipal airports operated by the City of Palmer and the City of Wasilla, respectively. The remaining six airports are owned and operated by the State of Alaska through ADOT&PF. Each of these airports is unique in terms of size, scope of services, and usage, reflecting the MSB's diversity as both a rapidly growing suburban area and a region with significant rural character. Figure 1 is a map of the eight profiled MSB airports. Descriptions of each airport are provided below the figure.

Figure 1. Profiled Airports of the Matanuska Susitna Borough



Source: Alaska Map Company, 2015.

2.1 Profiles of MSB Airports

Big Lake Airport (BGQ)

The Big Lake Airport is a general aviation airport located in Big Lake, Alaska with a 2,450 foot gravel runway (Airnav 2015). Single engine aircraft predominate at Big Lake, with a small number of multi-engine and ultralight aircraft also present (see Table 1). While the majority of operations at the airport fall in the category of local general aviation, the airport plays an important role for transient general aircraft (see Table 2). Interviewees for this study indicated that many of the pilots who fly for local flightseeing operations park their aircraft at Big Lake for the summer. In this manner, Big Lake supports flightseeing operations at Talkeetna. Key informant interviews indicated that Big Lake is among the fastest growing airports in the region. Three mechanics are present at Big Lake, including one that specializes in rebuilding PA 20s; however, the airport has no fuel services. One air taxi helicopter service that retrieves wrecked aircraft is based at the airport. According to key informant interviews, this company brings in its own fuel and likely performs its own maintenance.

Goose Bay Airport (Z40)

Owned by the State of Alaska and located near Point MacKenzie, Goose Bay Airport is a general aviation airport with a 3,000 foot gravel runway (Airnav 2015). There are no aircraft based at the airport (see Table 1), and interviewees indicated that the airport's remoteness has left aircraft parked there vulnerable to vandalism. The airport's primary role is as a practice field for pilots seeking to sharpen their takeoff and landing skills; all operations at the airport belong to Transient General Aircraft (see Table 2).

Lake Louise (Z55)

Lake Louise Airport has a 3,000 foot gravel runway that recently was renovated and is in very good or excellent condition. One hundred percent of operations out of this state-owned airport are Transient General Aviation, as no aircraft call the airport home (see Table 1 and Table 2). The airport does not have any on-site fuel or other services, so pilots must make sure they are carrying sufficient fuel and equipment when flying into the facility.

Palmer Municipal Airport (PAQ)

Palmer Municipal Airport is the largest and busiest airport in the study. The airport has a 6,000 foot asphalt runway, 3,600 foot asphalt runway, and a 1,500 foot gravel runway, all of which are in good condition. As the largest airport in the area, Palmer is home to over 100 aircraft (see Table 1), two fuel sellers, two maintenance companies, a custom fabrication shop, and a parts shop. In addition, the airport is home to firefighting aircraft and operations of the Alaska Department of Natural Resources, RAVN Alaska's fleet maintenance operations, and New Horizons Telecom.

Skwentna Airport (SKW)

Inaccessible by road, the Skwentna Airport has a single 3,400 foot gravel runway that is in good condition. The airport is home to a limited number of aircraft owned by individuals living in Skwentna. However, the majority of the operations at the airport come from the Air Taxi and Transient General Aviation Communities (see Table 2), and no fuel or maintenance services are present at the facility. This airport is unique in the context of the sample of profiled airports because it supports a small community off Alaska's road system and thus functions more like airports of rural western Alaska than the on-road airports included in this study.

Talkeetna Airport (TKA)

Talkeetna Airport is one of the busiest airports in the borough. A 2011 Northern Economics study estimated the Talkeetna Airport's annual economic contribution to the state's economy at $5.6 million per year (Northern Economics 2011). The airport has a single 3,500 foot gravel runway and is the base for air operations that serve Denali National Park, with air taxis providing not only flightseeing operations but critical support during Denali's mountain climbing season. While a limited number of aircraft are based at the airport (see Table 1), the average number of operations exceeds 80 per day on an annualized basis, with significantly more activity in the summer (Airnav 2015). No self-serve fuel is available at Talkeetna, but Crowley refuels air taxi tanks and performs in-wing deliveries from a truck. In addition, an air taxi provider maintains a pump and sells low-lead fuel when open and staffed. Of the two maintenance shops located at Talkeetna, one also serves as an air taxi and flight school while the other is a relatively new machine shop that fabricates aircraft parts. The airport is home to four air taxi companies which alternately perform in-house maintenance to their aircraft and outsource maintenance to companies out of Lake Hood Airport and Merrill Field Airport.

Wasilla Airport (IYS)

Wasilla Airport is home to just under 100 largely single-engine aircraft. After Palmer Municipal Airport, Wasilla Airport is the second largest airport in the region in terms of the number of resident aircraft. In 2011, Northern Economics estimated that Wasilla Airport generated roughly in $3.7 million in statewide economic output each year. While the Wasilla Airport is home to many more aircraft than Talkeetna (see Table 1), the overall economic output from the airport is smaller because Wasilla is home to more general aviation aircraft and no air taxi companies. Air taxis operators generally fly more frequently and spend more than general aviation operators, some of whom fly infrequently. One aircraft repair shop and one fuel seller are located at Wasilla Airport, although no truck delivery of fuel is available and fuel is sold via a self-serve fixed pump with a credit card lock. A new helicopter charter company will soon begin operations at Wasilla with a newly constructed hangar and at least three helicopters.

Willow Airport (UUO)

The state-owned Willow Airport offers a 4,400 foot gravel runway that is in good condition. The airport is home to a small number of aircraft, as well as a mix of transient general aviation, local general aviation, and air taxi operations (see Table 1 and Table 2). While comparable numbers of aircraft are based at Willow and Talkeetna, the number of average daily operations at the Talkeetna airport is roughly double that of Willow. However, Willow Airport does function as the MSB's secondary flightseeing airport, with three air taxi operators located at the airport. None of these air taxi companies offer scheduled service, and each maintains its own fuel tanks and uses local mechanics. One fuel seller is based at Willow and sells fuel through a self-serve fixed pump with a credit card lock. In addition, the Alaska Department of Natural Resources kept a fuel truck on-site during summer 2015. Willow Airport also is home to three general aircraft maintenance companies and one flight school, and is the only one of the profiled airports that also includes a seaplane base. Moreover, Willow is the largest provider of gear change and float storage services in southcentral Alaska after Lake Hood.

Table 1. Estimates of Based Aircraft, 2014

		Aircraft Based at Airport					
Airports	**LID**	**Single**	**Multi**	**Ultralights**	**Helicopter**	**Gliders**	**Total**
Big Lake	BGQ	65	2	3	0	0	70
Goose Bay	Z40	0	0	0	0	0	0
Lake Louise	Z55	0	0	0	0	0	0
Palmer	PAQ	94	10	0	3	5	112
Skwentna	SKW	0	0	0	0	0	0
Talkeetna	TKA	25	1	0	0	0	26
Wasilla	IYS	73	6	0	2	0	81
Willow	UUO	18	0	0	1	0	19
Total, Eight Airports		**275**	**19**	**3**	**6**	**5**	**308**

Source: Airnav, 2015.

Table 2. Operation Types by Airport, 2014

Airports	LID	Est. Operations Per Day	Portion of Operations (%)			
			Transient General Aviation	Air Taxi	Local General Aviation	Military
Big Lake	BGQ	55	40	0	60	0
Goose Bay	Z40	15	100	0	0	0
Lake Louise	Z55	0.8	33	33	33	0
Palmer	PAQ	96	27	10	63	0
Skwentna	SKW	9.6	71	29	0	0
Talkeetna	TKA	82	53	32	13	2
Wasilla	IYS	136	49	2	49	1
Willow	UUO	43	38	31	30	2

Note: Military operations at Palmer are nonzero but constitute less than one percent of total operations.

Source: Airnav, 2015 for all airports other than Palmer.

2.2 On-Airport Businesses

The study team counted a total of 58 commercial and government leases across the eight MSB airports. This count excludes airport management operations, which are present in varying degrees at each of the profiled airports except Lake Louise. Table 3 shows the distribution of leases by airport and broad economic category, with each category including multiple economic sectors as defined by the North American Industry Classification System (NAICS) Code. Government leases include those held by all local, state, and federal government agencies, except for on-site entities responsible for airport management operations. Meanwhile, the category "Passenger Concession or Other Not Specified" includes the leases of all on-site businesses and organizations other than airlines, aircraft services companies, and government agencies.

By lease count alone, Table 3 suggests that the most economic activity is occurring at Willow, Palmer, and Talkeetna, while Big Lake and Wasilla exhibit moderate activity. Two leaseholders are present at Skwentna and none at either Goose Bay or Lake Louise. Aircraft services company leases comprise 34 percent (20 of 58) of all leases, while passenger concession or other, government, and airline leases comprise between 19 and 26 percent of total leases, respectively.

Table 3. Total Leases by Economic Category and Airport

Airport	Aircraft Services (e.g., fueling, maintenance)	Airline: Passenger and Cargo	Government	Passenger Concession or Other not Specified	Total, All Categories
Willow	7	3	3	2	15
Palmer	5	2	3	4	14
Talkeetna	2	6	4	2	14
Big Lake	4	1	0	2	7
Wasilla	2	2	0	2	6
Skwentna	0	1	1	0	2
Goose Bay	0	0	0	0	0
Lake Louise	0	0	0	0	0
Total, All Airports	**20**	**15**	**11**	**12**	**58**

Source: Northern Economics, Inc., 2015; Alaska Department of Community, Commerce, and Economic Development (DCCED), 2015.

2.3 Non-Profiled MSB Airports

While they comprise the vast majority of commercial aviation activity in the MSB, the eight profiled airports are only a small sample of all the borough's aviation facilities. As shown in Table 4, Federal Aviation Administration (FAA) data indicate that, in addition to the eight profiled airports, the MSB is home to 141 private-use and 21 public-use FAA-registered aviation facilities. Airports comprise 84 percent (119 of 141) of private facilities, while seaplane bases constitute 81 percent (17 of 21) of public facilities. Underscoring the importance of private facilities to general aviation activity in the borough, more single engine general aviation aircraft (515) are based at private facilities than pubic-use facilities (482).[1] Moreover, four times as many helicopters are based at private facilities (32) as public facilities.[2]

[1] This total includes 275 single engine aircraft based at profiled public-use airports and 207 aircraft based at non-profiled public-use airports.

[2] Two helicopters are based at non-profiled public-use facilities, while six helicopters are based at profiled public-use facilities.

Table 4. Number of Aircraft at Non-Profiled MSB Aviation Facilities, 2014

Facility Type	Facility Count	Number of Aircraft			
		Single Engine GA	Multi Engine GA	Helicopters	Ultralights
Private Use Facilities					
Airports	119	437	9	28	4
Heliports	6	1	0	4	0
Seaplane Bases	16	77	0	0	0
Total, Private Use Facilities	141	515	9	32	4
Public Use Facilities					
Airports	4	43	1	0	0
Seaplane Bases	17	164	0	2	0
Total, Public Use Facilities	21	207	1	2	0
Total, Private and Public Facilities	**162**	**722**	**10**	**34**	**4**

Source: FAA, 2015a.

In addition to the FAA-registered airports, the MSB's 2008 Regional Aviation System Plan (RASP) counted 53 unregistered private airports. The 2008 RASP further noted that private airports are found throughout the MSB but generally are concentrated in residential areas with road access.

2.4 Population Growth

The population of the MSB is growing more rapidly than that of any other region of Alaska. From 2000 to 2014, the populations of the communities that are home to the profiled airports grew, on average, at an annual rate of 2.3 percent, although the average growth rate slowed to 0.9 percent from 2010 to 2014. As shown in Table 5, the combined population of these communities grew by 37 percent over this period. Notably, each of the largest communities, including Wasilla, Palmer, and Big Lake, grew by at least 1.8 percent annually. However, population growth slowed dramatically in Palmer over 2010 through 2014 from the previous decade, and substantial growth in the Willow population from 2000 to 2010 was offset somewhat by a population decline from 2010 to 2014. Meanwhile, the populations of Lake Louise and Skwentna, with only around 100 residents each in 2000, fell dramatically from 2000 to 2014.

Table 5. Population Change in Profiled MSB Airport Communities, 2000 to 2014

Airport	Population Count			Average Annual Change (%)	
	2000	2010	2014	2000–2014	2010–2014
Big Lake	2,435	3,350	3,575	2.8	1.6
Lake Louise	88	46	47	-4.4	0.5
Palmer	4,705	5,937	6,053	1.8	0.5
Skwentna	111	37	33	-8.3	-2.8
Talkeetna	731	876	850	1.1	-0.8
Wasilla	5,504	7,831	8,275	3.0	1.4
Willow	1,657	2,102	2,043	1.5	-0.7
Total	**15,231**	**20,179**	**20,876**	**2.3**	**0.9**

Source: Alaska Department of Labor and Workforce Development, 2015.

The DCCED forecasts that the MSB's population will grow from just under 94,000 in 2012 to more than 166,000 in 2042, equivalent to an average annual growth rate of 1.65 percent. The DCCED expects that the borough will experience population growth at the even higher annual rate of 2.2 percent through 2027.

3 Analytical Methods

As noted in Section 1, the purpose of this study is to document the economic importance of MSB airports to the borough, as well as to Alaska. This analysis relies predominantly on the following two analytical methods to capture the economic importance of the MSB's airports to the region they serve:

1. Estimates of Direct, Indirect and Induced Employment and Expenditures; and
2. Passenger, Mail, and Cargo Volumes.

3.1 Estimates of Direct and Indirect Employment and Expenditures

In the absence of a direct survey of MSB airport leaseholders, this study relied on a variety of sources to estimate the economic contributions of profiled MSB airports. These sources, as well as the methodologies applied to their data, are described below. Importantly, this analysis sought to capture economic activity for airport-related enterprises alone, thus excluding economic activity of leaseholders with operations technically on airport land but unrelated to aviation or airport operations. Notable excluded activity is that associated with agricultural and golf course leases on Palmer Airport land. In addition, this study attempted to capture economic activity exclusively for the eight profiled airports. While these profiled airports are thought to comprise nearly all the on-airport economic activity in the borough, this analysis does not account for small-scale fuel purchases by private aircraft owners from gas stations or fueling facilities not located at the eight airports. It is beyond the scope of this study to estimate these fuel purchases.

3.1.1 IMPLAN Input-Output Analysis

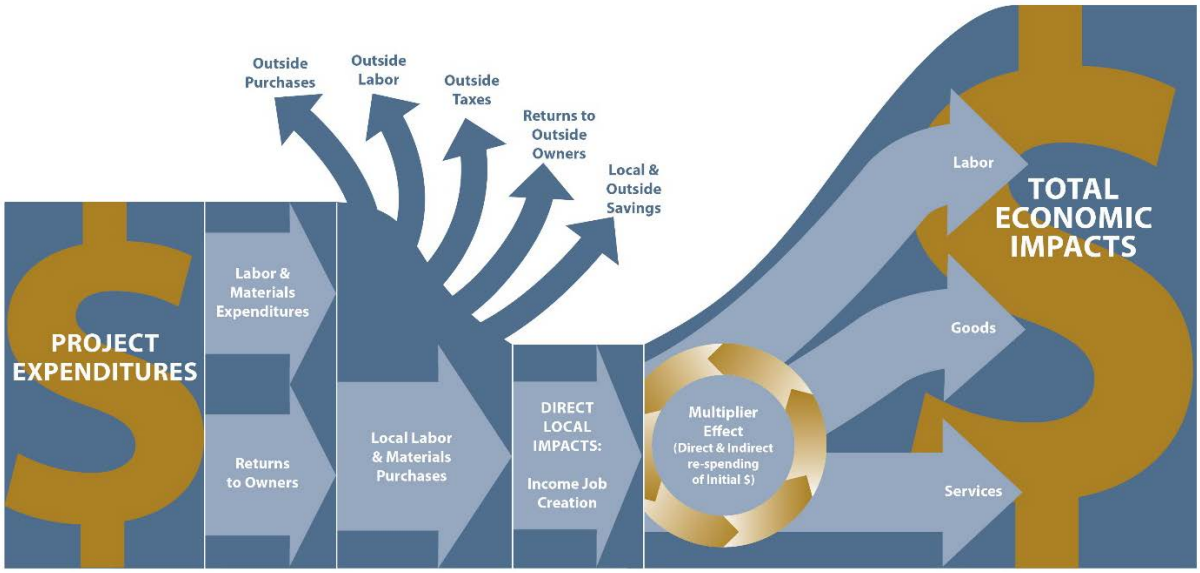
This analysis estimated direct spending and employment among commercial leaseholders and government agencies based on data obtained from, among other sources noted below, prior surveys of leaseholders and government agencies present at airports considered comparable in size (number of leases) or scope (primarily community airports) to the MSB airports profiled in this report. To estimate how indirect and induced spending and employment flow through the economy as a result of this direct spending and employment, this analysis used the IMPLAN™ software package. IMPLAN is most appropriate for estimation of direct (when actual direct employment and income data are not available), indirect, and induced spending and employment for airports with at least modest numbers of leaseholders, businesses, and government agencies, and thus is ideally suited to most of the profiled airports.

Northern Economics first utilized IMPLAN to estimate direct, indirect, and induced employment and spending among airport leaseholders for the March 2009 study entitled *The Economic Contribution of the Aviation Industry to Alaska's Economy,* conducted for ADOT&PF. The purpose of this component of the analysis is to estimate the overall effect of employment and expenditures by each on-site aviation industry represented at the profiled MSB airports. As with the 2009 study, the aviation industry is defined in the current study as all the businesses and organizations located on-site at these airports. These entities, which include the airlines, airport concessions, air freight companies, airline support services, and even government and civic organizations, are collectively referred to in this report as on-airport entities. Not included in the current study's definition of the aviation industry are the other aviation-related businesses that are not located at airports.

