# ST. MARY'S AIRPORT PLANNING AND RSA PRACTICABILITY STUDY

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# **AVIATION ACTIVITY FORECAST**

**Prepared For:** 



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## **Table of Contents**

1.0	Introduction	n	1
2.0	Population . 2.1 Demo	ographic Characteristics	3 4
3.0	Geographic 3.1 Air Fr 3.2 River	<b>c Attributes</b> reight Hub <sup>c</sup> Freight Hub	<b>4</b> 5 7
4.0	Economic C	Characteristics	7
5.0	Aviation Ac	tivity	8
6.0	Aircraft Ope	erations	9
7.0	Passenger	Enplanements 1	1
8.0	Air Cargo 8.1 Bypa 8.2 Freigh	1 ss mail ht	13 15
9.0	Factors Affe           9.1         Jet Al           9.2         Aging           9.3         Runw           9.4         Runw           9.5         Foreo           9.6         Alterr           9.7         Comp	ecting Operations	16 17 17 19 19 22 24
10.0	Critical Airo           10.1         Requ           10.1.1         Minin           10.1.2         Repo           10.2         Requ	craft, AAC, and ADG	26 27 27 27 30
11.0	Conclusion		32
Apper	ndix A: Inver	ntory and Description of Existing Facilities	1
Apper	ndix B: Aviat	tion System Plan Resources	1
Apper	ndix C: Air C	arrier/Airport User Interviews and Phone Logs	1
Apper	ndix D: Air C	arrier/Airport User Survey Responses	1
Apper	ndix E: Popu	Ilation and Socioeconomic Information	1
Apper	ndix F: Detai	iled Aviation Activity Tables	1
Apper	ndix G: Deta	iled Aviation Forecasts	1

# Figures

Figure 1	: Project Location	1
Figure 2	: 2017 Bypass Mail Volume to and from St. Mary's Airport	5
Figure 3	: Freight Leaving St. Mary's	16
Figure 3	: Runway 17/35 length based on AC 150/5324-4B Figure 3.1 90% useful	
	load	29
Figure 4	Runway 6/24 Required Length based on AC150/5325-4B Figure 2-1	31

# Tables

Table 1: Historical and Projected Population Data, St. Mary's, Alaska	4
Table 2: Airports Within 100 Miles of St. Mary's	6
Table 3: Reporting Air Carriers	9
Table 4: Annual Operations by Design Group, 2017	10
Table 5: Destinations for Passengers Leaving St. Mary's	12
Table 6: Historical and Forecast Enplanements, KSM	12
Table 7: St. Mary's Airport Total Mail Summary, 2002-2017	14
Table 8: St. Mary's Annual Freight, 2002-2017	15
Table 9: Possible DC-6 Replacement Aircraft	17
Table 10: KSM Runway Length Requirements For a Selection of Operating	
Aircraft	19
Table 11: Aviation Forecast Gravel Runway	21
Table 12: Aviation Forecast Paved Runway	23
Table 13: Airport Forecast Comparisons (Operations per Year)	24
Table 14: Critical Aircraft	25
Table 15: Critical Aircraft for Planning Purposes	

## Abbreviations

AAC	Aircraft Approach Category
AASP	Alaska Aviation System Plan
AC	Advisory Circular
ACC	Alaska Commercial Company
ADG	Airplane Design Group
ADOLAlaska Dep	partment of Labor and Workforce Development
AF	Aviation Forecast
ALP	Airport Layout Plan
ARC	Airport Reference Code
AVEC	Alaska Village Electric Cooperative
AWOS	Automated Weather Observation System
Boreal	Boreal Fisheries, Inc.
BTS	Bureau of Transportation Statistics
CDP	Census Designated Place
CONUS	Contiguous United States
DMM	Domestic Mail Manual
DOT&PF State of Alaska, Dep	partment of Transportation and Public Facilities
FAA	Federal Aviation Administration
Fishpeople	Fishpeople Seafood
GA	General Aviation
GRA	Grey Relational Analysis
IFR	Instrument Flight Rules
ILS	Instrument Landing System
KSM	St. Mary's Airport
Kwikpak	Kwikpak Fisheries, LLC
Lynden	Lynden Air Cargo
MON	Minimum Operations Network
MTOW	Maximum Takeoff Weight
NAC	Northern Air Cargo
NM	Nautical Miles
NPIAS	National Plan of Integrated Airport Systems
RSA	Runway Safety Area
TAF	Terminal Activity Forecast
TFMSC	Traffic Flow Management System Count
USPS	United States Postal Service
VFR	Visual Flight Rules
VOR	VHF Omnidirectional Range

