



# Economic Contributions of Matanuska-Susitna Borough Airports

*Prepared for*  
**The Matanuska-Susitna  
Borough**

January 2016



Wisdom • Trust • Relevance • Innovation

**PROFESSIONAL CONSULTING SERVICES IN APPLIED ECONOMIC ANALYSIS**

**Principals:**

Patrick Burden, M.S. – Chairman  
Marcus L. Hartley, M.S. – President  
Jonathan King, M.S. – Vice President  
Michael Fisher, MBA – Principal  
Diane Steele – Office Manager

**Consultants:**

Leah Cuyno, Ph.D.                      Don Schug, Ph.D.  
Gary Eaton, M.S.                      David Weiss, M.S.  
Michelle Humphrey, B.S.              Katharine Wellman, Ph.D.  
Cal Kerr, MBA

**Administrative Staff:**

Terri McCoy, B.A. – Editor



880 H Street, Suite 210  
Anchorage, Alaska 99501  
Phone: 907.274-5600  
Fax: 907.274-5601

1455 NW Leary Way, Suite 400  
Seattle, WA 98107  
Phone: 206.747.8475  
Email: [mail@norecon.com](mailto:mail@norecon.com)

## Preparers

Team Member	Project Role
Jonathan King	Project Manager
David Weiss	Lead Analyst
Terri McCoy	Editor

*Please cite as:* Northern Economics, Inc. *Economic Contributions of Matanuska-Susitna Borough Airports.* Prepared for the Matanuska-Susitna Borough. January 2016.

# Contents

Section	Page
<b>Abbreviations</b> .....	<b>iii</b>
<b>Executive Summary</b> .....	<b>ES-1</b>
<b>1 Introduction and Study Purpose</b> .....	<b>1</b>
1.1 Report Structure .....	1
1.2 Acknowledgements .....	1
<b>2 On-Airport Aviation Activity in the MSB</b> .....	<b>2</b>
2.1 Profiles of MSB Airports .....	2
2.2 On-Airport Businesses .....	5
2.3 Non-Profiled MSB Airports .....	6
2.4 Population Growth .....	6
<b>3 Analytical Methods</b> .....	<b>8</b>
3.1 Estimates of Direct and Indirect Employment and Expenditures .....	8
3.1.1 IMPLAN Input-Output Analysis.....	8
3.1.2 Alaska Aviation System Plan Economic Activity Study.....	9
3.1.3 ADOT&PF Leaseholder Database and DCCED Business License Database .....	10
3.1.4 Interviews (ADOT&PF and Airport Managers) .....	10
3.1.5 Capital and Operating Expenditures.....	10
3.2 Bureau of Transportation Statistics Data .....	10
<b>4 Economic Contributions of MSB Airports</b> .....	<b>11</b>
4.1 Direct and Indirect Economic Contributions of On-Airport Activity .....	11
4.1.1 Employment and Expenditures by Airport Leaseholders and Airport Management and Operations .....	11
4.1.2 Estimates of Total On-Airport Related Employment and Expenditures .....	12
4.2 Trends in MSB Aviation .....	13
4.3 BTS Data .....	13
<b>5 References</b> .....	<b>15</b>

<b>Table</b>	<b>Page</b>
Table ES-1. Estimated Direct, Indirect, and Induced Jobs, Labor Income, and Output Generated by Eight Profiled MSB Airports, 2014 .....	ES-2
Table 1. Estimates of Based Aircraft, 2014 .....	4
Table 2. Operation Types by Airport, 2014 .....	5
Table 3. Total Leases by Economic Category and Airport .....	5
Table 4. Number of Aircraft at Non-Profiled MSB Aviation Facilities, 2014 .....	6
Table 5. Population Change in Profiled MSB Airport Communities, 2000 to 2014 .....	7
Table 6. Jobs and Wages Provided by Leaseholders and Non-Leaseholder Government Entities at Profiled MSB Airports, 2014.....	11
Table 7. Geographic Distribution of Leaseholder Direct Capital & Operating Expenditures at Profiled MSB Airports, 2014 .....	12
Table 8. Profiled MSB Airports' Direct, Indirect, and Induced In-State Economic Effects, 2014 .....	12
Table 9. BTS Passenger, Mail, and Freight Data, 2014 .....	14

<b>Figure</b>	<b>Page</b>
Figure 1. Profiled Airports of the Matanuska Susitna Borough .....	2
Figure 2. Expenditures Moving through the Economy .....	9