Businesses, organizations, and government agencies contribute more to an economy than just their direct employment and expenditures. The direct employment wages and expenditures fuel the economy as a portion of these monies is spent at other businesses in the community, around the state,

and outside the state. The recipients of these expenditures repeat the process until all of the original money has leaked from the local and state economies into outside economies and savings. This process is known as the multiplier effect (see Figure 2) and is measured as the number of times a dollar is re-spent in a community (or a larger economic region) before it leaks out. The cumulative sum of the original jobs and expenditures from the on-airport aviation industry and the indirect and induced jobs and expenditures created by the money flowing through the economy constitute the total economic impacts of the on-airport aviation industry.

Figure 2. Expenditures Moving through the Economy



Source: Northern Economics, 2010.

3.1.2 Alaska Aviation System Plan Economic Activity Study

The 2011 Northern Economics report, *Economic and Community Contributions of Selected Alaska Airports: 12 Case Studies*, documented the unique economic and social importance of a sample of a dozen Alaskan airports whose characteristics reflect the diversity of geography, size, and scope (international vs. regional hub vs. community airports) of the state's full population of airports. As part of the 2011 study, which was prepared for ADOT&PF as part of the ongoing Alaska Aviation System Plan, Northern Economics surveyed leaseholders and airport managers at each of the airports regarding their employment and expenditure levels.

The current study used average employment and expenditure data for leaseholders belonging to particular IMPLAN economic sectors to project economic activity for leaseholders at the profiled MSB airports. Data from six of the 2011 study's airports were excluded, as these airports were considered too large for inclusion in the current study. The remaining airports, whose average employment and expenditure data were used as proxies for the MSB airports, include those in Haines, Iliamna, Hooper Bay, Talkeetna, Wasilla, and Kodiak. Notably, this analysis excluded responses from Alaska Airlines' Kodiak operations; these data would have skewed estimates in the MSB, where Alaska Airlines does not operate. In addition, the study team gathered employment and expenditure data directly from select commercial and government leaseholders whose employment and output levels are significantly higher than averages from the sample reference airports.

3.1.3 ADOT&PF Leaseholder Database and DCCED Business License Database

ADOT&PF provided Northern Economics with a list of leaseholders for each of the eight profiled MSB airports. The study team cross-referenced this list with the DCCED business license database to determine which of the leaseholders are commercial operations and, for those that are, their NAICS codes. The resulting list of leaseholders comprised the final list of commercial and government operations whose economic impacts this analysis estimated; however, economic activity associated with airport management operations was estimated separately.

3.1.4 Interviews (ADOT&PF and Airport Managers)

Southeast Strategies interviewed managers of each of the profiled MSB airports regarding the extent of on-airport services and commercial operations, as well as trends in demand for hangar and tie-down space and both on-airport services and services utilized at other MSB airports by on-airport leaseholders. The analysis team vetted the list of commercial leaseholders using the managers' responses to questions about the volume and type of on-airport commercial operations. This analysis documents key takeaways from these interviews in Section 4.2.

3.1.5 Capital and Operating Expenditures

IMPLAN estimates of indirect and induced employment and spending are calculated based on direct capital and operating expenditures by leaseholders and government agencies, thus adding significant importance to the accuracy of their estimation. Section 3.1.2 explains how this analysis estimated such expenditures for leaseholders. Operating and maintenance (O&M) expenditures for all of the airports except Palmer and Wasilla reflect average FY 2011-2015 expenditures, escalated to 2015 dollars using the Alaska Consumer Price Index, while comprehensive annual financial reports for The City of Palmer and the City of Wasilla provided O&M expenditures for those airports. Capital expenditures reflect inflation-adjusted airport-specific 10-year averages of funding from the FAA's Airport Improvement Program (AIP). The AIP "provides grants to public agencies—and, in some cases, to private owners and entities—for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems" (FAA 2015b), and each of the eight airports considered in this analysis has received AIP funding over the past decade.

3.2 Bureau of Transportation Statistics Data

Another method for measuring economic activity at airports is to analyze the data collected by the Bureau of Transportation Statistics (BTS). Companies with revenues greater than $20 million are required to report their passenger, freight, and mail volumes to the BTS, while operators with revenues less than $20 million report their volumes with uncertain frequency. This study analyzed 2014 BTS reports of enplanements from and deplanements to profiled MSB airports, as well as volumes of freight and mail arriving at these airports and being transported to other Alaskan communities by way of them. This technique provides a raw measure of the volumes of people, freight, and mail travelling through the profiled MSB airports and offers another useful, if incomplete, perspective on economic activity related to air transport that is conducted through the airport.

4 Economic Contributions of MSB Airports

4.1 Direct and Indirect Economic Contributions of On-Airport Activity

MSB airports represent important sources of employment to borough residents and are responsible for substantial economic activity both within the borough and outside the MSB but within the state of Alaska. The study team estimates that in 2014 profiled MSB airports generated 356 direct full-time and part-time jobs, $13.3 million in direct wages, and a total of $17.3 million in direct, indirect, and induced output within Alaska.

4.1.1 Employment and Expenditures by Airport Leaseholders and Airport Management and Operations

This analysis estimates that MSB airport leaseholders and government entities provided approximately 428 direct jobs to the community in 2014 (see Table 6). Of this total, 60 percent (257 out of 428) were full-time, and 93 percent (400 out of 428) were leaseholder employees, rather than contract employees. These jobs paid an estimated $19.2 million in wages and benefits to job holders in 2014, with the vast majority of compensation paid to leaseholder employees. Of total MSB airport employment and compensation, municipal and federal employment accounted for an estimated 48 full-time employment positions and $3.7 million in compensation.

Table 6. Jobs and Wages Provided by Leaseholders and Non-Leaseholder Government Entities at Profiled MSB Airports, 2014

Category	Full-Time	Part-Time	Total	2014 Wages ($ Millions)
Leaseholder Employees	250	150	400	18.6
Contract Employees	7	21	28	0.6
All Employees	**257**	**171**	**428**	**19.2**

Note: Direct employment associated with capital expenditures of AIP funds was estimated in terms of full-time employees using IMPLAN multipliers. As a result, the number of full-time employees may be over-stated by a small margin and the number of part-time employees may be understated.

Columns and rows may not sum to totals due to rounding.

Source: Northern Economics, Inc., 2015.

As with all leaseholders, MSB airport leaseholders also contribute to the local, state, and national economies through capital and operating expenditures.[3] The study estimates that leaseholders and municipal and federal entities at profiled MSB airports contributed $13.7 million to the local, state, and national economies directly in 2014 (see Table 7). Of this total, approximately $11.8 million went into Alaska's economy, with nearly $9 million spent in the MSB economy. Combined direct capital and operating expenditures outside the state economy were just under $2 million.

[3] Capital expenditures represent long-term investments in equipment and infrastructure. In this case, operating expenditures are all other non-wage and benefit expenditures required for day-to-day operations.

Table 7. Geographic Distribution of Leaseholder Direct Capital & Operating Expenditures at Profiled MSB Airports, 2014

	In-MSB	Other Alaska	Total Alaska	Outside Alaska	Total
Category			**($Millions)**		
Capital Expenditures	2.9	1.3	4.2	0.1	4.3
Operating Expenditures	5.9	1.8	7.6	1.7	9.4
Total	**8.8**	**3.0**	**11.8**	**1.9**	**13.7**

Columns may not sum to totals due to rounding.

Source: Northern Economics, Inc., 2015.

4.1.2 Estimates of Total On-Airport Related Employment and Expenditures

The direct employment and expenditures described above are fuel for the local, state, and national economies. The wages and expenditures cycle through the economy as workers spend their wages and businesses and government entities buy goods and services from off-airport businesses. The current study estimates that there are roughly 380 direct, indirect, and induced in-state jobs related to operations at the profiled MSB airports. Further, these operations generated in-state labor income of $21.2 million, contributing to total statewide economic output of over $17 million in 2014 (see Table 8).

The current study also estimates the portion of direct, indirect, and induced jobs, wages, and output generated by the profiled MSB airports within the borough. Notably, the vast majority of jobs are estimated to be held by MSB residents. Likewise, this analysis projects that the preponderance of income associated with these jobs is paid to MSB residents. However, of the roughly $17.5 million in direct, indirect, and induced economic output generated by the eight airports in 2014, this analysis estimated a more balanced split of in-borough and ex-borough expenditures of $12.2 million and $5.3 million, respectively.

Table 8. Profiled MSB Airports' Direct, Indirect, and Induced In-State Economic Effects, 2014

	Number of Jobs		Labor Income		Output	
			($Millions)			
Category	**In-MSB**	**Other Alaska**	**In-MSB**	**Other Alaska**	**In-MSB**	**Other Alaska**
Airport Operations	10	0	0.6	0.3	2.7	2.3
Leaseholders	360	10	19.9	0.5	9.6	3.0
Subtotals	370	10	20.4	0.8	12.2	5.3
Total In-State Effect	**380**		**21.2**		**17.5**	

Note: This table presents jobs in terms of full-time positions, while Table 6 disaggregates employment totals into full-time and part-time positions. Indirect and induced employment figures have been rounded to the nearest ten jobs to reflect statistical uncertainty of modeling estimates. Job subtotals and totals also have been rounded to the nearest ten jobs.

Source: Northern Economics, Inc. and IMPLAN, 2015.

4.2 Trends in MSB Aviation

As noted in Section 3.1.4, the analysis team conducted extensive interviews with MSB airport managers to gain an anecdotal and more complete understanding of the level of economic activity at each MSB public-use airport. Among the key takeaways from those interviews are the following:

- Substantial diversity in the size and scope of services offered across profiled public-use airports primarily reflects the variable characteristics of the communities and regions they serve. Individual airport profiles presented in Section 2 attest to this diversity.
- Demand for aviation opportunities and associated support services generally is increasing in the borough and appears correlated with continued population growth. However, the growth in demand is inconsistent across the eight airports and is most pronounced at Talkeetna, Willow, Big Lake, Palmer, and Wasilla.
- Aviation in the MSB is generally expanding as a byproduct of population growth, but some managers of profiled airports lack adequate time to focus on commercial growth at their respective airports. This is not the case, however, across the entire sample of profiled airports: The City of Palmer employs a full-time manager at the Municipal Airport, and The City of Wasilla's Public Works Director oversees Wasilla Airport's operations.
- The majority of aircraft owners who keep their planes at profiled MSB airports utilize fuel and aircraft maintenance services within the borough. Businesses located at MSB airports benefit from a lease rate structure that is advantageous relative to that in the Municipality of Anchorage. Thus, fuel and maintenance services may be obtained less expensively within the borough than at Merrill Field Airport in Anchorage.
- Many pilots who reside and keep their planes in rural locations outside the MSB come to airports within the borough for fuel and maintenance services.

4.3 BTS Data

Northern Economics obtained data regarding passenger, freight, and mail volumes originating from and arriving at profiled MSB airports from a variety of aviation datasets available from the BTS. The study uses the "Air Carriers: T100 Domestic Markets - All Carriers" dataset which shows only passengers, mail, and cargo that enplaned or deplaned at a given airport. The BTS data have proved a valuable resource in past economic activity analyses because they are the most powerful tool for showing movements between airports. However, only larger certificated carriers report into the system, while general aviation flights and small air taxi operators generally do not.

The BTS data reveal that only three of the profiled airports—Skwentna, Palmer, and Wasilla—had any significant reported movements of passengers, mail, and freight in 2014 (see Table 9).[4] As previously noted, Skwentna is not on the current road system and is only reachable by air or off-road travel in the winter. In 2014, the airport received 65 passengers on certificated air carrier and returned 51 passengers to the road system. Similarly, the community received nearly 26,000 pounds of freight and shipped back 4,000 pounds, while receiving close to 11,000 pounds of mail. All of this movement took place between Skwentna and Merrill Field in Anchorage and not between Skwentna and other MSB airports. Activity between Skwentna and other MSB airports that occurred on a general aviation level was not recorded in the BTS data. RAVN Alaska's operations in Palmer generated a smaller number of passengers and some freight moving between Palmer and Bethel, Aniak, Kotzebue, McGrath, St. Mary's,

[4] Talkneeta reported one flight of three people to and from Fairbanks in 2014.

and Nome. In all likelihood, RAVN Alaska opportunistically used the repositioning of aircraft returning to service in western Alaska from their maintenance operations in Palmer and loaded these aircraft with passengers and freight. Finally, BTS data show levels of passenger arrivals to and departures from Wasilla Airport in 2014.

Table 9. BTS Passenger, Mail, and Freight Data, 2014

Airport	As Origin			As Destination		
	Number of Passengers	Freight (lb)	Mail (lb)	Number of Passengers	Freight (lb)	Mail (lb)
Big Lake	–	–	–	–	–	–
Lake Louise	–	–	–	–	–	–
Skwentna	**51**	**4,108**	**0**	**65**	**25,633**	**10,950**
Willow	–	–	–	–	–	–
Palmer	**0**	**1,700**	**0**	**2**	**4,277**	**0**
Talkeetna	–	–	–	–	–	–
Goose Bay	–	–	–	–	–	–
Wasilla	**35**	–	–	**28**	–	–

Source: Bureau of Transportation Statistics, 2015.

The absence of BTS data in this case is an important indicator of the nature of aviation activity most common to the profiled MSB airports. While MSB airports provide significant support to general aviation enthusiasts and air taxi operators, the majority of these airports are not integrated into the broader movement of people, freight, and mail in the same way as Merrill Field in Anchorage or regional and community airports in more remote communities. With the exception of Palmer, the profiled airports are operating in a sub-system that is separate from the larger system of community-based airports which provide services that are essential to the continued operation of the communities that they serve.

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APPENDIX C

Capital Cost Estimates

Item No.	Seven Mile Lake Airport Master Plan	Notes	Project Total
INITIAL 1	Construct Vehicle Road	(Fig. INITIAL 1)	$ 3,000,000
INITIAL 2	Construct Gravel Taxiway to be paved	(Fig. INITIAL 2)	$ 300,000
INITIAL 3	Construct Gravel Taxiway Parallel To Road	(Fig. INITIAL 3)	$ 400,000
INITIAL 4	Dredge Taxi Channel	(Fig. INITIAL 4)	$ 6,300,000
INITIAL 5	Construct Float Plane Ramp	(Fig. INITIAL 5)	$ 1,000,000
INITIAL 6	Construct Tie Downs	(Fig. INITIAL 6)	$ 2,500,000
INITIAL 7	Construct Gravel Apron/Taxiway	(Fig. INITIAL 7)	$ 2,800,000
INITIAL 8	Construct Slips	(Fig. INITIAL 8)	$ 1,600,000
INITIAL 9	Future Airport and Terminal Facilities	(Fig. INITIAL 9)	$ 26,000
INITIAL 10	Environmental Compliance	(Fig. INITIAL 10)	$ 500,000
INITIAL 11	Construct Gravel Access Road into Site	(Fig. INITIAL 11)	$ 5,500,000
INITIAL 12	Bringing Utilities into Site	(Fig. INITIAL 12)	$ 3,200,000
INITIAL 13	On Site Utilities	(Fig. INITIAL 13)	$ 1,000,000
		Total	**$ 27,426,000**

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT VEHICLE ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 2,534,765	$ 2,534,765
				Project Total:	$ 2,534,765
				Project Rounded Total:	**$ 2,600,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	5,330	25	133,250
Roadway Shoulder	5,330	4	21,320

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation (P-152a)	Cubic Yard	25,200	$ 15	$ 378,000
4" Crushed Aggregate Surface Course (P-401a)	Ton	3,400	$ 40	$ 136,000
6" Crushed Aggregate Base Course (P-209b)	Ton	6,700	$ 45	$ 301,500
24" Subbase Course (P-154b)	Ton	35,700	$ 20	$ 714,000
Geotextile, Separation (P-681a)	Square Yard	20,700	$ 3	$ 62,100
Clearing & Grubbing (P-151c)	Acre	4	$ 7,999	$ 28,796
			Subtotal:	$ 1,620,396
			Soft Cost @35%:	$ 567,139
			Design Engineering (DE) at 15%:	$ 328,130
			Construction Engineering (CE) at 15%:	$ 328,130
			ICAP at 4.87%:	$ 138,493
			Total:	$ 2,982,289
			Rounded Total:	**$ 3,000,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TAXIWAY TO BE PAVED

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 154,998	$ 154,998
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 56,333	$ 56,333
---	Electrical Items	LUMP SUM	1600000	$ 56,333	$ 56,333
				Project Total:	$ 267,664
				Project Rounded Total:	**$ 300,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	245	35	8,575
Taxilane Safety Area	245	45	11,025
Object Free Area	245	178	43,610

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	1,089	$ 15	$ 16,333
2"Crushed Aggregate Surface Course (P-208c)	Ton	103	$ 40	$ 4,116.00
6" Crushed Aggregate Base Course (P-209b)	Ton	309	$ 45	$ 13,892
24" Subbase Course (P-154b)	Ton	1,235	$ 20	$ 24,696
32" Subbase Course (P-154b) @ TSA	Ton	470	$ 20	$ 9,408.00
Geotextile Separation (P-681a)	Cubic Yards	2,178	$ 3	$ 6,533.33
Clearing & Grubbing (P-152c)	Acres	1	$ 7,999	$ 10,033
			Subtotal:	$ 85,011
			Soft Cost @35%:	$ 29,754
			Design Engineering (DE) at 15%:	$ 17,215
			Construction Engineering (CE) at 15%:	$ 17,215
			ICAP at 3.89%:	$ 5,804
			Total:	$ 154,998
			Rounded Total:	**$ 155,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-209b) = 1.944 ton/cy
   - Clearing & Grubbing =43560 Square Feet/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

ASSUMPTIONS (CONT'D)

5. 24" Subbase Due To Surrounding Wetlands

6. Paved Taxilane Constructed On Top of Existing Gravel Taxiway Where Possible

7. Underground Cable (L-108a) Is Included In Roadway And Taxilane Lighting Costs

8. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL TAXIWAY PARALLEL TO ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 177,631	$ 177,631
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 63,331	$ 63,331
---	Electrical Items	LUMP SUM	1600000	$ 63,331	$ 63,331
				Project Total:	$ 304,293
				Project Rounded Total:	**$ 400,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	245	25	6,125
Taxilane Safety Area	245	49	12,005
Object Free Area	245	89	21,805

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	1,900	$ 15	$ 28,500
2"Crushed Aggregate Surface Course (P-208c)	Ton	100	$ 40	$ 4,000
6" Crushed Aggregate Base Course (P-209b)	Ton	300	$ 45	$ 13,500
24" Subbase Course (P-154b)	Ton	1,058	$ 20	$ 21,168
32" Subbase Course (P-154b) @ TSA	Ton	1,355	$ 20	$ 27,095
Geotextile Separation (P-681a)	Cubic Yards	1,700	$ 3	$ 5,100
Clearing & Grubbing (P-151c)	Acres	1	$ 7,999	$ 4,799
			Subtotal:	$ 104,162
			Soft Cost @35%:	$ 36,457
			Design Engineering (DE) at 15%:	$ 21,093
			Construction Engineering (CE) at 15%:	$ 21,093
			ICAP at 4.87%:	$ 8,903
			Total:	$ 191,708
			Rounded Total:	**$ 200,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Taxilane Lighting/Electrical Items Cost = $145.45 /ft.
   - Clearing & Grubbing =43560 ft^2/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. 3 Phase Electric Included in Taxilane Lighting Lump Sum.

7. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: DREDGE TAXI CHANNEL

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	DREDGING	LUMP SUM	ALL REQUIRED	$ 6,236,428	$ 6,236,428
				Project Total:	$ 6,236,428
				Project Rounded Total:	**$ 6,300,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Taxi Channel	923,767

2. Taxi Channel Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
3' Unclassified Excavation (P-152a)	Cubic Yard	225,900	$ 15.00	$ 3,388,500

Subtotal:	$	3,388,500
Soft Cost @35%:	$	1,185,975
Design Engineering (DE) at 15%:	$	686,171
Construction Engineering (CE) at 15%:	$	686,171
ICAP at 4.87%:	$	289,610
Total:	$	6,236,428
Rounded Total:	**$**	**6,300,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Object Free Areas Included In CIVIL 3D Drawing

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT PLANE RAMPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Ramp Construction	LUMP SUM	ALL REQUIRED	$ 921,707	$ 921,707
				Project Total:	$ 921,707
				Project Rounded Total:	**$ 1,000,000**

ASSUMPTIONS

1. Pay Description	Pay Unit	Quantity	Unit Price	Amount
Ramp	Each	1	$ 500,000	$ 500,000
Clearing & Grubbing (P-151c)	Acres	0.10	$ 8,000	$ 800
			Subtotal:	$ 500,800
			Soft Cost @35%:	$ 175,280
			Design Engineering (DE) at 15%:	$ 101,412
			Construction Engineering (CE) at 15%:	$ 101,412
			ICAP at 4.87%:	$ 42,803
			Total:	$ 921,707
			Rounded Total:	**$ 1,000,000**

2. Estimating Factors:
   Area of Ramp = 4000 (SF)
   Clearing & Grubbing = 43560 ft^2/Acres

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TIE DOWNS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Tie Down Construction	LUMP SUM	ALL REQUIRED	$ 2,413,590	$ 2,413,590
				Project Total:	$ 2,413,590
				Project Rounded Total:	**$ 2,500,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Tie Down	135,918

2. Tie Down Structural Section:	Pay Unit	Quantity	Unit Price	Amount
34" Unclassified Excavation (P-152a)	Cubic Yard	19,200	$ 15	$ 288,000.00
2" Crushed Aggregate Surface Course	Ton	1,800	$ 40	$ 72,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	5,900	$ 45	$ 265,500.00
24" Subbase Course (P-154b)	Ton	23,400	$ 20	$ 468,000.00
Geotextile Separation (P-681a)	Cubic Yards	18,100	$ 3	$ 54,300.00
Clearing & Grubbing (P-151c)	Acres	3	$ 7,999	$ 25,597
			Subtotal:	$ 1,173,397
			Soft Cost @35%:	$ 410,689
			Design Engineering (DE) at 15%:	$ 237,613
			Construction Engineering (CE) at 15%:	$ 237,613
			ICAP at 4.87%:	$ 100,288
			Total:	$ 2,159,600
			Rounded Total:	**$ 2,200,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing =43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON/TAXIWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 2,769,721	$ 2,769,721
				Project Total:	$ 2,769,721
				Project Rounded Total:	**$ 2,800,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	135,667

2. Apron Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	21,500	$ 15	$ 322,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	2,000	$ 40	$ 80,000
6" Crushed Aggregate Base Course (P-209b)	Ton	6,900	$ 45	$ 310,500
24" Subbase Course (P-154b)	Ton	35,600	$ 20	$ 712,000
Geotextile Separation (P-681a)	Cubic Yards	18,100	$ 3	$ 54,300
Clearing & Grubbing (P-151c)	Acres	3	$ 7,999	$ 25,597
			Subtotal:	$ 1,504,897
			Soft Cost @35%:	$ 526,714
			Design Engineering (DE) at 15%:	$ 304,742
			Construction Engineering (CE) at 15%:	$ 304,742
			ICAP at 4.87%:	$ 128,621
			Total:	$ 2,769,715
			Rounded Total:	**$ 2,800,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT SLIPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Slip Construction	LUMP SUM	ALL REQUIRED	$ 1,453,184	$ 1,453,184
---	Lighting & Electrical Service	LUMP SUM	ALL REQUIRED	$ 87,500	$ 87,500
				Project Total:	$ 1,540,684
				Project Rounded Total:	**$ 1,600,000**

ASSUMPTIONS, BASIC BID

1. Dimensions:

	Area (SF)	Volume (CY)
Slip Excavation Area	380,000	14,074

2. Shoreline Slips	Pay Unit	Quantity	Unit Price	Amount
Slips	Each	14	$ 35,500	$ 497,000
Unclassified Excavation (P-152a)	Cubic Yard	15,500	$ 15	$ 232,500
Clearing & Grubbing (P-151c)	Acres	1	$ 8,000	$ 8,000
			Total:	$ 737,500
			Soft Cost @35%:	$ 258,125
			Design Engineering (DE) at 15%:	$ 149,344
			Construction Engineering (CE) at 15%:	$ 149,344
			ICAP at 4.87%:	$ 63,033
			Total:	$ 1,357,346
			Rounded Total:	**$ 1,400,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Estimating Factors:
   Clearing & Grubbing = 43560 ft^2/Acres
   Excavation Volume/Slip = 1005.29 Cubic Yards
   Area/Slip = 3000 (SF) Per Slip

5. Leveling Costs Not Calculated At This Stage

8. Contingency includes 10% for possible overrun

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CLEAR FUTURE TERMINAL/AIRPORT FACILIITES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Clearing Cost	LUMP SUM	ALL REQUIRED	$ 25,030	$ 25,030
				Project Total:	$ 25,030
				Project Rounded Total:	**$ 26,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Future Terminal and Airport Facilities	0

2. Clearing Costs:

	Pay Unit	Quantity	Unit Price	Amount
Clearing & Grubbing (P-151c)	Acres	2	$ 8,000	$ 13,600
			Subtotal:	$ 13,600
			Soft Cost @35%:	$ 4,760
			Design Engineering (DE) at 15%:	$ 2,754
			Construction Engineering (CE) at 15%:	$ 2,754
			ICAP at 4.87%:	$ 1,162
			Total:	$ 25,030
			Rounded Total:	**$ 26,000**

3. Estimating Factor:
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ENVIRONMENTAL COMPLIANCE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Environmental Compliance	LUMP SUM	ALL REQUIRED	$ 500,000	$ 500,000
				Project Total:	$ 500,000
				Project Rounded Total:	**$ 500,000**

ASSUMPTIONS

1. FAA involvement triggers National Environmental Policy Act (NEPA)
2. Environmental Tasks will include:
   - a. Environmental Document Preparation
     - i. Environmental Assessment will be the class of Action
   - b. Coordination and Consultation with Key Agencies
     - i. Agency Scoping
     - ii. Section 106 Consultation
   - c. Supporting Studies
     - i. Bald Eagle Survey prior to tree clearing
     - ii. Wetland Delineation
     - iii. Historic Property Evaluations / Historical, Archaeological, and Cultural Resources Investigatic
     - iv. Fish Survey
     - v. Section 4(f)
   - d. Permitting
     - i. Section 404
     - ii. Title 16
     - iii. Temporary Water Use Permits

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL ACCESS ROAD INTO SITE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 4,606,362	$ 4,606,362
				Project Total:	$ 4,606,362
				Project Rounded Total:	**$ 4,700,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	5,330	25	133,250
Roadway Shoulder	5,330	4	21,320

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation (P-152a)	Cubic Yard	45,800	$ 15	$ 687,000
4" Crushed Aggregate Surface Course (P-401a)	Ton	6,100	$ 40	$ 244,000
6" Crushed Aggregate Base Course (P-209b)	Ton	12,200	$ 45	$ 549,000
24" Subbase Course (P-154b)	Ton	64,800	$ 20	$ 1,296,000
Geotextile, Separation (P-681a)	Square Yard	37,500	$ 3	$ 112,500
Clearing & Grubbing (P-151c)	Acre	7	$ 7,999	$ 51,994
			Subtotal:	$ 2,940,494
			Soft Cost @35%:	$ 1,029,173
			Design Engineering (DE) at 15%:	$ 595,450
			Construction Engineering (CE) at 15%:	$ 595,450
			ICAP at 4.87%:	$ 251,320
			Total:	$ 5,411,886
			Rounded Total:	**$ 5,500,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

7. Road Connects to Utilities

8. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: BRINGING UTILITIES INTO SITE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	UTILITIES CONSTRUCTION	LUMP SUM	ALL REQUIRED	$ 3,119,850	$ 3,119,850
				Project Total:	$ 3,119,850
				Project Rounded Total:	**$ 3,120,000**

ASSUMPTIONS

1. Utilities Costs:	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Each	12,100	$ 60	$ 726,000
Gas	Linear Foot	31,700	$ 50	$ 1,585,000
			Total:	$ 2,311,000
			Rounded Total:	**$ 2,311,000**

2. Length of road from Point Mackenzie to site 1.9 miles

3. Length of road from Burma to site, following Point Mackenzie 5 miles

4. Price is taken from Utility spread sheet from Chris pletnikoff. Assumed length is from Point Mackenzie road into the site

5. Price Taken from email to Chris Cole on 6/24/16. Would have to start at Burma and follow the access road into the site

6. 3 Phase Electric Direct Buried

7. Soft cost includes typical contractor furnished items
(G-items in DOT&PF airport project specifications):
10% Mobilization / Demobilization
25% Various Contractor Furnished Services

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ON SITE UTILITIES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 950,400	$ 950,400
				Project Total:	$ 950,400
				Project Rounded Total:	**$ 1,000,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	6,400	$ 60	$ 384,000
Gas	Linear Foot	6,400	$ 50	$ 320,000
			Total:	$ 704,000
			Rounded Total:	**$ 800,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Length of road from Point Mackenzie to site 1.9 miles

4. Length of Road form Burma to site, following Point Mackenzie 5 miles

5. Price is

6. Price taken

7. 3 Phase Electric Direct Buried

Item No.	Seven Mile Lake Airport Master Plan	Notes	Project Total
NEAR 1	Construct Vehicle Road	(Fig. NEAR 1)	$ 3,600,000
NEAR 2	Construct Gravel Taxiway to be paved	(Fig. NEAR 2)	$ 11,200,000
NEAR 3	Construct Gravel Taxiway Parallel To Road	(Fig. NEAR 3)	$ 6,600,000
NEAR 4	Construct Gravel Runway	(Fig. NEAR 4)	$ 12,700,000
NEAR 5	Dredge Taxi Channel	(Fig. NEAR 5)	$ 9,700,000
NEAR 6	Construct Float Plane Ramp	(Fig. NEAR 6)	$ 1,000,000
NEAR 7	Construct Tie Downs	(Fig. NEAR 7)	$ 6,100,000
NEAR 8	Construct Gravel Apron With Hangars	(Fig. NEAR 8)	$ 3,300,000
NEAR 9	Construct Gravel Apron/Taxiway	(Fig. NEAR 9)	$ 4,100,000
NEAR 10	Future Terminal and Airport Facilities	(Fig. NEAR 10)	$ 200,000
NEAR 11	Construct Floatplane Slips	(Fig. NEAR 11)	$ 3,700,000
NEAR 12	Environmental Compliance	(Fig. NEAR 12)	$ 700,000
NEAR 13	Construct Gravel Access Road into Site	(Fig. NEAR 13)	$ 5,500,000
NEAR 14	Bringing Utilities into Site	(Fig. NEAR 14)	$ 3,200,000
NEAR 15	On Site Utilities	(Fig. NEAR 15)	$ 1,200,000
		Total	**$ 58,300,000**

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT VEHICHLE ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 3,534,436	$ 3,534,436
				Project Total:	$ 3,534,436
				Project Rounded Total:	**$ 3,600,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	6,314	25	157,843
Roadway Shoulder	6,314	4	25,255

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	29,900	$ 15	$ 448,500.00
4" Crushed Aggregate Surface Course (P-401a)	Ton	4,000	$ 40	$ 160,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	8,000	$ 45	$ 360,000.00
24" Subbase Course (P-154b)	Ton	42,200	$ 20	$ 844,000.00
Geotextile, Separation (P-681a)	Square Yard	24,500	$ 3	$ 73,500.00
Clearing & Grubbing (P-151c)	Acre	4	$ 7,999	$ 34,396
			Subtotal:	$ 1,920,396
			Soft Cost @35%:	$ 672,138
			Design Engineering (DE) at 15%:	$ 388,880
			Construction Engineering (CE) at 15%:	$ 388,880
			ICAP at 4.87%:	$ 164,133
			Total:	$ 3,534,428
			Rounded Total:	**$ 3,600,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

7. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TAXILANE TO BE PAVED

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 6,170,491	$ 6,170,491
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 2,497,685	$ 2,497,685
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 2,497,685	$ 2,497,685
				Project Total:	$ 11,165,861
				Project Rounded Total:	**$ 11,200,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	9,753	35	341,372
Taxilane Safety Area	9,753	45	438,907
Object Free Area	9,753	178	1,736,123

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	43,349	$ 15	$ 650,233
2" Crushed Aggregate Surface Course (P-208c)	Ton	4,096	$ 40	$ 163,859
6" Crushed Aggregate Base Course (P-209b)	Ton	12,289	$ 45	$ 553,023
24" Subbase Course (P-154b)	Ton	49,158	$ 20	$ 983,153
32" Subbase Course (P-154b) @ TSA	Ton	18,727	$ 20	$ 374,534
Geotextile Separation (P-681a)	Cubic Yards	86,698	$ 3	$ 260,093
Clearing & Grubbing (P-151c)	Acres	50	$ 7,999	$ 399,405
			Subtotal:	$ 3,384,300
			Soft Cost @35%:	$ 1,184,505
			Design Engineering (DE) at 15%:	$ 685,321
			Construction Engineering (CE) at 15%:	$ 685,321
			ICAP at 4.87%:	$ 231,044
			Total:	$ 6,170,491
			Rounded Total:	**$ 6,171,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-209b) = 1.944 ton/cy
   Clearing & Grubbing = 43560 Square Feet/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):

10% Mobilization / Demobilization
25% Various Contractor Furnished Services

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL TAXILANE PARALELL TO ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 4,732,241	$ 4,732,241
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 1,687,189	$ 1,687,189
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 1,687,189	$ 1,687,189
				Project Total:	$ 8,106,619
				Project Rounded Total:	**$ 8,200,000**

ASSUMPTIONS

1. Dimensions:	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	4,705	25	117,628
Taxilane Safety Area	4,705	49	230,551
Object Free Area	4,705	89	418,757

2. Taxilane Structural Section:	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	36,500	$ 15	$ 547,500
2"Crushed Aggregate Surface Course (P-208c)	Ton	1,700	$ 40	$ 68,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	5,100	$ 45	$ 229,500.00
24" Subbase Course (P-154b)	Ton	20,326	$ 20	$ 406,523.33
32" Subbase Course (P-154b) @ TSA	Ton	26,017	$ 20	$ 520,349.86
Geotextile Separation (P-681a)	Cubic Yards	30,800	$ 3	$ 92,400.00
Clearing & Grubbing (P-151c)	Acres	10	$ 7,999	$ 77,590.30
			Subtotal:	$ 1,941,863
			Soft Cost @35%:	$ 679,652
			Design Engineering (DE) at 15%:	$ 393,227
			Construction Engineering (CE) at 15%:	$ 393,227
			ICAP at 4.87%:	$ 165,968
			Total:	$ 3,573,939
			Rounded Total:	**$ 3,600,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

ASSUMPTIONS (CONT'D)

5. 24" Subbase Due To Surrounding Wetlands

6. 3 Phase Electric Is Included In Taxilane Lighting And Electrical Items Lump Sum.

7. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL RUNWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Runway Construction	LUMP SUM	ALL REQUIRED	$ 9,008,037	$ 9,008,037
---	Runway Lighting	LUMP SUM	ALL REQUIRED	$ 1,338,683	$ 1,338,683
---	Dust Palliative	LUMP SUM	ALL REQUIRED	$ 276,070	$ 276,070
				Project Total:	$ 10,622,790
				Project Rounded Total:	**$ 10,700,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Runway	3,200	60	192,000
Runway Safety Area	3,680	120	185,600
Runway Shoulder	3,200	20	64,000
Object Free Area	3,680	250	478,400

2. Runway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
42" Unclassified Excavation (P-152a)	Cubic Yards	94,100	$ 15.00	$ 1,411,500
12" Crushed Aggregate Surface Course (P-208b)	Ton	22,900	$ 40.00	$ 916,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	8,554	$ 45	$ 384,912
6" Crushed Aggregate Base Course (P-209b) @ Shoulder	Ton	2,851	$ 45	$ 128,304
24" Subbase Course (P-154b)	Ton	34,214	$ 20	$ 684,288
24" Subbase Course (P-154b) @ Shoulder	Ton	11,405	$ 20	$ 228,096
42" Subbase Course (P-154b) @ RSA	Ton	57,335	$ 20	$ 1,146,701
Geotextile Separation (P-681a)	Square Yards	60,500	$ 3	$ 181,500.00
Clearing & Grubbing (P-151c)	Acres	22	$ 7,999	$ 173,578.30
			Subtotal:	$ 5,254,879
			Soft Cost @35%:	$ 1,839,208
			Design Engineering (DE) at 15%:	$ 1,064,113
			Construction Engineering (CE) at 15%:	$ 1,064,113
			ICAP at 4.87%:	$ 449,127
			Total:	$ 9,671,439
			Rounded Total:	**$ 9,700,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Runway Lighting Cost = $227.3/foot
   - Clearing & Grubbing = 43560 ft^2/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

7. 3 Phase Electric Included In Runway Lighting Lump Sum

8. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: DREDGE TAXI CHANNEL

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	DREDGING	LUMP SUM	ALL REQUIRED	$ 9,656,938	$ 9,656,938
				Project Total:	$ 9,656,938
				Project Rounded Total:	**$ 9,700,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Taxi Channel	1,430,910

2. Taxi Channel Structural Section:	Pay Unit	Quantity	Unit Price	Amount
3' Unclassified Excavation (P-152a)	Cubic Yard	349,800	$ 15.00	$ 5,247,000

Subtotal:	$ 5,247,000
Soft Cost @35%:	$ 1,836,450
Design Engineering (DE) at 15%:	$ 1,062,518
Construction Engineering (CE) at 15%:	$ 1,062,518
ICAP at 4.87%:	$ 448,453
Total:	$ 9,656,938
Rounded Total:	**$ 9,700,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Object Free Areas Included In CIVIL 3D Drawing

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT PLANE RAMPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Ramp Construction	LUMP SUM	ALL REQUIRED	$ 921,707	$ 921,707
				Project Total:	$ 921,707
				Project Rounded Total:	**$ 1,000,000**

ASSUMPTIONS

1. Pay Description	Pay Unit	Quantity	Unit Price	Amount
Ramp	Each	2	$ 500,000	$ 1,000,000
Clearing & Grubbing (P-151c)	Acres	0.1	$ 8,000	$ 800
			Subtotal:	$ 1,000,800
			Soft Cost @35%:	$ 350,280
			Design Engineering (DE) at 15%:	$ 202,662
			Construction Engineering (CE) at 15%:	$ 202,662
			ICAP at 4.87%:	$ 85,537
			Total:	$ 1,841,941
			Rounded Total:	**$ 1,900,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Estimating Factor
   Area of Ramp = 4000 (SF)
   Clearing & Grubbing = 43560 ft^2/Acres

4. Any Additional Cost (i.e. Excavation, Base Course) Are Covered By Apron Construction Estimate

5. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TIE DOWNS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Tie Down Construction	LUMP SUM	ALL REQUIRED	$ 6,060,663	$ 6,060,663
				Project Total:	$ 6,060,663
				Project Rounded Total:	**$ 6,100,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Tie Down	287,474

2. Tie Down Structural Section:	Pay Unit	Quantity	Unit Price	Amount
34" Unclassified Excavation (P-152a)	Cubic Yard	48,300	$ 15	$ 724,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	3,800	$ 40	$ 152,000
6" Crushed Aggregate Base Course (P-209b)	Ton	12,500	$ 45	$ 562,500
24" Subbase Course (P-154b)	Ton	66,300	$ 20	$ 1,326,000
Geotextile Separation (P-681a)	Cubic Yards	38,400	$ 3	$ 115,200
Clearing & Grubbing (P-151c)	Acres	7	$ 7,999	$ 52,793
			Subtotal:	$ 2,932,993
			Soft Cost @35%:	$ 1,026,548
			Design Engineering (DE) at 15%:	$ 593,931
			Construction Engineering (CE) at 15%:	$ 593,931
			ICAP at 4.87%:	$ 250,679
			Total:	$ 5,398,082
			Rounded Total:	**$ 5,400,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON WITH HANGARS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 3,246,402	$ 3,246,402
				Project Total:	$ 3,246,402
				Project Rounded Total:	**$ 3,300,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	438,212

2. Apron Structural Section:	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	27,600	$ 15	$ 414,000
2" Crushed Aggregate Surface Course (P-208c)	Ton	2,600	$ 40	$ 104,000
6" Crushed Aggregate Base Course (P-209b)	Ton	7,600	$ 45	$ 342,000
24" Subbase Course (P-154b)	Ton	40,100	$ 20	$ 802,000
Geotextile Separation (P-681a)	Cubic Yards	23,300	$ 3	$ 69,900
Clearing & Grubbing (P-151c)	Acres	4	$ 7,999	$ 31,996
			Subtotal:	$ 1,763,896
			Soft Cost @35%:	$ 617,364
			Design Engineering (DE) at 15%:	$ 357,189
			Construction Engineering (CE) at 15%:	$ 357,189
			ICAP at 4.87%:	$ 150,758
			Total:	$ 3,246,395
			Rounded Total:	**$ 3,300,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Hangars Constructed on Top of Surface Course

7. Cost of Construction Hangars Not Included In Estimate

8. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON/TAXILANE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 4,030,994	$ 4,030,994
				Project Total:	$ 4,030,994
				Project Rounded Total:	**$ 4,100,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	216,526

2. Apron Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	34,300	$ 15	$ 514,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	3,200	$ 40	$ 128,000
6" Crushed Aggregate Base Course (P-209b)	Ton	9,400	$ 45	$ 423,000
24" Subbase Course (P-154b)	Ton	49,900	$ 20	$ 998,000
Geotextile Separation (P-681a)	Cubic Yards	28,900	$ 3	$ 86,700
Clearing & Grubbing (P-151c)	Acres	5	$ 7,999	$ 39,995
			Subtotal:	$ 2,190,195
			Soft Cost @35%:	$ 766,568
			Design Engineering (DE) at 15%:	$ 443,514
			Construction Engineering (CE) at 15%:	$ 443,514
			ICAP at 4.87%:	$ 187,193
			Total:	$ 4,030,985
			Rounded Total:	**$ 4,100,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CLEAR FUTURE TERMINAL/AIRPORT FACILIITES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Clearing Cost	LUMP SUM	ALL REQUIRED	$ 157,544	$ 157,544
				Project Total:	$ 157,544
				Project Rounded Total:	**$ 200,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Future Terminal and Airport Facilities	0

2. Clearing Costs:

	Pay Unit	Quantity	Unit Price	Amount
Clearing & Grubbing (P-151c)	Acres	11	$ 7,999	$ 85,589
			Subtotal:	$ 85,589
			Soft Cost @35%:	$ 29,956
			Design Engineering (DE) at 15%:	$ 17,332
			Construction Engineering (CE) at 15%:	$ 17,332
			ICAP at 4.87%:	$ 7,315
			Total:	$ 157,524
			Rounded Total:	**$ 200,000**

3. Estimating Factor:
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT SLIPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Slip Construction	LUMP SUM	ALL REQUIRED	$ 4,940,825	$ 4,940,825
---	Lighting & Electrical Service	LUMP SUM	ALL REQUIRED	$ 923,915	$ 923,915
				Project Total:	$ 5,864,740
				Project Rounded Total:	**$ 5,900,000**

ASSUMPTIONS, BASIC BID

1. Dimensions:

	Area (SF)	Volume (CY)
Slip Excavation Area	3,000	1,005

2. Shoreline Slips	Pay Unit	Quantity	Unit Price	Amount
Slips	Each	28	$ 35,500	$ 994,000
Unclassified Excavation (P-152a)	Cubic Yard	31,000	$ 15	$ 465,000
Clearing & Grubbing (P-151c)	Acres	2	$ 8,000	$ 16,000
			Total:	$ 1,475,000
			Soft Cost @35%:	$ 516,250
			Design Engineering (DE) at 15%:	$ 298,688
			Construction Engineering (CE) at 15%:	$ 298,688
			ICAP at 4.87%:	$ 126,066
			Total:	$ 2,714,691
			Rounded Total:	**$ 2,800,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Estimating Factor:
   Clearing & Grubbing = 43560 ft^2/Acres

5. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

6. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ENVIRONMENTAL COMPLIANCE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Environmental Compliance	LUMP SUM	ALL REQUIRED	$ -	$ -
				Project Total:	$ 700,000
				Project Rounded Total:	**$ 700,000**

ASSUMPTIONS

1. FAA involvement triggers National Environmental Policy Act (NEPA)
2. Environmental Tasks will include:
   - a. Environmental Document Preparation
     - i. Environmental Assessment will be the class of Action
   - b. Coordination and Consultation with Key Agencies
     - i. Agency Scoping
     - ii. Section 106 Consultation
   - c. Supporting Studies
     - i. Bald Eagle Survey prior to tree clearing
     - ii. Wetland Delineation
     - iii. Historic Property Evaluations / Historical, Archaeological, and Cultural Resources Investigat
     - iv. Fish Survey
     - v. Section 4(f)
   - d. Permitting
     - i. Section 404
     - ii. Title 16
     - iii. Temporary Water Use Permits

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL ACCESS ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 5,411,898	$ 5,411,898
				Project Total:	$ 5,411,898
				Project Rounded Total:	**$ 5,500,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	10,032	25	250,800
Roadway Shoulder	10,032	4	40,128

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	45,800	$ 15	$ 687,000.00
4" Crushed Aggregate Surface Course (P-208c)	Ton	6,100	$ 40	$ 244,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	12,200	$ 45	$ 549,000.00
24" Subbase Course (P-154b)	Ton	64,800	$ 20	###########
Geotextile, Separation (P-681a)	Square Yard	37,500	$ 3	$ 112,500.00
Clearing & Grubbing (P-151c)	Acre	7	$ 7,999	$ 51,994
			Subtotal:	$ 2,940,494
			Soft Cost @35%:	$ 1,029,173
			Design Engineering (DE) at 15%:	$ 595,450
			Construction Engineering (CE) at 15%:	$ 595,450
			ICAP at 4.87%:	$ 251,320
			Total:	$ 5,411,886
			Rounded Total:	**$ 5,500,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

7. Road Connects to Utilities

8. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: BRINGING UTILITIES INTO SITE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 3,119,850	$ 3,119,850
				Project Total:	$ 3,119,850
				Project Rounded Total:	**$ 3,200,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	12,100	$ 60	$ 726,000
Gas	Linear Foot	31,700	$ 50	$ 1,585,000
			Total:	$ 2,311,000
			Rounded Total:	**$ 2,400,000**

2. Soft cost includes typical contractor furnished items
(G-items in DOT&PF airport project specifications):
10% Mobilization / Demobilization
25% Various Contractor Furnished Services

3. Length of road from Point Mackenzie to site 1.9 miles

4. Length of Road form Burma to site, following Point Mackenzie 5 miles

5. Price is taken from Utility spread sheet from Chris Pletnikoff. Assumed length is from Point Mackenzie road into the site

6. Price taken from email to Chris Cole on 6/24/16. Would have to start at Burma and follow the access road into the site

7. 3 Phase Electric Direct Buried

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ON SITE UTILITIES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 1,128,600	$ 1,128,600
				Project Total:	$ 1,128,600
				Project Rounded Total:	**$ 1,200,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	7,600	$ 60	$ 456,000
Gas	Linear Foot	7,600	$ 50	$ 380,000
			Total:	$ 836,000
			Rounded Total:	**$ 900,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Length of road from Point Mackenzie to site 1.9 miles

4. Length of Road form Burma to site, following Point Mackenzie 5 miles

5. Price is taken from Utility spread sheet from Chris Pletnikoff

6. Price taken from email to Chris Cole on 6/24/16

7. 3 Phase Electric Direct Buried

Item No.	Seven Mile Lake Airport Master Plan	Notes	Project Total
MID 1	Construct Vehicle Road	(Fig. MID 1)	$ 5,100,000
MID 2	Construct Gravel Taxiway to be paved	(Fig. MID 2)	$ 15,000,000
MID 3	Construct Gravel Taxiway Parallel To Road	(Fig. MID 3)	$ 9,800,000
MID 4	Construct Gravel Runway	(Fig. MID 4)	$ 12,700,000
MID 5	Dredge Taxi Channel	(Fig. MID 5)	$ 13,900,000
MID 6	Construct Float Plane Ramp	(Fig. MID 6)	$ 1,900,000
MID 7	Construct Tie Downs	(Fig. MID 7)	$ 9,500,000
MID 8	Construct Gravel Apron With Hangars	(Fig. MID 8)	$ 8,900,000
MID 9	Construct Gravel Apron/Taxiway	(Fig. MID 9)	$ 7,800,000
MID 10	Future Terminal and Airport Facilities	(Fig. MID 10)	$ 200,000
MID 11	Construct Floatplane Slips	(Fig. MID 11)	$ 4,500,000
MID 12	Environmental Compliance	(Fig. MID 12)	$ 800,000
MID 13	Construct Gravel Access Road into Site	(Fig. MID 13)	$ 5,500,000
MID 14	Bringing Utilities into Site	(Fig. MID 14)	$ 3,200,000
MID 15	On Site Utilities	(Fig. MID 15)	$ 1,700,000
		Total	**$ 76,600,000**

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT VEHICLE ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 5,021,534	$ 5,021,534
				Project Total:	$ 5,021,534
				Project Rounded Total:	**$ 5,100,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	8,983	25	224,574
Roadway Shoulder	8,983	4	35,932

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	42,500	$ 15	$ 637,500
3" Crushed Aggregate Surface Course (P-208C)	Ton	5,700	$ 40	$ 228,000
6" Crushed Aggregate Base Course (P-209b)	Ton	11,300	$ 45	$ 508,500
24" Subbase Course (P-154b)	Ton	60,100	$ 20	$ 1,202,000
Geotextile, Separation (P-681a)	Square Yard	34,800	$ 3	$ 104,400.00
Clearing & Grubbing (P-151c)	Acres	6	$ 7,999	$ 47,994
			Subtotal:	$ 2,728,394
			Soft Cost @35%:	$ 954,938
			Design Engineering (DE) at 15%:	$ 552,500
			Construction Engineering (CE) at 15%:	$ 552,500
			ICAP at 4.87%:	$ 233,192
			Total:	$ 5,021,523
			Rounded Total:	**$ 5,100,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208C) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TAXIWAY TO BE PAVED

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 8,249,600	$ 8,249,600
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 3,339,229	$ 3,339,229
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 3,339,229	$ 3,339,229
				Project Total:	$ 14,928,058
				Project Rounded Total:	**$ 15,000,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	13,040	35	456,396
Taxilane Safety Area	1,300	45	58,500
Object Free Area	1,300	178	231,400

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	57,955	$ 15	$ 869,325
2" Crushed Aggregate Surface Course (P-208c)	Ton	5,477	$ 40	$ 219,070
6" Crushed Aggregate Base Course (P-209b)	Ton	16,430	$ 45	$ 739,361
24" Subbase Course (P-154b)	Ton	65,721	$ 20	$ 1,314,419.86
32" Subbase Course (P-154b) @ TSA	Ton	25,037	$ 20	$ 500,731
Geotextile Separation (P-681a)	Cubic Yards	115,910	$ 3	$ 347,730
Clearing & Grubbing (P-151c)	Acres	67	$ 7,999	$ 533,982
			Subtotal:	$ 4,524,619
			Soft Cost @35%:	$ 1,583,617
			Design Engineering (DE) at 15%:	$ 916,235
			Construction Engineering (CE) at 15%:	$ 916,235
			ICAP at 3.89%:	$ 308,894
			Total:	$ 8,249,600
			Rounded Total:	**$ 8,250,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208b) = 2.039 ton/cy
   - Clearing & Grubbing = 43560 Square Feet/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Paved Taxilane Constructed On Top of Existing Gravel Taxiway Where Possible

7. Roadway Lighting Cost = $1.47/ft.

8. Underground Cable (L-108a) Is Included In Roadway And Taxilane Lighting Costs

9. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL TAXIWAY PARALLEL TO ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 6,433,959	$ 6,433,959
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 2,293,904	$ 2,293,904
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 2,293,904	$ 2,293,904
				Project Total:	$ 11,021,767
				Project Rounded Total:	**$ 11,100,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	6,990	25	174,743
Taxilane Safety Area	6,990	49	342,497
Object Free Area	6,990	89	622,086

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	54,200	$ 15	$ 813,000
2"Crushed Aggregate Surface Course (P-208c)	Ton	2,600	$ 40	$ 104,000
6" Crushed Aggregate Base Course (P-209b)	Ton	7,600	$ 45	$ 342,000
24" Subbase Course (P-154b)	Ton	30,196	$ 20	$ 603,913
32" Subbase Course (P-154b) @ TSA	Ton	38,650	$ 20	$ 773,009
Geotextile Separation (P-681a)	Cubic Yards	45,700	$ 3	$ 137,100
Clearing & Grubbing (P-151c)	Acres	14	$ 7,999	$ 114,386
			Subtotal:	$ 2,887,407
			Soft Cost @35%:	$ 1,010,593
			Design Engineering (DE) at 15%:	$ 584,700
			Construction Engineering (CE) at 15%:	$ 584,700
			ICAP at 4.87%:	$ 246,782
			Total:	$ 5,314,182
			Rounded Total:	**$ 5,400,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-208c) = 1.944 ton/cy
   - Taxilane Lighting/Electrical Items Cost = $140.45/ft
   - Clearing & Grubbing = 43560 ft^2/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. 3 Phase Electric Is Included In Taxilane Lighting Lump Sum.

7. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL RUNWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Runway Construction	LUMP SUM	ALL REQUIRED	$ 9,008,037	$ 9,008,037
---	Runway Lighting	LUMP SUM	ALL REQUIRED	$ 1,338,683	$ 1,338,683
---	Dust Palliative	LUMP SUM	ALL REQUIRED	$ 276,070	$ 276,070
				Project Total:	$ 10,622,790
				Project Rounded Total:	**$ 10,700,000**

ASSUMPTIONS

1. Dimensions:	Length (ft.)	Width (ft.)	Area (SF)
Runway	3,200	60	192,000
Runway Safety Area	3,680	120	185,600
Runway Shoulder	3,200	20	64,000
Object Free Area	3,680	250	478,400

2. Runway Structural Section:	Pay Unit	Quantity	Unit Price	Amount
42" Unclassified Excavation (P-152a)	Cubic Yards	94,100	$ 15.00	$ 1,411,500
12" Crushed Aggregate Surface Course (P-208c)	Ton	17,107	$ 40.00	$ 684,288.00
12" Crushed Aggregate Surface Course (P-208c) @ Shoulder	Ton	5,702	$ 40.00	$ 228,096.00
6" Crushed Aggregate Base Course (P-209b)	Ton	8,554	$ 45	$ 384,912
6" Crushed Aggregate Base Course (P-209b) @ Shoulder	Ton	2,851	$ 45	$ 128,304
24" Subbase Course (P-154b)	Ton	34,214	$ 20	$ 684,288
24" Subbase Course (P-154b) @ Shoulder	Ton	11,405	$ 20	$ 228,096
42" Subbase Course (P-154b) @ RSA	Ton	57,335	$ 20	$ 1,146,701
Geotextile Separation (P-681a)	Square Yards	60,500	$ 3	$ 181,500
Clearing & Grubbing (P-151c)	Acres	21	$ 7,999	$ 168,941
			Subtotal:	$ 5,246,626
			Soft Cost @35%:	$ 1,836,319
			Design Engineering (DE) at 15%:	$ 1,062,442
			Construction Engineering (CE) at 15%:	$ 1,062,442
			ICAP at 4.87%:	$ 448,421
			Total:	$ 9,656,250
			Rounded Total:	**$ 9,700,000**

ASSUMPTIONS (CONT'D)

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Runway Lighting Cost = $227.3/ft.
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Phase 3 Electric Included In Runway Lighting Lump Sum

7. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: DREDGE TAXI CHANNEL

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	DREDGING	LUMP SUM	ALL REQUIRED	$ 13,861,489	$ 13,861,489
				Project Total:	$ 13,861,489
				Project Rounded Total:	**$ 13,900,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Taxi Channel	2,053,784

2. Taxi Channel Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
3' Unclassified Excavation (P-152a)	Cubic Yard	502,100	$ 15.00	$ 7,531,500

Subtotal:	$	7,531,500
Soft Cost @35%:	$	2,636,025
Design Engineering (DE) at 15%:	$	1,525,129
Construction Engineering (CE) at 15%:	$	1,525,129
ICAP at 4.87%:	$	643,706
Total:	$	13,861,489
Rounded Total:	**$**	**13,900,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Object Free Areas Included In CIVIL 3D Drawing.

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT PLANE RAMPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Ramp Construction	LUMP SUM	ALL REQUIRED	$ 1,843,413	$ 1,843,413
				Project Total:	$ 1,843,413
				Project Rounded Total:	**$ 1,900,000**

ASSUMPTIONS

1. Pay Description	Pay Unit	Quantity	Unit Price	Amount
Ramp	Each	2	$ 500,000	$ 1,000,000
Clearing & Grubbing (P-151c)	Acres	0.20	$ 8,000	$ 1,600
			Subtotal:	$ 1,001,600
			Soft Cost @35%:	$ 350,560
			Design Engineering (DE) at 15%:	$ 202,824
			Construction Engineering (CE) at 15%:	$ 202,824
			ICAP at 4.87%:	$ 85,605
			Total:	$ 1,843,413
			Rounded Total:	**$ 1,900,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Estimating Factor:
   Area of Ramp = 4000 (SF)
   Clearing & Grubbing = 43560 ft^2/Acres

4. Any Additional Cost (i.e. Excavation, Base Course) Are Covered By Apron Construction Estimate

5. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TIE DOWNS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Tie Down Construction	LUMP SUM	ALL REQUIRED	$ 9,437,554	$ 9,437,554
				Project Total:	$ 9,437,554
				Project Rounded Total:	**$ 9,500,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Tie Down	296,301

2. Tie Down Structural Section:	Pay Unit	Quantity	Unit Price	Amount
34" Unclassified Excavation (P-152a)	Cubic Yard	75,200	$ 15	$ 1,128,000
2" Crushed Aggregate Surface Course (P-208c)	Ton	6,000	$ 40	$ 240,000
6" Crushed Aggregate Base Course (P-209b)	Ton	19,400	$ 45	$ 873,000
24" Subbase Course (P-154b)	Ton	103,200	$ 20	$ 2,064,000
Geotextile Separation (P-681a)	Cubic Yards	59,800	$ 3	$ 179,400
Clearing & Grubbing (P-151c)	Acres	10	$ 7,999	$ 82,390
Tie Downs	Each	187	$ 3,000	$ 561,000
			Subtotal:	$ 5,127,790
			Soft Cost @35%:	$ 1,794,726
			Design Engineering (DE) at 15%:	$ 1,038,377
			Construction Engineering (CE) at 15%:	$ 1,038,377
			ICAP at 4.87%:	$ 438,264
			Total:	$ 9,437,535
			Rounded Total:	**$ 9,500,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON WITH HANGARS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 8,830,016	$ 8,830,016
				Project Total:	$ 8,830,016
				Project Rounded Total:	**$ 8,900,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	438,212

2. Apron Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	75,100	$ 15	$ 1,126,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	6,900	$ 40	$ 276,000
6" Crushed Aggregate Base Course (P-209b)	Ton	20,600	$ 45	$ 927,000
24" Subbase Course (P-154b)	Ton	109,500	$ 20	$ 2,190,000
Geotextile Separation (P-681a)	Cubic Yards	63,400	$ 3	$ 190,200
Clearing & Grubbing (P-151c)	Acres	11	$ 7,999	$ 87,989
			Subtotal:	$ 4,797,689
			Soft Cost @35%:	$ 1,679,191
			Design Engineering (DE) at 15%:	$ 971,532
			Construction Engineering (CE) at 15%:	$ 971,532
			ICAP at 4.87%:	$ 410,051
			Total:	$ 8,829,995
			Rounded Total:	**$ 8,900,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208b) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Hangars Constructed on Top of Surface Course

7. Cost of Constructing Hangars Not Included In Estimate

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON/TAXIWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 7,794,016	$ 7,794,016
				Project Total:	$ 7,794,016
				Project Rounded Total:	**$ 7,800,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	419,242

2. Apron Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	66,300	$ 15	$ 994,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	6,100	$ 40	$ 244,000
6" Crushed Aggregate Base Course (P-209b)	Ton	18,200	$ 45	$ 819,000
24" Subbase Course (P-154b)	Ton	96,600	$ 20	$ 1,932,000
Geotextile Separation (P-681a)	Cubic Yards	55,900	$ 3	$ 167,700.00
Clearing & Grubbing (P-151c)	Acres	10	$ 7,999	$ 77,590
			Subtotal:	$ 4,234,790
			Soft Cost @35%:	$ 1,482,177
			Design Engineering (DE) at 15%:	$ 857,545
			Construction Engineering (CE) at 15%:	$ 857,545
			ICAP at 4.87%:	$ 361,941
			Total:	$ 7,793,998
			Rounded Total:	**$ 7,800,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CLEAR FUTURE TERMINAL/AIRPORT FACILIITES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Clearing Cost	LUMP SUM	ALL REQUIRED	$ 157,544	$ 157,544
				Project Total:	$ 157,544
				Project Rounded Total:	**$ 200,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Future Terminal and Airport Facilities	465,116

2. Clearing:

	Pay Unit	Quantity	Unit Price	Amount
Clearing & Grubbing (P-151c)	Acres	11	$ 7,999	$ 85,589
			Subtotal:	$ 85,589
			Soft Cost @35%:	$ 29,956
			Design Engineering (DE) at 15%:	$ 17,332
			Construction Engineering (CE) at 15%:	$ 17,332
			ICAP at 4.87%:	$ 7,315
			Total:	$ 157,524
			Rounded Total:	**$ 200,000**

3. Estimating Factor:
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. Leveling Costs not calculated at this stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT SLIPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Slip Construction	LUMP SUM	ALL REQUIRED	$ 4,457,799	$ 4,457,799
				Project Total:	$ 4,457,799
				Project Rounded Total:	**$ 4,500,000**

ASSUMPTIONS, BASIC BID

1. Dimensions:

	Area (SF)	Volume (CY)
Slip Excavation Area	1,248,570	46,243

2. Shoreline Slips	Pay Unit	Quantity	Unit Price	Amount
Slips	Each	46	$ 35,500	$ 1,633,000
Unclassified Excavation (P-152a)	Cubic Yard	50,900	$ 15	$ 763,500
Clearing & Grubbing (P-151c)	Acres	3.20	$ 8,000	$ 25,600
			Total:	$ 2,422,100
			Soft Cost @35%:	$ 847,735
			Design Engineering (DE) at 15%:	$ 490,475
			Construction Engineering (CE) at 15%:	$ 490,475
			ICAP at 4.87%:	$ 207,013
			Total:	$ 4,457,799
			Rounded Total:	**$ 4,500,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Estimating Factor:
   Slip Area =3000 (SF) Per Slip
   Excavation Volume/Slip = 1005.29 Cubic Yards
   Clearing & Grubbing = 43560 ft^2/Acres

5. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

6. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ENVIRONMENTAL COMPLIANCE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Environmental Compliance	LUMP SUM	ALL REQUIRED	$ 800,000	$ 800,000
				Project Total:	$ 800,000
				Project Rounded Total:	**$ 800,000**

ASSUMPTIONS

1 FAA involvement triggers National Environmental Policy Act (NEPA)

2 Environmental Tasks will include:

- a. Environmental Document Preparation
  - i. Environmental Assessment will be the class of Action
- b. Coordination and Consultation with Key Agencies
  - i. Agency Scoping
  - ii. Section 106 Consultation
- c. Supporting Studies
  - i. Bald Eagle Survey prior to tree clearing
  - ii. Wetland Delineation
  - iii. Historic Property Evaluations / Historical, Archaeological, and Cultural Resources Investigation
  - iv. Fish Survey
  - v. Section 4(f)
- d. Permitting
  - i. Section 404
  - ii. Title 16
  - iii. Temporary Water Use Permits

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL ACCESS ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 5,411,898	$ 5,411,898
				Project Total:	$ 5,411,898
				Project Rounded Total:	**$ 5,500,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	10,032	25	250,800
Roadway Shoulder	10,032	4	40,128

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	45,800	$ 15	$ 687,000.00
4" Crushed Aggregate Surface Course (P-401a)	Ton	6,100	$ 40	$ 244,000.00
6" Crushed Aggregate Base Course (P-209b)	Ton	12,200	$ 45	$ 549,000.00
24" Subbase Course (P-154b)	Ton	64,800	$ 20	$ 1,296,000.00
Geotextile, Separation (P-681a)	Square Yard	37,500	$ 3	$ 112,500.00
Clearing & Grubbing (P-151c)	Acre	7	$ 7,999	$ 51,994
			Subtotal:	$ 2,940,494
			Soft Cost @35%:	$ 1,029,173
			Design Engineering (DE) at 15%:	$ 595,450
			Construction Engineering (CE) at 15%:	$ 595,450
			ICAP at 4.87%:	$ 251,320
			Total:	$ 5,411,886
			Rounded Total:	**$ 5,500,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Road Connects to Utilities

7. Leveling Costs Not Included At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: BRINGING UTILITIES INTO SITE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 3,119,850	$ 3,119,850
				Project Total:	$ 3,119,850
				Project Rounded Total:	**$ 3,200,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	12,100	$ 60	$ 726,000
Gas	Linear Foot	31,700	$ 50	$ 1,585,000
Soft Cost @ 35%	Lump Sum	All Required	$ 808,850	$ 808,850
			Total:	$ 3,119,850
			Rounded Total:	**$ 3,200,000**

2. Soft cost includes typical contractor furnished items
(G-items in DOT&PF airport project specifications):
10% Mobilization / Demobilization
25% Various Contractor Furnished Services

3. Length of road from Point Mackenzie to site 1.9 miles

4. Length of Road form Burma to site, following Point Mackenzie 5 miles

5. Price is taken from Utility spread sheet from Chris Pletnikoff. Assumed length is from Point Mackenzie road into the site

6. Price taken from email to Chris Cole on 6/24/16. Would have to start at Burma and follow the access road into the site

7. 3 Phase Electric Direct Buried

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ON SITE UTILITIES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 1,603,800	$ 1,603,800
				Project Total:	$ 1,603,800
				Project Rounded Total:	**$ 1,700,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	10,800	$ 60	$ 648,000
Gas	Linear Foot	10,800	$ 50	$ 540,000
Soft Cost @ 35%	Lump Sum	All Required	$ 415,800	$ 415,800
			Total:	$ 1,603,800
			Rounded Total:	**$ 1,700,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Length of road from Point Mackenzie to site — 1.9 miles

4. Length of Road form Burma to site, following Point Mackenzie — 5 miles

5. Price is taken from Utility spread sheet from Chris Pletnikoff

6. Price taken from email to Chris Cole on 6/24/16

7. 3 Phase Electric Direct Buried

Item No.	Seven Mile Lake Airport Master Plan	Notes	Project Total
ULT 1	Construct Vehicle Road	(Fig. ULT 1)	$ 7,200,000
ULT 2	Construct Paved Taxiway	(Fig. ULT 2)	$ 24,100,000
ULT 3	Construct Gravel Taxiway	(Fig. ULT 3)	$ 1,200,000
ULT 4	Construct Gravel Runway	(Fig. ULT 4)	$ 12,700,000
ULT 5	Construct Paved Runway	(Fig. ULT 5)	$ 24,600,000
ULT 6	Dredge Taxi Channel	(Fig. ULT 6)	$ 13,900,000
ULT 7	Construct Float Plane Ramp	(Fig. ULT 7)	$ 1,900,000
ULT 8	Construct Tie Downs	(Fig. ULT 8)	$ 12,800,000
ULT 9	Construct Gravel Apron With Hangars	(Fig. ULT 9)	$ 8,900,000
ULT 10	Construct Gravel Apron/Taxiway	(Fig. ULT 10)	$ 7,800,000
ULT 11	Future Terminal and Airport Facilities	(Fig. ULT 11)	$ 200,000
ULT 12	Dredge Water Lane	(Fig. ULT 12)	$ 6,200,000
ULT 13	Construct Slips	(Fig. ULT 13)	$ 5,400,000
ULT 14	Environmental Compliance	(Fig. ULT 14)	$ 1,100,000
ULT 15	Construct Paved Access Road into Site	(Fig. ULT 15)	$ 6,900,000
ULT 16	Bringing Utilities into Site	(Fig. ULT 16)	$ 3,200,000
ULT 17	On Site Utilities	(Fig. ULT 17)	$ 1,900,000
		Total	**$ 131,100,000**

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT VEHICLE ROAD

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 7,114,331	$ 7,114,331
				Project Total:	$ 7,114,331
				Project Rounded Total:	**$ 7,200,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	10,125	25	253,126
Roadway Shoulder	10,125	4	40,500

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	47,900	$ 15	$ 718,500
3" HMA, Type II, Class A (P-401a)	Ton	6,100	$ 145	$ 884,500
5.3% of P-401a for Asphalt Cement, PG 52-28 (P-401c)	Ton	330	$ 500	$ 165,000
6" Crushed Aggregate Base Course (P-209b)	Ton	12,700	$ 45	$ 571,500
24" Subbase Course (P-209b)	Ton	67,700	$ 20	$ 1,354,000.00
Geotextile, Separation (P-681a)	Square Yard	39,200	$ 3	$ 117,600.00
Clearing & Grubbing (P-151c)	Acres	7	$ 8,000	$ 54,400
			Subtotal:	$ 3,865,500
			Soft Cost @35%:	$ 1,352,925
			Design Engineering (DE) at 15%:	$ 782,764
			Construction Engineering (CE) at 15%:	$ 782,764
			ICAP at 4.87%:	$ 330,378
			Total:	$ 7,114,331
			Rounded Total:	**$ 7,200,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT PAVED TAXIWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 18,996,747	$ 18,996,747
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 3,369,750	$ 3,369,750
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 3,369,750	$ 3,369,750
				Project Total:	$ 25,736,247
				Project Rounded Total:	**$ 25,800,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	10,833	35	379,153
Taxilane Safety Area	10,833	45	487,482
Object Free Area	10,833	131	1,419,115