#### 1.0 Introduction

St. Mary's Airport (KSM) is located approximately 440 miles west of Anchorage and 6 miles west of the City of St. Mary's, as shown on Figure 1. The airport is located on a ridge overlooking the Yukon River.



Figure 1: Project Location

The airport is public and is owned, operated, and maintained by the State of Alaska Department of Transportation and Public Facilities (DOT&PF) Northern Region.

KSM is classified by the Federal Aviation Administration (FAA) as a Non-Hub Primary Commercial Service Airport. The airport is not Part 139 certified. The DOT&PF classifies KSM as a Regional Airport in the Alaska Aviation System Plan (AASP). Twenty eight airports are classified as Regional Airports in the AASP "Mission, Goals, Measures and Classification" report from 2011. These are airports that may not fulfill all National Plan of Integrated Airport Systems (NPIAS) requirements of a hub but "serve as transportation and economic hubs to more than one community. Generally, Regional Airports need to accommodate larger aircraft, to have instrument approaches with low minimums, and to have more landside facilities and services than other public use airports."

The AASP Region Airport designation is based on four criteria:

- KSM is defined in NPIAS as a primary airport,
- KSM is used by Air Carriers as a hub for their operations,
- KSM serves as a United States Postal Service (USPS) hub with more than 2 million pounds of cargo annually, and
- St. Mary's has a health facility.

KSM functions as a regional hub airport for passenger, mail, and freight traffic connecting villages in the Lower Yukon with Bethel and Anchorage. For this forecast the term "hub" refers to the AASP designation recognizing KSM's role within the Alaska Aviation System as well as its operational function serving communities in the Lower Yukon area.

KSM is ranked as the 20<sup>th</sup> busiest commercial airport in Alaska in the 2011 AASP aviation activity forecast. This ranking is based on a combination of commercial aircraft departures, outbound passengers, freight, and mail. The airport is a vital hub for the region and airport upgrades and continued maintenance is necessary to maintain its current function.

KSM has two gravel runways, consisting of:

- Main Runway 17/35: 6,008 feet long and 150 feet wide
- Crosswind Runway 06/24: 1,520 feet long and 60 feet wide

The gravel surfacing on both runways has been depleted, the runway surfaces are heaved and unevenly graded, and the crown is diminished. The surfaces are wet and soft for extended periods during breakup and after rain events. Airport improvements are necessary including: runway, taxiway, and apron resurfacing; Runway Safety Area (RSA) improvements; and replacement of the airfield lighting system. Also, upgrades are necessary to the FAA-owned and maintained approach lighting systems and Automated Weather Observation Systems (AWOS) to improve the reliability of air service into St. Mary's. An airport inventory describing the condition of existing facilities and the needs of the airport is included in Appendix A.

Airport planning and development of design criteria for airport improvements is based on the most demanding aircraft having at least 500 annual operations. Per Advisory Circular (AC) 150/5000-17, this aircraft is designated as the "Critical Aircraft" for the runway. This forecast uses data from the Traffic Flow Management System Count (TFMSC), the Bureau of Transportation Statistics (BTS) T100 domestic air carrier data, and the results of recent air carrier interviews and surveys to estimate commercial aviation activity at KSM for a 20-year planning horizon. This information is used to select a Critical Aircraft for both Runway 17/35 and Runway 06/24. The relevant aviation system plan information referenced in this study is included in Appendix B. Relevant notes and phone logs from air carrier and airport user interviews are included in Appendix C and air carrier and airport user survey responses are included in Appendix D.