## 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**

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

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

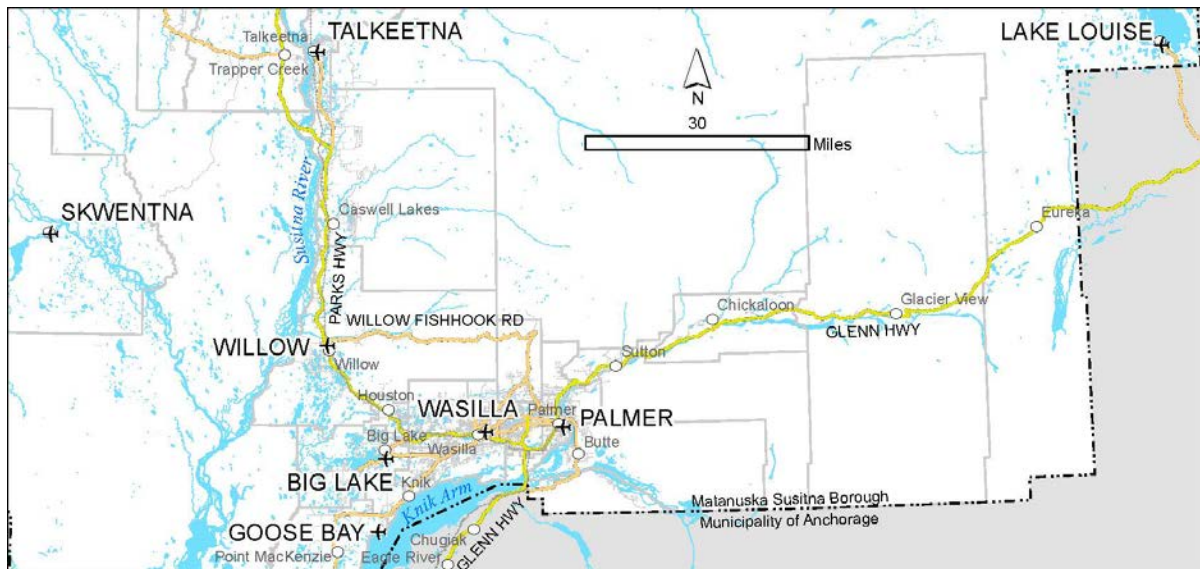
## 1.2 Acknowledgements

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**

Airports	LID	Aircraft Based at Airport					Total
		Single	Multi	Ultralights	Helicopter	Gliders	
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
<b>Total, Eight Airports</b>		<b>275</b>	<b>19</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>308</b>

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	UUC	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. 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
<b>Total, All Airports</b>	<b>20</b>	<b>15</b>	<b>11</b>	<b>12</b>	<b>58</b>

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 public-use facilities (482).<sup>1</sup> Moreover, four times as many helicopters are based at private facilities (32) as public facilities.<sup>2</sup>

**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
<b>Private Use Facilities</b>					
Airports	119	437	9	28	4
Heliports	6	1	0	4	0
Seaplane Bases	16	77	0	0	0
<b>Total, Private Use Facilities</b>	<b>141</b>	<b>515</b>	<b>9</b>	<b>32</b>	<b>4</b>
<b>Public Use Facilities</b>					
Airports	4	43	1	0	0
Seaplane Bases	17	164	0	2	0
<b>Total, Public Use Facilities</b>	<b>21</b>	<b>207</b>	<b>1</b>	<b>2</b>	<b>0</b>
<b>Total, Private and Public Facilities</b>	<b>162</b>	<b>722</b>	<b>10</b>	<b>34</b>	<b>4</b>

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

<sup>1</sup> This total includes 275 single engine aircraft based at profiled public-use airports and 207 aircraft based at non-profiled public-use airports.

<sup>2</sup> Two helicopters are based at non-profiled public-use facilities, while six helicopters are based at profiled public-use facilities.

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
<b>Total</b>	<b>15,231</b>	<b>20,179</b>	<b>20,876</b>	<b>2.3</b>	<b>0.9</b>

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.