2. Taxilane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	135,300	$ 15	$ 2,029,500
4" HMA Type II, Class A (P-401c)	Ton	10,500	$ 145	$ 1,522,500
5.3% of P-401a for Asphalt Cement, PG 52-28 (P-401c)	Ton	560	$ 500	$ 280,000
2"Crushed Aggregate Surface Course (P-208c)	Ton	5,500	$ 40	$ 220,000
6" Crushed Aggregate Base Course (P-209b)	Ton	16,400	$ 45	$ 738,000
24" Subbase Course (P-154b)	Ton	65,518	$ 20	$ 1,310,352
32" Subbase Course (P-154b) @ TSA	Ton	109,820	$ 20	$ 2,196,399
Geotextile Separation (P-681a)	Cubic Yards	114,200	$ 3	$ 342,600
Clearing & Grubbing (P-151c)	Acres	33	$ 8,000	$ 260,800
			Subtotal:	$ 8,900,151
			Soft Cost @35%:	$ 3,115,053
			Design Engineering (DE) at 15%:	$ 1,802,281
			Construction Engineering (CE) at 15%:	$ 1,802,281
			ICAP at 4.87%:	$ 760,683
			Total:	$ 16,380,448
			Rounded Total:	**$ 16,400,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   - Taxilane Lighting Cost = $140.45/foot
   - Clearing & Grubbing = 43560 ft^2/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Paved Taxilane Constructed On Top of Existing Gravel Taxilane

7. 3 Phase Electric Is Included In Taxilane Lighting and Electrical Items Lump Sum

8. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL TAXIWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Taxilane Construction	LUMP SUM	ALL REQUIRED	$ 1,041,136	$ 1,041,136
---	Taxilane Lighting	LUMP SUM	ALL REQUIRED	$ 371,197	$ 371,197
---	Electrical Items	LUMP SUM	ALL REQUIRED	$ 371,197	$ 371,197
				Project Total:	$ 1,783,531
				Project Rounded Total:	**$ 1,800,000**

ASSUMPTIONS

1. Dimensions:	Length (ft.)	Width (ft.)	Area (SF)
Taxilane	798	25	19,950
Taxilane Safety Area	798	49	39,102
Object Free Area	798	89	71,021

2. Taxilane Structural Section:	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	6,200	$ 15	$ 93,000
2" Crushed Aggregate Surface Course (P-208c)	Ton	300	$ 40	$ 12,000
6" Crushed Aggregate Base Course (P-209b)	Ton	900	$ 45	$ 40,500
24" Subbase Course (P-154b)	Ton	3,447	$ 20	$ 68,947
32" Subbase Course (P-154b) @ TSA	Ton	4,413	$ 20	$ 88,252
Geotextile Separation (P-681a)	Cubic Yards	5,300	$ 3	$ 15,900
Clearing & Grubbing (P-151c)	Acres	2	$ 8,000	$ 13,600
			Subtotal:	$ 332,198
			Soft Cost @35%:	$ 116,269
			Design Engineering (DE) at 15%:	$ 67,270
			Construction Engineering (CE) at 15%:	$ 67,270
			ICAP at 4.87%:	$ 28,392
			Total:	$ 611,400
			Rounded Total:	**$ 700,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   - Taxilane Lighting Cost = $140.45/foot
   - Clearing & Grubbing = 43560 ft^2/Acres

ASSUMPTIONS (CONT'D)

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Phase 3 Electric Included In Taxilane Lighting And Electrical Items Lump Sum

7. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL RUNWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Runway Construction	LUMP SUM	ALL REQUIRED	$ 9,008,037	$ 9,008,037
---	Runway Lighting	LUMP SUM	ALL REQUIRED	$ 1,338,683	$ 1,338,683
---	Dust Palliative	LUMP SUM	ALL REQUIRED	$ 276,070	$ 276,070
				Project Total:	$ 10,622,790
				Project Rounded Total:	**$ 10,700,000**

ASSUMPTIONS

1. Dimensions:	Length (ft.)	Width (ft.)	Area (SF)
Runway	3,300	60	198,000
Runway Safety Area	3,780	120	453,600
Runway Shoulder	3,300	20	66,000
Object Free Area	3,780	250	945,000

2. Runway Structural Section:	Pay Unit	Quantity	Unit Price	Amount
42" Unclassified Excavation (P-152a)	Cubic Yards	94,100	$ 15.00	$ 1,411,500
12" Crushed Aggregate Surface Course (P-208c)	Ton	17,107	$ 40.00	$ 684,288.00
12" Crushed Aggregate Surface Course (P-208c) @ Shoulder	Ton	5,702	$ 40.00	$ 228,096.00
6" Crushed Aggregate Base Course (P-209b)	Ton	8,554	$ 45.00	$ 384,912
6" Crushed Aggregate Base Course (P-209b) @ Shoulder	Ton	2,851	$ 45.00	$ 128,304.00
24" Subbase Course (P-154b)	Ton	34,214	$ 20.00	$ 684,288
24" Subbase Course (P-154b) @ Shoulder	Ton	11,405	$ 20.00	$ 228,096.00
42" Subbase Course (P-154b) @ RSA	Ton	57,335	$ 20.00	$ 1,146,701
Geotextile Separation (P-681a)	Square Yards	60,500	$ 3.00	$ 181,500.00
Clearing & Grubbing (P-151c)	Acres	22	$ 8,000.00	$ 173,600.00
			Subtotal:	$ 5,251,285
			Soft Cost @35%:	$ 1,837,950
			Design Engineering (DE) at 15%:	$ 1,063,385
			Construction Engineering (CE) at 15%:	$ 1,063,385
			ICAP at 4.87%:	$ 448,819
			Total:	$ 9,664,824
			Rounded Total:	**$ 9,700,000**

ASSUMPTIONS (CONT'D)

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Runway Lighting Cost = $227.3/foot
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

7. 3 Phase Electric Included in Runway Lighting and Electrical Items Lump Sum

8. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT PAVED RUNWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Runway Construction	LUMP SUM	ALL REQUIRED	$ 23,071,913	$ 23,071,913
---	Runway Lighting	LUMP SUM	ALL REQUIRED	$ 2,509,157	$ 2,509,157
				Project Total:	$ 25,581,070
				Project Rounded Total:	**$ 25,600,000**

ASSUMPTIONS

1. Dimensions:	Length (ft.)	Width (ft.)	Area (SF)
Runway	5,000	100	500,000
Runway Safety Area	5,600	150	240,000
Runway Shoulder	5,000	20	100,000
Object Free Area	5,600	500	1,960,000

2. Runway Structural Section:	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excevation	Cubic Yards	68,750	$ 15.00	$ 1,031,250
42" Unclassified Excavation @ Runway Shoulder and RSA (P-152a)	Cubic Yards	59,500	$ 15.00	$ 892,500
5" HMA Type II (P-401a)	Ton	17,306	$ 145	$ 2,509,417.44
3" HMA Type II (P-401a) @ Shoulder	Ton	2,077	$ 145	$ 301,130.09
5.3% of P-401a for Asphalt Cement, PG 52-28 (P-401c)	Ton	1,030	$ 500	$ 515,000.00
4" Crushed Aggregate Base Course (P-209b)	Ton	14,400	$ 45	$ 648,000.00
6" Crushed Aggregate Base Course (P-209b) @ Shoulder	Ton	4,320	$ 45	$ 194,400.00
24" Subbase Course (P-154b)	Ton	86,400	$ 20	$ 1,728,000.00
33" Subbase Course (P-154b) @ Shoulder	Ton	23,760	$ 20	$ 475,200.00
42." Subbase Course (P-154b) @ RSA	Ton	72,576	$ 20	$ 1,451,520.00
Geotextile Separation (P-681a)	Square Yards	112,000	$ 3	$ 336,000.00
Clearing & Grubbing (P-151c)	Acres	64	$ 8,000	$ 514,400.00
			Subtotal:	$ 10,596,818
			Soft Cost @35%:	$ 3,708,886
			Design Engineering (DE) at 15%:	$ 2,145,855.55
			Construction Engineering (CE) at 15%:	$ 2,145,855.55
			ICAP at 4.87%:	$ 905,694
			Total:	$ 19,503,109
			Rounded Total:	**$ 19,600,000**

ASSUMPTIONS (CONT'D)

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   Runway Lighting Cost = $227.3/foot
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Phase 3 Electric Is Included In Runway Lighting Lump Sum

7. Aircraft Weight Not To Exceed 40,000 Pounds

8. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: DREDGE TAXI CHANNEL

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	DREDGING	LUMP SUM	ALL REQUIRED	$ 13,861,489	$ 13,861,489
				Project Total:	$ 13,861,489
				Project Rounded Total:	**$ 13,900,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Taxi Channel	2,053,784

2. Taxi Channel Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
3' Unclassified Excavation (P-152a)	Cubic Yard	502,100	$ 15.00	$ 7,531,500

Subtotal:	$	7,531,500
Soft Cost @35%:	$	2,636,025
Design Engineering (DE) at 15%:	$	1,525,129
Construction Engineering (CE) at 15%:	$	1,525,129
ICAP at 4.87%:	$	643,706
Total:	$	13,861,489
Rounded Total:	**$**	**13,900,000**

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. Object Free Areas Included In CIVIL 3D Drawing

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT PLANE RAMP

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Ramp Construction	LUMP SUM	ALL REQUIRED	$ 1,843,413	$ 1,843,413
				Project Total:	$ 1,843,413
				Project Rounded Total:	**$ 1,900,000**

ASSUMPTIONS

1. Pay Description	Pay Unit	Quantity	Unit Price	Amount
Ramp	Each	2	$ 500,000	$ 1,000,000
Clearing & Grubbing (P-151c)	Acres	0.20	$ 8,000	$ 1,600
			Subtotal:	$ 1,001,600
			Soft Cost @35%:	$ 350,560
			Design Engineering (DE) at 15%:	$ 202,824
			Construction Engineering (CE) at 15%:	$ 202,824
			ICAP at 4.87%:	$ 85,605
			Total:	$ 1,843,413
			Rounded Total:	**$ 1,900,000**

2. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

3. Estimating Factor
   Area of Ramp = 4000 (SF)
   Clearing & Grubbing = 43560 ft^2/Acres

4. Any Additional Cost (i.e. Excavation, Base Course) Are Covered By Apron Construction Estimate

5. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT TIE DOWNS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Tie Down Construction	LUMP SUM	ALL REQUIRED	$ 12,751,318	$ 12,751,318
				Project Total:	$ 12,751,318
				Project Rounded Total:	**$ 12,800,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Tie Down	447,857

2. Tie Down Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
34" Unclassified Excavation (P-152a)	Cubic Yard	75,200	$ 15	$ 1,128,000
4" HMA Type II (P-401a)	Ton	11,900	$ 145	$ 1,725,500
5.3% of P-401a for Asphalt Cement, PG 52-28 (P-401c)	Ton	630	$ 500	$ 315,000
6" Crushed Aggregate Base Course (P-209b)	Ton	19,400	$ 45	$ 873,000
24" Subbase Course (P-154b)	Ton	103,200	$ 20	$ 2,064,000
Geotextile Separation (P-681a)	Cubic Yards	59,800	$ 3	$ 179,400
Clearing & Grubbing (P-151c)	Acres	10	$ 8,000	$ 82,400
Tie Downs	Each	187	$ 3,000	$ 561,000
			Subtotal:	$ 6,928,300
			Soft Cost @35%:	$ 2,424,905
			Design Engineering (DE) at 15%:	$ 1,402,981
			Construction Engineering (CE) at 15%:	$ 1,402,981
			ICAP at 4.87%:	$ 592,151
			Total:	$ 12,751,318
			Rounded Total:	**$ 12,800,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated At This Stage

7. Tie Down area = 2400 SF (40' x 60')

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON WITH HANGARS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 8,830,016	$ 8,830,016
				Project Total:	$ 8,830,016
				Project Rounded Total:	**$ 8,900,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	475,096

2. Apron Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	75,100	$ 15	$ 1,126,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	6,900	$ 40	$ 276,000
6" Crushed Aggregate Base Course (P-209b)	Ton	20,600	$ 45	$ 927,000
24" Subbase Course (P-154b)	Ton	109,500	$ 20	$ 2,190,000
Geotextile Separation	Cubic Yards	63,400	$ 3	$ 190,200
Clearing & Grubbing (P-151c)	Acres	11	$ 8,000	$ 88,000
			Subtotal:	$ 4,797,700
			Soft Cost @35%:	$ 1,679,195
			Design Engineering (DE) at 15%:	$ 971,534
			Construction Engineering (CE) at 15%:	$ 971,534
			ICAP at 4.87%:	$ 410,052
			Total:	$ 8,830,016
			Rounded Total:	**$ 8,900,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Hangars Constructed on Top of Surface Course

7. Cost of Construction Hangars Not Included In Estimate

8. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT GRAVEL APRON/TAXIWAY

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Apron Construction	LUMP SUM	ALL REQUIRED	$ 7,794,016	$ 7,794,016
				Project Total:	$ 7,794,016
				Project Rounded Total:	**$ 7,800,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Apron	419,242

2. Apron Structural Section:	Pay Unit	Quantity	Unit Price	Amount
32" Unclassified Excavation (P-152a)	Cubic Yard	66,300	$ 15	$ 994,500
2" Crushed Aggregate Surface Course (P-208c)	Ton	6,100	$ 40	$ 244,000
6" Crushed Aggregate Base Course (P-209b)	Ton	18,200	$ 45	$ 819,000
24" Subbase Course (P-154b)	Ton	96,600	$ 20	$ 1,932,000
Geotextile Separation	Cubic Yards	55,900	$ 3	$ 167,700
Clearing & Grubbing (P-151c)	Acres	10	$ 8,000	$ 77,600
			Subtotal:	$ 4,234,800
			Soft Cost @35%:	$ 1,482,180
			Design Engineering (DE) at 15%:	$ 857,547
			Construction Engineering (CE) at 15%:	$ 857,547
			ICAP at 4.87%:	$ 361,942
			Total:	$ 7,794,016
			Rounded Total:	**$ 7,800,000**

3. Estimating Factor:
   - Subbase Course (P-154b) = 1.944 ton/cy
   - Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   - Crushed Aggregate Surface Course (P-208c) = 1.944 ton/cy
   - Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items (G-items in DOT&PF airport project specifications):
   - 10% Mobilization / Demobilization
   - 25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CLEAR FUTURE TERMINAL AND AIRPORT FACILIITES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Clearing Cost	LUMP SUM	ALL REQUIRED	$ 167,851	$ 167,851
				Project Total:	$ 167,851
				Project Rounded Total:	**$ 200,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Future Terminal and Airport Facilities	495,116

2. Clearing:

	Pay Unit	Quantity	Unit Price	Amount
Clearing & Grubbing (P-151c)	Acres	11	$ 8,000	$ 91,200
			Subtotal:	$ 91,200
			Soft Cost @35%:	$ 31,920
			Design Engineering (DE) at 15%:	$ 18,468
			Construction Engineering (CE) at 15%:	$ 18,468
			ICAP at 4.87%:	$ 7,795
			Total:	$ 167,851
			Rounded Total:	**$ 200,000**

3. Estimating Factor:
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: DREDGE SEA LANE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	DREDGING	LUMP SUM	ALL REQUIRED	$ 6,109,435	$ 6,109,435
				Project Total:	$ 6,109,435
				Project Rounded Total:	**$ 6,200,000**

ASSUMPTIONS

1. Dimensions:

	Area (SF)
Dredged Area	543,057

2. Sea Lane Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
6' Unclassified Excavation (P-152a)	Cubic Yard	221,300	$ 15.00	$ 3,319,500

Subtotal:	$	3,319,500
Soft Cost @35%:	$	1,161,825
Design Engineering (DE) at 15%:	$	672,199
Construction Engineering (CE) at 15%:	$	672,199
ICAP at 4.87%:	$	283,713
Total:	$	6,109,435
Rounded Total:	**$**	**6,200,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. Object Free Areas Included In CIVIL 3D Drawing

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT FLOAT SLIPS

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Slip Construction	LUMP SUM	ALL REQUIRED	$ 5,330,726	$ 5,330,726
				Project Total:	$ 5,330,726
				Project Rounded Total:	**$ 5,400,000**

ASSUMPTIONS, BASIC BID

1. Dimensions:

	Area (SF)	Volume (CY)
Slip Excavation Area	1,492,856	55,291

2. Shoreline Slips	Pay Unit	Quantity	Unit Price	Amount
Slips	Each	55	$ 35,500	$ 1,952,500
Unclassified Excavation (P-152a)	Cubic Yard	60,900	$ 15	$ 913,500
Clearing & Grubbing (P-151c)	Acres	3.80	$ 8,000	$ 30,400
			Total:	$ 2,896,400
			Soft Cost @35%:	$ 1,013,740
			Design Engineering (DE) at 15%:	$ 586,521
			Construction Engineering (CE) at 15%:	$ 586,521
			ICAP at 4.87%:	$ 247,551
			Total:	$ 5,330,733
			Rounded Total:	**$ 5,400,000**

3. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

4. Estimating Factor:
   3000 (SF) Per Slip = Slip Area
   Excavation Volume/Slip = 1005.29 Cubic Yards
   Clearing & Grubbing = 43560 ft^2/Acres

5. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

6. Leveling Costs Not Calculated at This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ENVIRONMENTAL COMPLIANCE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Environmental Compliance	LUMP SUM	ALL REQUIRED	$ 1,100,000	$ 1,100,000
				Project Total:	$ 1,100,000
				Project Rounded Total:	**$ 1,100,000**