Aviation activity at KSM is a mixture of cargo and passenger traffic, with an emphasis on commercial fishing support in the summer. There are seven based aircraft. Local general aviation (GA) activity is primarily limited to between June and August. Aviation activity in general is closely linked to regional commercial fishing activity and by-pass mail volumes. Aircraft activity is the highest during the summer commercial fishing period, resulting in a 15% increase in mail and a 1000% increase in freight leaving KSM.

Only aircraft equipped to operate off of gravel runways can provide service to KSM. There are a range of small passenger aircraft that are able to meet this performance criteria, but large cargo aircraft are generally limited to Boeing 737-200s with gravel kits, Douglas DC-6s, and Lockheed C-130s. Northern Air Cargo (NAC), one of KSM's primary cargo carriers, recently announced that they are unlikely to continue to serve KSM after October 2018 due to an upcoming change in their fleet mix. NAC is removing the gravel kit equipped Boeing 737-200s from their fleet, greatly reducing the lift capacity available at KSM. In order to fill the resulting void in the market, other carriers will need to add flights with Beechcraft Dash 8s, DC-6s, C-130s, and possibly other aircraft to meet the demand.

The last aviation forecast for KSM was completed in 2016 as part of DOT&PF's airport planning for an airport resurfacing project. This report updates DOT&PF's last forecast and evaluates trends of several community indicators, including: population within the Kusilvak and St. Mary's census area; commercial fishing harvest; and historic aviation activity related to mail, freight and passenger traffic. Population trends are taken from the 2016 Alaska Department of Labor and Workforce Development (ADOL) report. Bypass mail, freight, and passenger traffic growth is expected to follow population trends. Appendix E includes population and socioeconomic information for the region.

Based on air carrier feedback (included in Appendices C and D), two forecast scenarios are included in this report. The first scenario forecasts operations for KSM if both runways maintain their current length and gravel surfacing. The second scenario forecasts operations based on a change in fleet mix if both runways maintain their current length but Runway 17/35 is paved. The determination of the critical aircraft is based on the first scenario, as it depicts the existing conditions at KSM.

#### 2.0 Population

The City of St. Mary's was incorporated in 1967. In 1980, the neighboring village of Andreafski was joined with St. Mary's to form a single community. Their cultural identities are still maintained through two federally-recognized tribes: the Algaaciq Tribal Government and the Yuupiit of Andreafski.

St. Mary's lies in the Kusilvak (formerly Wade Hampton) Census Area. The ADOL report "Population Estimates, Places and Other Areas, Cities and Census Designated Places (CDPs), 2010 to 2017", estimates the population of St. Mary's to be 566 in 2017. In April of 2016, ADOL released their report "Alaska Population Projections From 2015 to 2045". That estimates an annual growth rate of 1.5% through 2025. Thereafter, a slight decrease in growth, with an annual growth of 1.4% for 2025-2030 and 1.3% for the following five years, is predicted. Table 1 shows the historical and projected population for St. Mary's. See Appendix E for more detailed population and growth projections.

Year	Population	Annual Growth Rate	Year	Population	Annual Growth Rate
1970	384		2014	552	2.60%
1980	382	-0.05%	2015	563	1.99%
1990	441	1.45%	2016	582	3.37%
2000	500	1.26%	2017	566	-2.75%
2010	507	0.14%	2022	609	1.5%
2011	531	4.73%	2027	656	1.5%
2012	518	-2.45%	2032	703	1.4%
2013	538	3.86%	2037	749	1.3%

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section and Northern Economics, Inc.

Many of the surrounding communities rely on St. Mary's as a hub for mail, freight, and passenger air services. The communities with the largest volumes of pass-through traffic include: Mountain Village (with approximately 811 residents, located 12 air miles from KSM), Pitka's Point (with approximately 131 residents, located 2 miles from KSM), Pilot Station (with approximately 651 residents, located 16 air miles from KSM), Marshall (with approximately 449 residents, located 42 air miles from KSM) and Russian Mission (with approximately 331 residents, located 67 air miles from KSM). Each community has its own federally-recognized tribe consisting of: Asa'carsarmiut Tribe (Mountain Village); Native Village of Pitka's Point (Pitka's Point); Pilot Station Traditional Village (Pilot Station); Native Village of Marshall (Marshall); and Iqurmuit Traditional Council (Russian Mission). See Appendix E for more detailed population information.