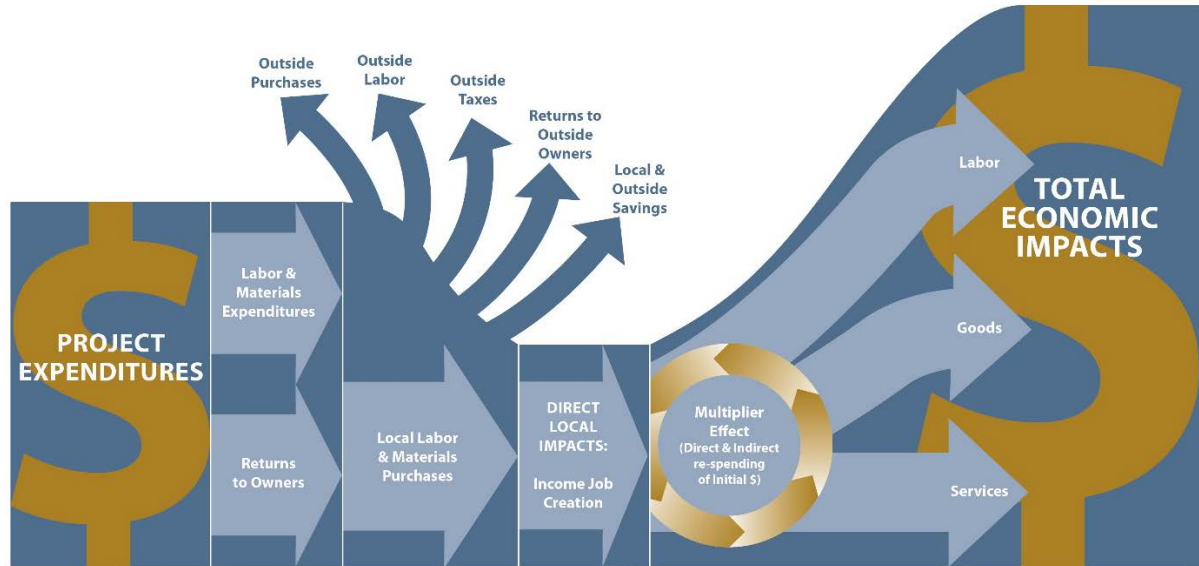
Northern Economics first utilized IMPLAN to estimate direct, indirect, and induced employment and spending among airport leaseholders for the March 2009 study entitled *The Economic Contribution of the Aviation Industry to Alaska's Economy*, conducted for ADOT&PF. The purpose of this component of the 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
<b>All Employees</b>	<b>257</b>	<b>171</b>	<b>428</b>	<b>19.2</b>

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.<sup>3</sup> 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.

<sup>3</sup> 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**

Category	In-MSB	Other Alaska	Total Alaska	Outside Alaska	Total
	(\$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
<b>Total</b>	<b>8.8</b>	<b>3.0</b>	<b>11.8</b>	<b>1.9</b>	<b>13.7</b>

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**

Category	Number of Jobs		Labor Income		Output	
	In-MSB	Other Alaska	(\$Millions)			
			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
<b>Total In-State Effect</b>	<b>380</b>		<b>21.2</b>		<b>17.5</b>	

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).<sup>4</sup> 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,

---

<sup>4</sup> 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	–	–	–	–	–	–
<b>Skwentna</b>	<b>51</b>	<b>4,108</b>	<b>0</b>	<b>65</b>	<b>25,633</b>	<b>10,950</b>
Willow	–	–	–	–	–	–
<b>Palmer</b>	<b>0</b>	<b>1,700</b>	<b>0</b>	<b>2</b>	<b>4,277</b>	<b>0</b>
Talkeetna	–	–	–	–	–	–
Goose Bay	–	–	–	–	–	–
<b>Wasilla</b>	<b>35</b>	–	–	<b>28</b>	–	–

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.

## 5 References

Airnav.com. Airport Information. Available at <http://airnav.com/airports/>. Accessed October 2015.

Alaska Department of Commerce, Community, and Economic Development. Business License Database. Available at <https://www.commerce.alaska.gov/cbp/Main/CBPLSearch.aspx?mode=BL>. Accessed October 2015.

Alaska Department of Labor and Workforce Development. Population Estimates, 2010-2014. Available at <http://laborstats.alaska.gov/pop/popest.htm>. Accessed November 2015.

Federal Aviation Administration. Airport Data and Contact Information for Matanuska-Susitna Borough as of October 15, 2015. Available at [http://www.faa.gov/airports/airport\\_safety/airportdata\\_5010/menu/#datadownloads](http://www.faa.gov/airports/airport_safety/airportdata_5010/menu/#datadownloads). Accessed November 2015a.

Federal Aviation Administration. Airport Improvement Program (AIP). Available at <http://www.faa.gov/airports/aip/>. Accessed September 2015b.

Northern Economics, Inc. Economic and Community Contributions of Selected Alaska Airports: 12 Case Studies. Prepared for the Alaska Department of Transportation and Public Facilities. October 2011.

U.S. Bureau of Transportation Statistics. 2015. T-100 Domestic Market On-Flight Market Passengers Enplaned, Freight Enplaned, and Mail Enplaned. February 2015. Available at [http://www.transtats.bts.gov/Fields.asp?Table\\_ID=258](http://www.transtats.bts.gov/Fields.asp?Table_ID=258). Accessed July 2015.

U.S. Census Bureau. Population Total, 2000 and 2010. Available at <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed October 2015.