ASSUMPTIONS

1 FAA involvement triggers National Environmental Policy Act (NEPA)

2 Environmental Tasks will include:

- a. Environmental Document Preparation
  - i. Environmental Assessment will be the class of Action
- b. Coordination and Consultation with Key Agencies
  - i. Agency Scoping
  - ii. Section 106 Consultation
- c. Supporting Studies
  - i. Bald Eagle Survey prior to tree clearing
  - ii. Wetland Delineation
  - iii. Historic Property Evaluations / Historical, Archaeological, and Cultural Resources Investigat
  - iv. Fish Survey
  - v. Section 4(f)
- d. Permitting
  - i. Section 404
  - ii. Title 16
  - iii. Temporary Water Use Permits

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: CONSTRUCT PAVED ACCESS ROAD INTO SITE

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Roadway Construction	LUMP SUM	ALL REQUIRED	$ 6,822,617	$ 6,822,617
				Project Total:	$ 6,822,617
				Project Rounded Total:	**$ 6,900,000**

ASSUMPTIONS

1. Dimensions:

	Length (ft.)	Width (ft.)	Area (SF)
Roadway	10,032	26	260,832
Roadway Shoulder	10,032	4	40,128

2. Roadway Structural Section:

	Pay Unit	Quantity	Unit Price	Amount
33" Unclassified Excavation	Cubic Yard	45,800	$ 15	$ 687,000
3" HMA, Type II, Class A (P-401a)	Ton	5,900	$ 145	$ 855,500
5.3% of P-401a for Asphalt Cement, PG 52-28 (P-401c)	Ton	310	$ 500	$ 155,000
6" Crushed Aggregate Base Course (P-209b)	Ton	12,200	$ 45	$ 549,000
24" Subbase Course (P-209b)	Ton	64,800	$ 20	$ 1,296,000.00
Geotextile, Separation (P-681a)	Square Yard	37,500	$ 3	$ 112,500.00
Clearing & Grubbing (P-151c)	Acres	7	$ 8,000	$ 52,000
			Subtotal:	$ 3,707,000
			Soft Cost @35%:	$ 1,297,450
			Design Engineering (DE) at 15%:	$ 750,668
			Construction Engineering (CE) at 15%:	$ 750,668
			ICAP at 4.87%:	$ 316,832
			Total:	$ 6,822,617
			Rounded Total:	**$ 6,900,000**

3. Estimating Factor:
   Subbase Course (P-154b) = 1.944 ton/cy
   Crushed Aggregate Base Course (P-209b) = 1.944 ton/cy
   HMA, Type II, Class A (P-401a) = 2.039 ton/cy
   Clearing & Grubbing = 43560 ft^2/Acres

4. Soft cost includes typical contractor furnished items
   (G-items in DOT&PF airport project specifications):
   10% Mobilization / Demobilization
   25% Various Contractor Furnished Services

5. 24" Subbase Due To Surrounding Wetlands

6. Leveling Costs Not Calculated At This Stage

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ON SITE UTILITIES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 3,119,850	$ 3,119,850
				Project Total:	$ 3,119,850
				Project Rounded Total:	**$ 3,200,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	12,100	$ 60	$ 726,000
Gas	Linear Foot	31,700	$ 50	$ 1,585,000
Soft Cost @ 35%	Lump Sum	All Required	$ 808,850	$ 808,850
			Total:	$ 3,119,850
			Rounded Total:	**$ 3,200,000**

2. Soft cost includes typical contractor furnished items
(G-items in DOT&PF airport project specifications):
10% Mobilization / Demobilization
25% Various Contractor Furnished Services

3. Price is taken from Utility spread sheet from Chris Pletnikoff. Assumed length is from Point Mackenzie road into the site

4. Price taken from email to Chris Cole on 6/24/16. Would have to start at Burma and follow the access road into the site

5. 3 Phase Electric Direct Buried

ENGINEER'S ESTIMATE

Seven Mile Lake Airport Master Plan

PROJECT: ON SITE UTILITIES

Item No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
========== BASIC BID ==========					
---	Install Utilities	LUMP SUM	ALL REQUIRED	$ 1,811,700	$ 1,811,700
				Project Total:	$ 1,811,700
				Project Rounded Total:	**$ 1,900,000**

ASSUMPTIONS, BASIC BID

1. Utilities	Pay Unit	Quantity	Unit Price	Amount
3 Phase Electric	Linear Foot	12,200	$ 60	$ 732,000
Gas	Linear Foot	12,200	$ 50	$ 610,000
Soft Cost @ 35%	Lump Sum	All Required	$ 469,700	$ 469,700
			Total:	$ 1,811,700
			Rounded Total:	**$ 1,900,000**

2. Soft cost includes typical contractor furnished items
(G-items in DOT&PF airport project specifications):
10% Mobilization / Demobilization
25% Various Contractor Furnished Services

5. Price is taken from Utility spread sheet from Chris Pletnikoff

6. Price taken from email to Chris Cole on 6/24/16

7. 3 Phase Electric Direct Buried

APPENDIX D

AIP Grant Assurances

FAA
Airports

ASSURANCES

Airport Sponsors

A. General.

1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors.
2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors.
3. Upon acceptance of this grant offer by the sponsor, these assurances are incorporated in and become part of this grant agreement.

B. Duration and Applicability.

1. **Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor.**

   The terms, conditions and assurances of this grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances.

2. **Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor.**

   The preceding paragraph 1 also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project.

3. **Airport Planning Undertaken by a Sponsor.**

Unless otherwise specified in this grant agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 25, 30, 32, 33, and 34 in Section C apply to planning projects. The terms, conditions, and assurances of this grant agreement shall remain in full force and effect during the life of the project; there shall be no limit on the duration of the assurances regarding Airport Revenue so long as the airport is used as an airport.

C. Sponsor Certification.

The sponsor hereby assures and certifies, with respect to this grant that:

1. **General Federal Requirements.**

It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of Federal funds for this project including but not limited to the following:

Federal Legislation

a. Title 49, U.S.C., subtitle VII, as amended.
b. Davis-Bacon Act - 40 U.S.C. 276(a), et seq.[1]
c. Federal Fair Labor Standards Act - 29 U.S.C. 201, et seq.
d. Hatch Act – 5 U.S.C. 1501, et seq.[2]
e. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Title 42 U.S.C. 4601, et seq.[1 2]
f. National Historic Preservation Act of 1966 - Section 106 - 16 U.S.C. 470(f).[1]
g. Archeological and Historic Preservation Act of 1974 - 16 U.S.C. 469 through 469c.[1]
h. Native Americans Grave Repatriation Act - 25 U.S.C. Section 3001, et seq.
i. Clean Air Act, P.L. 90-148, as amended.
j. Coastal Zone Management Act, P.L. 93-205, as amended.
k. Flood Disaster Protection Act of 1973 - Section 102(a) - 42 U.S.C. 4012a.[1]
l. Title 49, U.S.C., Section 303, (formerly known as Section 4(f))
m. Rehabilitation Act of 1973 - 29 U.S.C. 794.
n. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
o. Americans with Disabilities Act of 1990, as amended, (42 U.S.C. § 12101 et seq.), prohibits discrimination on the basis of disability).
p. Age Discrimination Act of 1975 - 42 U.S.C. 6101, et seq.
q. American Indian Religious Freedom Act, P.L. 95-341, as amended.
r. Architectural Barriers Act of 1968 -42 U.S.C. 4151, et seq.[1]
s. Power plant and Industrial Fuel Use Act of 1978 - Section 403- 2 U.S.C. 8373.[1]
t. Contract Work Hours and Safety Standards Act - 40 U.S.C. 327, et seq.[1]
u. Copeland Anti-kickback Act - 18 U.S.C. 874.1
v. National Environmental Policy Act of 1969 - 42 U.S.C. 4321, et seq.[1]
w. Wild and Scenic Rivers Act, P.L. 90-542, as amended.
x. Single Audit Act of 1984 - 31 U.S.C. 7501, et seq.[2]
y. Drug-Free Workplace Act of 1988 - 41 U.S.C. 702 through 706.

z. The Federal Funding Accountability and Transparency Act of 2006, as amended (Pub. L. 109-282, as amended by section 6202 of Pub. L. 110-252).

Executive Orders

a. Executive Order 11246 - Equal Employment Opportunity[1]
b. Executive Order 11990 - Protection of Wetlands
c. Executive Order 11998 – Flood Plain Management
d. Executive Order 12372 - Intergovernmental Review of Federal Programs
e. Executive Order 12699 - Seismic Safety of Federal and Federally Assisted New Building Construction[1]
f. Executive Order 12898 - Environmental Justice

Federal Regulations

a. 2 CFR Part 180 - OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement).
b. 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. [OMB Circular A-87 Cost Principles Applicable to Grants and Contracts with State and Local Governments, and OMB Circular A-133 - Audits of States, Local Governments, and Non-Profit Organizations].[4, 5, 6]
c. 2 CFR Part 1200 – Nonprocurement Suspension and Debarment
d. 14 CFR Part 13 - Investigative and Enforcement Procedures14 CFR Part 16 - Rules of Practice For Federally Assisted Airport Enforcement Proceedings.
e. 14 CFR Part 150 - Airport noise compatibility planning.
f. 28 CFR Part 35- Discrimination on the Basis of Disability in State and Local Government Services.
g. 28 CFR § 50.3 - U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964.
h. 29 CFR Part 1 - Procedures for predetermination of wage rates.[1]
i. 29 CFR Part 3 - Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States.[1]
j. 29 CFR Part 5 - Labor standards provisions applicable to contracts covering federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act).[1]
k. 41 CFR Part 60 - Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements).[1]
l. 49 CFR Part 18 - Uniform administrative requirements for grants and cooperative agreements to state and local governments.[3]
m. 49 CFR Part 20 - New restrictions on lobbying.
n. 49 CFR Part 21 – Nondiscrimination in federally-assisted programs of the Department of Transportation - effectuation of Title VI of the Civil Rights Act of 1964.
o. 49 CFR Part 23 - Participation by Disadvantage Business Enterprise in Airport Concessions.

p. 49 CFR Part 24 – Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs.[1] [2]
q. 49 CFR Part 26 – Participation by Disadvantaged Business Enterprises in Department of Transportation Programs.
r. 49 CFR Part 27 – Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance.[1]
s. 49 CFR Part 28 – Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities conducted by the Department of Transportation.
t. 49 CFR Part 30 - Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors.
u. 49 CFR Part 32 – Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)
v. 49 CFR Part 37 – Transportation Services for Individuals with Disabilities (ADA).
w. 49 CFR Part 41 - Seismic safety of Federal and federally assisted or regulated new building construction.

Specific Assurances

Specific assurances required to be included in grant agreements by any of the above laws, regulations or circulars are incorporated by reference in this grant agreement.

Footnotes to Assurance C.1.

[1] These laws do not apply to airport planning sponsors.

[2] These laws do not apply to private sponsors.

[3] 49 CFR Part 18 and 2 CFR Part 200 contain requirements for State and Local Governments receiving Federal assistance. Any requirement levied upon State and Local Governments by this regulation and circular shall also be applicable to private sponsors receiving Federal assistance under Title 49, United States Code.

[4] On December 26, 2013 at 78 FR 78590, the Office of Management and Budget (OMB) issued the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards in 2 CFR Part 200. 2 CFR Part 200 replaces and combines the former Uniform Administrative Requirements for Grants (OMB Circular A-102 and Circular A-110 or 2 CFR Part 215 or Circular) as well as the Cost Principles (Circulars A-21 or 2 CFR part 220; Circular A-87 or 2 CFR part 225; and A-122, 2 CFR part 230). Additionally it replaces Circular A-133 guidance on the Single Annual Audit. In accordance with 2 CFR section 200.110, the standards set forth in Part 200 which affect administration of Federal awards issued by Federal agencies become effective once implemented by Federal agencies or when any future amendment to this Part becomes final. Federal agencies, including the Department of Transportation, must implement the policies and procedures applicable to Federal awards by promulgating a regulation to be effective by December 26, 2014 unless different provisions are required by statute or approved by OMB.

[5] Cost principles established in 2 CFR part 200 subpart E must be used as guidelines for determining the eligibility of specific types of expenses.

[6] Audit requirements established in 2 CFR part 200 subpart F are the guidelines for audits.

2. **Responsibility and Authority of the Sponsor.**

   a. Public Agency Sponsor:

   It has legal authority to apply for this grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.

   b. Private Sponsor:

   It has legal authority to apply for this grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this grant agreement. It shall designate an official representative and shall in writing direct and authorize that person to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

3. **Sponsor Fund Availability.**

   It has sufficient funds available for that portion of the project costs which are not to be paid by the United States. It has sufficient funds available to assure operation and maintenance of items funded under this grant agreement which it will own or control.

4. **Good Title.**

   a. It, a public agency or the Federal government, holds good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired.

   b. For noise compatibility program projects to be carried out on the property of the sponsor, it holds good title satisfactory to the Secretary to that portion of the property upon which Federal funds will be expended or will give assurance to the Secretary that good title will be obtained.

5. **Preserving Rights and Powers.**

   a. It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in this grant agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. This shall be done in a manner acceptable to the Secretary.

b. It will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A to this application or, for a noise compatibility program project, that portion of the property upon which Federal funds have been expended, for the duration of the terms, conditions, and assurances in this grant agreement without approval by the Secretary. If the transferee is found by the Secretary to be eligible under Title 49, United States Code, to assume the obligations of this grant agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this grant agreement.

c. For all noise compatibility program projects which are to be carried out by another unit of local government or are on property owned by a unit of local government other than the sponsor, it will enter into an agreement with that government. Except as otherwise specified by the Secretary, that agreement shall obligate that government to the same terms, conditions, and assurances that would be applicable to it if it applied directly to the FAA for a grant to undertake the noise compatibility program project. That agreement and changes thereto must be satisfactory to the Secretary. It will take steps to enforce this agreement against the local government if there is substantial non-compliance with the terms of the agreement.

d. For noise compatibility program projects to be carried out on privately owned property, it will enter into an agreement with the owner of that property which includes provisions specified by the Secretary. It will take steps to enforce this agreement against the property owner whenever there is substantial non-compliance with the terms of the agreement.

e. If the sponsor is a private sponsor, it will take steps satisfactory to the Secretary to ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.

f. If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will reserve sufficient rights and authority to insure that the airport will be operated and maintained in accordance Title 49, United States Code, the regulations and the terms, conditions and assurances in this grant agreement and shall insure that such arrangement also requires compliance therewith.

g. Sponsors of commercial service airports will not permit or enter into any arrangement that results in permission for the owner or tenant of a property used as a residence, or zoned for residential use, to taxi an aircraft between that property and any location on airport. Sponsors of general aviation airports entering into any arrangement that results in permission for the owner of residential real property adjacent to or near the airport must comply with the requirements of Sec. 136 of Public Law 112-95 and the sponsor assurances.

6. **Consistency with Local Plans.**

   The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.

7. **Consideration of Local Interest.**

   It has given fair consideration to the interest of communities in or near where the project may be located.

8. **Consultation with Users.**

   In making a decision to undertake any airport development project under Title 49, United States Code, it has undertaken reasonable consultations with affected parties using the airport at which project is proposed.

9. **Public Hearings.**

   In projects involving the location of an airport, an airport runway, or a major runway extension, it has afforded the opportunity for public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the Secretary, submit a copy of the transcript of such hearings to the Secretary. Further, for such projects, it has on its management board either voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.

10. **Metropolitan Planning Organization.**

    In projects involving the location of an airport, an airport runway, or a major runway extension at a medium or large hub airport, the sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted.

11. **Pavement Preventive Maintenance.**

    With respect to a project approved after January 1, 1995, for the replacement or reconstruction of pavement at the airport, it assures or certifies that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with Federal financial assistance at the airport. It will provide such reports on pavement condition and pavement management programs as the Secretary determines may be useful.

12. **Terminal Development Prerequisites.**

    For projects which include terminal development at a public use airport, as defined in Title 49, it has, on the date of submittal of the project grant application, all the safety equipment required for certification of such airport under section 44706 of Title 49, United States Code, and all the security equipment required by rule or regulation, and

has provided for access to the passenger enplaning and deplaning area of such airport to passengers enplaning and deplaning from aircraft other than air carrier aircraft.

13. **Accounting System, Audit, and Record Keeping Requirements.**

    a. It shall keep all project accounts and records which fully disclose the amount and disposition by the recipient of the proceeds of this grant, the total cost of the project in connection with which this grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The accounts and records shall be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984.

    b. It shall make available to the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to this grant. The Secretary may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which this grant was given or used, it shall file a certified copy of such audit with the Comptroller General of the United States not later than six (6) months following the close of the fiscal year for which the audit was made.

14. **Minimum Wage Rates.**

    It shall include, in all contracts in excess of $2,000 for work on any projects funded under this grant agreement which involve labor, provisions establishing minimum rates of wages, to be predetermined by the Secretary of Labor, in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work.

15. **Veteran's Preference.**

    It shall include in all contracts for work on any project funded under this grant agreement which involve labor, such provisions as are necessary to insure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Section 47112 of Title 49, United States Code. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

16. **Conformity to Plans and Specifications.**

    It will execute the project subject to plans, specifications, and schedules approved by the Secretary. Such plans, specifications, and schedules shall be submitted to the Secretary prior to commencement of site preparation, construction, or other performance under this grant agreement, and, upon approval of the Secretary, shall be incorporated into this grant agreement. Any modification to the approved plans,

specifications, and schedules shall also be subject to approval of the Secretary, and incorporated into this grant agreement.

17. **Construction Inspection and Approval.**

    It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the Secretary for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the Secretary and such work shall be in accordance with regulations and procedures prescribed by the Secretary. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the Secretary shall deem necessary.

18. **Planning Projects.**

    In carrying out planning projects:

    a. It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved.

    b. It will furnish the Secretary with such periodic reports as required pertaining to the planning project and planning work activities.

    c. It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the United States.

    d. It will make such material available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.

    e. It will give the Secretary unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.

    f. It will grant the Secretary the right to disapprove the sponsor's employment of specific consultants and their subcontractors to do all or any part of this project as well as the right to disapprove the proposed scope and cost of professional services.

    g. It will grant the Secretary the right to disapprove the use of the sponsor's employees to do all or any part of the project.

    h. It understands and agrees that the Secretary's approval of this project grant or the Secretary's approval of any planning material developed as part of this grant does not constitute or imply any assurance or commitment on the part of the Secretary to approve any pending or future application for a Federal airport grant.

19. **Operation and Maintenance.**

    a. The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal,

state and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Secretary. In furtherance of this assurance, the sponsor will have in effect arrangements for-

1) Operating the airport's aeronautical facilities whenever required;

2) Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and

3) Promptly notifying airmen of any condition affecting aeronautical use of the airport. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.

b. It will suitably operate and maintain noise compatibility program items that it owns or controls upon which Federal funds have been expended.

20. **Hazard Removal and Mitigation.**

It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

21. **Compatible Land Use.**

It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

22. **Economic Nondiscrimination.**

a. It will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

b. In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or

to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to-

1) furnish said services on a reasonable, and not unjustly discriminatory, basis to all users thereof, and

2) charge reasonable, and not unjustly discriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.

c. Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.

d. Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.

e. Each air carrier using such airport (whether as a tenant, non-tenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable classifications such as tenants or non-tenants and signatory carriers and non-signatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld by any airport provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.

f. It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees [including, but not limited to maintenance, repair, and fueling] that it may choose to perform.

g. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.

h. The sponsor may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.

i. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

23. **Exclusive Rights.**

It will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. For purposes of this paragraph, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if both of the following apply:

a. It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services, and

b. If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport. It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities, including, but not limited to charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations, aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity now existing at such an airport before the grant of any assistance under Title 49, United States Code.

24. **Fee and Rental Structure.**

It will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection. No part of the Federal share of an airport development, airport planning or noise compatibility project for which a grant is made under Title 49, United States Code, the Airport and Airway Improvement Act of 1982, the Federal Airport Act or the Airport and Airway Development Act of 1970 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

25. **Airport Revenues.**

a. All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. The following exceptions apply to this paragraph:

1) If covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or

operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.

2) If the Secretary approves the sale of a privately owned airport to a public sponsor and provides funding for any portion of the public sponsor's acquisition of land, this limitation on the use of all revenues generated by the sale shall not apply to certain proceeds from the sale. This is conditioned on repayment to the Secretary by the private owner of an amount equal to the remaining unamortized portion (amortized over a 20-year period) of any airport improvement grant made to the private owner for any purpose other than land acquisition on or after October 1, 1996, plus an amount equal to the federal share of the current fair market value of any land acquired with an airport improvement grant made to that airport on or after October 1, 1996.

3) Certain revenue derived from or generated by mineral extraction, production, lease, or other means at a general aviation airport (as defined at Section 47102 of title 49 United States Code), if the FAA determines the airport sponsor meets the requirements set forth in Sec. 813 of Public Law 112-95.

b. As part of the annual audit required under the Single Audit Act of 1984, the sponsor will direct that the audit will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes in paragraph (a), and indicating whether funds paid or transferred to the owner or operator are paid or transferred in a manner consistent with Title 49, United States Code and any other applicable provision of law, including any regulation promulgated by the Secretary or Administrator.

c. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with the provisions of Section 47107 of Title 49, United States Code.

26. **Reports and Inspections.**

It will:

a. submit to the Secretary such annual or special financial and operations reports as the Secretary may reasonably request and make such reports available to the public; make available to the public at reasonable times and places a report of the airport budget in a format prescribed by the Secretary;

b. for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use agreements, regulations and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request;

c. for noise compatibility program projects, make records and documents relating to the project and continued compliance with the terms, conditions, and assurances of this grant agreement including deeds, leases, agreements, regulations, and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request; and

d. in a format and time prescribed by the Secretary, provide to the Secretary and make available to the public following each of its fiscal years, an annual report listing in detail:

1) all amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and

2) all services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

27. **Use by Government Aircraft.**

It will make available all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft to the United States for use by Government aircraft in common with other aircraft at all times without charge, except, if the use by Government aircraft is substantial, charge may be made for a reasonable share, proportional to such use, for the cost of operating and maintaining the facilities used. Unless otherwise determined by the Secretary, or otherwise agreed to by the sponsor and the using agency, substantial use of an airport by Government aircraft will be considered to exist when operations of such aircraft are in excess of those which, in the opinion of the Secretary, would unduly interfere with use of the landing areas by other authorized aircraft, or during any calendar month that –

a. Five (5) or more Government aircraft are regularly based at the airport or on land adjacent thereto; or

b. The total number of movements (counting each landing as a movement) of Government aircraft is 300 or more, or the gross accumulative weight of Government aircraft using the airport (the total movement of Government aircraft multiplied by gross weights of such aircraft) is in excess of five million pounds.

28. **Land for Federal Facilities.**

It will furnish without cost to the Federal Government for use in connection with any air traffic control or air navigation activities, or weather-reporting and communication activities related to air traffic control, any areas of land or water, or estate therein, or rights in buildings of the sponsor as the Secretary considers necessary or desirable for construction, operation, and maintenance at Federal expense of space or facilities for such purposes. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the Secretary.

29. **Airport Layout Plan.**

a. It will keep up to date at all times an airport layout plan of the airport showing

1) boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the sponsor for airport purposes and proposed additions thereto;

2) the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and

roads), including all proposed extensions and reductions of existing airport facilities;

3) the location of all existing and proposed nonaviation areas and of all existing improvements thereon; and

4) all proposed and existing access points used to taxi aircraft across the airport's property boundary. Such airport layout plans and each amendment, revision, or modification thereof, shall be subject to the approval of the Secretary which approval shall be evidenced by the signature of a duly authorized representative of the Secretary on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations in the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the Secretary and which might, in the opinion of the Secretary, adversely affect the safety, utility or efficiency of the airport.

b. If a change or alteration in the airport or the facilities is made which the Secretary determines adversely affects the safety, utility, or efficiency of any federally owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the Secretary, the owner or operator will, if requested, by the Secretary (1) eliminate such adverse effect in a manner approved by the Secretary; or (2) bear all costs of relocating such property (or replacement thereof) to a site acceptable to the Secretary and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities except in the case of a relocation or replacement of an existing airport facility due to a change in the Secretary's design standards beyond the control of the airport sponsor.

30. **Civil Rights.**

It will promptly take any measures necessary to ensure that no person in the United States shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any activity conducted with, or benefiting from, funds received from this grant.

a. Using the definitions of activity, facility and program as found and defined in §§ 21.23 (b) and 21.23 (e) of 49 CFR § 21, the sponsor will facilitate all programs, operate all facilities, or conduct all programs in compliance with all non-discrimination requirements imposed by, or pursuant to these assurances.

b. Applicability

1) Programs and Activities. If the sponsor has received a grant (or other federal assistance) for any of the sponsor's program or activities, these requirements extend to all of the sponsor's programs and activities.

2) Facilities. Where it receives a grant or other federal financial assistance to construct, expand, renovate, remodel, alter or acquire a facility, or part of a facility, the assurance extends to the entire facility and facilities operated in connection therewith.

3) Real Property. Where the sponsor receives a grant or other Federal financial assistance in the form of, or for the acquisition of real property or an interest in real property, the assurance will extend to rights to space on, over, or under such property.

c. Duration.

The sponsor agrees that it is obligated to this assurance for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the assurance obligates the sponsor, or any transferee for the longer of the following periods:

1) So long as the airport is used as an airport, or for another purpose involving the provision of similar services or benefits; or

2) So long as the sponsor retains ownership or possession of the property.

d. Required Solicitation Language. It will include the following notification in all solicitations for bids, Requests For Proposals for work, or material under this grant agreement and in all proposals for agreements, including airport concessions, regardless of funding source:

"The **(Name of Sponsor)**, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises and airport concession disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award."

e. Required Contract Provisions.

1) It will insert the non-discrimination contract clauses requiring compliance with the acts and regulations relative to non-discrimination in Federally-assisted programs of the DOT, and incorporating the acts and regulations into the contracts by reference in every contract or agreement subject to the non-discrimination in Federally-assisted programs of the DOT acts and regulations.

2) It will include a list of the pertinent non-discrimination authorities in every contract that is subject to the non-discrimination acts and regulations.

3) It will insert non-discrimination contract clauses as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a sponsor.

4) It will insert non-discrimination contract clauses prohibiting discrimination on the basis of race, color, national origin, creed, sex, age, or handicap as a

covenant running with the land, in any future deeds, leases, license, permits, or similar instruments entered into by the sponsor with other parties:

a) For the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and

b) For the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.

f. It will provide for such methods of administration for the program as are found by the Secretary to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the acts, the regulations, and this assurance.

g. It agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the acts, the regulations, and this assurance.

31. **Disposal of Land.**

a. For land purchased under a grant for airport noise compatibility purposes, including land serving as a noise buffer, it will dispose of the land, when the land is no longer needed for such purposes, at fair market value, at the earliest practicable time. That portion of the proceeds of such disposition which is proportionate to the United States' share of acquisition of such land will be, at the discretion of the Secretary, (1) reinvested in another project at the airport, or (2) transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order, (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund. If land acquired under a grant for noise compatibility purposes is leased at fair market value and consistent with noise buffering purposes, the lease will not be considered a disposal of the land. Revenues derived from such a lease may be used for an approved airport development project that would otherwise be eligible for grant funding or any permitted use of airport revenue.

b. For land purchased under a grant for airport development purposes (other than noise compatibility), it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the Secretary an amount equal to the United States' proportionate share of the fair market value of the land. That portion of the proceeds of such disposition which is proportionate to the United States' share of the cost of acquisition of such land will, (1) upon application to the Secretary, be reinvested or transferred to another

eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order: (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund.

c. Land shall be considered to be needed for airport purposes under this assurance if (1) it may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land, and (2) the revenue from interim uses of such land contributes to the financial self-sufficiency of the airport. Further, land purchased with a grant received by an airport operator or owner before December 31, 1987, will be considered to be needed for airport purposes if the Secretary or Federal agency making such grant before December 31, 1987, was notified by the operator or owner of the uses of such land, did not object to such use, and the land continues to be used for that purpose, such use having commenced no later than December 15, 1989.

d. Disposition of such land under (a) (b) or (c) will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.

32. **Engineering and Design Services.**

It will award each contract, or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services with respect to the project in the same manner as a contract for architectural and engineering services is negotiated under Title IX of the Federal Property and Administrative Services Act of 1949 or an equivalent qualifications-based requirement prescribed for or by the sponsor of the airport.

33. **Foreign Market Restrictions.**

It will not allow funds provided under this grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

34. **Policies, Standards, and Specifications.**

It will carry out the project in accordance with policies, standards, and specifications approved by the Secretary including but not limited to the advisory circulars listed in the Current FAA Advisory Circulars for AIP projects, dated _____ (the latest approved version as of this grant offer) and included in this grant, and in accordance

with applicable state policies, standards, and specifications approved by the Secretary.

35. **Relocation and Real Property Acquisition.**

    a. It will be guided in acquiring real property, to the greatest extent practicable under State law, by the land acquisition policies in Subpart B of 49 CFR Part 24 and will pay or reimburse property owners for necessary expenses as specified in Subpart B.
    b. It will provide a relocation assistance program offering the services described in Subpart C and fair and reasonable relocation payments and assistance to displaced persons as required in Subpart D and E of 49 CFR Part 24.
    c. It will make available within a reasonable period of time prior to displacement, comparable replacement dwellings to displaced persons in accordance with Subpart E of 49 CFR Part 24.

36. **Access By Intercity Buses.**

    The airport owner or operator will permit, to the maximum extent practicable, intercity buses or other modes of transportation to have access to the airport; however, it has no obligation to fund special facilities for intercity buses or for other modes of transportation.

37. **Disadvantaged Business Enterprises.**

    The sponsor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract covered by 49 CFR Part 26, or in the award and performance of any concession activity contract covered by 49 CFR Part 23. In addition, the sponsor shall not discriminate on the basis of race, color, national origin or sex in the administration of its DBE and ACDBE programs or the requirements of 49 CFR Parts 23 and 26. The sponsor shall take all necessary and reasonable steps under 49 CFR Parts 23 and 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts, and/or concession contracts. The sponsor's DBE and ACDBE programs, as required by 49 CFR Parts 26 and 23, and as approved by DOT, are incorporated by reference in this agreement. Implementation of these programs is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the sponsor of its failure to carry out its approved program, the Department may impose sanctions as provided for under Parts 26 and 23 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1936 (31 U.S.C. 3801).

38. **Hangar Construction.**

    If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose.

39. **Competitive Access.**

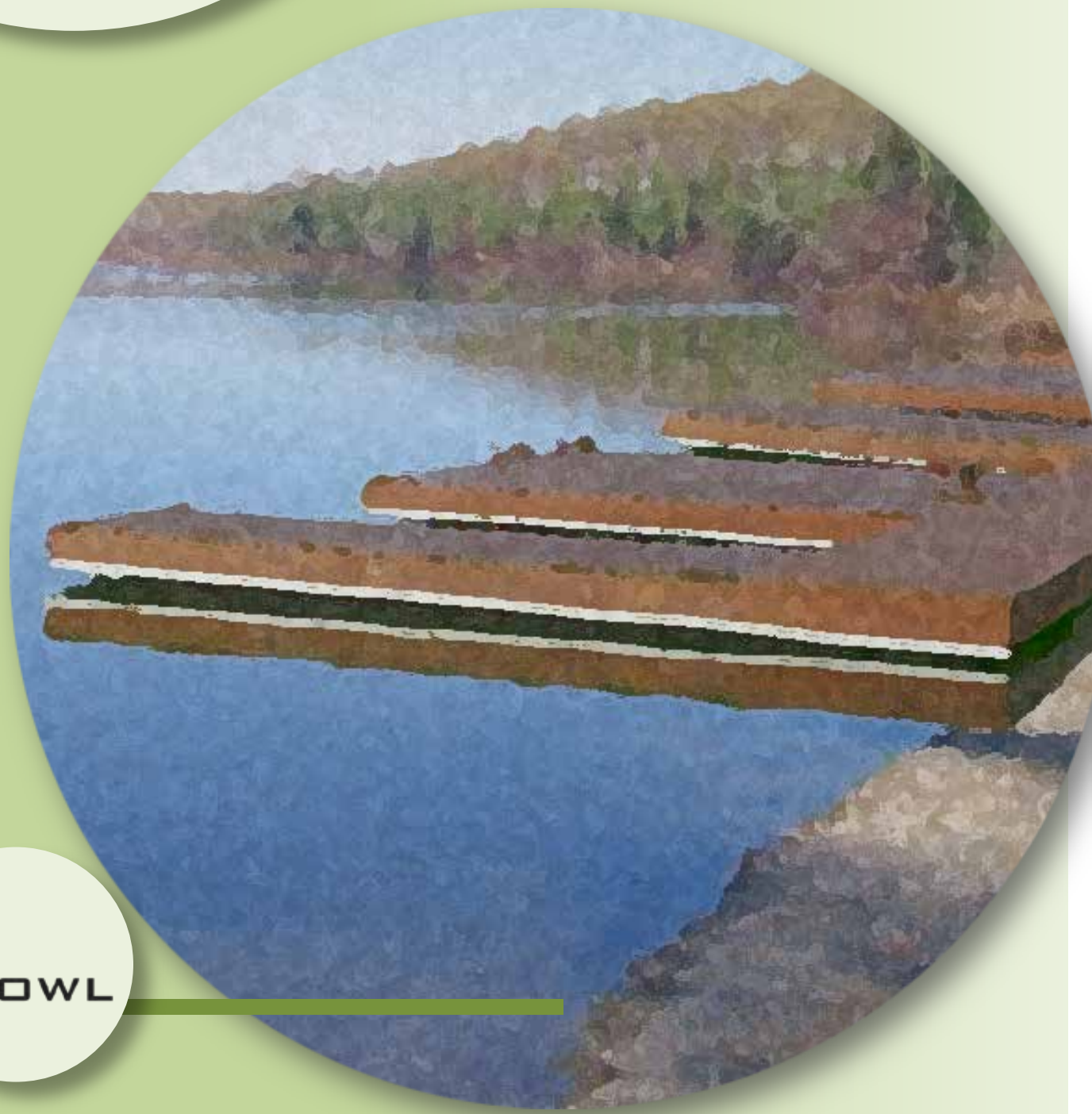
a. If the airport owner or operator of a medium or large hub airport (as defined in section 47102 of title 49, U.S.C.) has been unable to accommodate one or more requests by an air carrier for access to gates or other facilities at that airport in order to allow the air carrier to provide service to the airport or to expand service at the airport, the airport owner or operator shall transmit a report to the Secretary that-

   1) Describes the requests;

   2) Provides an explanation as to why the requests could not be accommodated; and

   3) Provides a time frame within which, if any, the airport will be able to accommodate the requests.

b. Such report shall be due on either February 1 or August 1 of each year if the airport has been unable to accommodate the request(s) in the six month period prior to the applicable due date.



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