Both Mountain Village and Pitka's Point are connected to KSM via gravel roads. The road to Mountain Village is not regularly maintained in the winter.

#### 2.1 Demographic Characteristics

The US Census shows that approximately 92 percent of people living in St. Mary's are Alaska Natives and eleven percent of the population is Caucasian. The average age of a St. Mary's resident is 26.3 years old. The State of Alaska Department of Education Report Card for St. Mary's School show that 216 students were enrolled in grades Pre-Kindergarten to 12<sup>th</sup> grade in 2016-2017.

Economic activity in the lower Yukon River communities is highly seasonal and is synchronized with river ice break-up beginning in June and lasting until freeze-up in October. Subsistence and commercial fishing of Yukon River salmon runs are the primary economic activities of the region. The area's communities are often described as having mixed cash and subsistence economies, with wage employment split evenly between the public and private sectors. See Appendix E for detailed socioeconomic profile of the region.

## 3.0 Geographic Attributes

Located at the confluence of the Andreafski and Yukon Rivers, St. Mary's is the farthest upriver community on the Yukon River with deep-water barge access. It serves as a freight hub for several

surrounding villages, including Pilot Point, Russian Village, Mountain Village, Pitka's Point, and Marshall. These communities are not connected to the highway system and are dependent on seasonal barges and airfreight for delivery of goods to and from the region. Shallow draft barges are used higher up on the Yukon River, generally originating in Nenana and travelling downstream.

#### 3.1 Air Freight Hub

The St. Mary's Airport directly serves the communities of St. Mary's, Andreafski, and Pitka's Point. KSM, with its 6,008 feet long runway, also serves as a regional hub for mail and cargo shipments. Bypass mail and cargo arrive on the larger aircraft, including NAC's 737-200, DC-6's operated by Everts Air Cargo (Everts) and the RAVN's Dash 8s. Bypass mail and freight is then transferred to second line cargo carriers utilizing smaller aircraft, such as Cessna Caravans and Casa 212s.

The airports in Mountain Village and Pilot Station receive approximately 40% of the mail that is received at KSM. Figure 2 below illustrates the mail volume and final destination of mail sent to St. Mary's in 2017.



Figure 2: 2017 Bypass Mail Volume to and from St. Mary's Airport

Pilot Station and Mountain Village both receive, on average, more than 10 tons of mail through KSM each week. These two communities, and the others receiving mail through KSM, have

significantly shorter runways that are unable to serve larger aircraft from Anchorage and Fairbanks. Even communities with longer runways, such as Emmonak (4,600-foot runway) and Aniak (6,001-foot runway), receive more than 2 tons of mail each week from KSM. The Alaska Commercial Company (ACC) has stores in St. Mary's, Mountain Village, and Pilot Point. By consolidating shipments through KSM, ACC is able to reduce transportation costs.

Bethel, Nome, and Aniak are the only airports within a 200-mile radius of KSM that have runways longer than 6,000 feet. These airports are 100 miles or more from KSM and have paved runways that support jet traffic. KSM is the only airport in the lower Yukon Delta region with a runway long enough to support freight and cargo delivery using jet traffic.

Largest Runway					
Community	Length (feet)	Width (feet)	Surfacing	Distance (miles)	Instrument Approach
ST MARY'S	6008	150	gravel	0	LPV (300-3/4)
MOUNTAIN VILLAGE	3501	75	gravel	12	LNAV(300-1)
PILOT STATION	4000	75	gravel	16	-
MARSHALL	3200	100	gravel	42	LP (800-1 1/2)
NUNAM IQUA (SHELDON POINT)	3015	60	gravel	59	-
ALAKANUK	4000	75	gravel	61	-
EMMONAK	4601	100	gravel	63	LPV (300-1)
RUSSIAN MISSION	3620	100	gravel	67	LNAV (800- 1 1/4
KOTLIK	4400	100	gravel	68	LNAV (500-1)
SCAMMON BAY	3001	75	gravel	75	LP (900-1 1/4)
CHEVAK	3220	75	gravel	83	LNAV (500-1)
NUNAPITCHUK	2420	75	gravel	85	-
KASIGLUK	3000	60	gravel	86	LNAV (600-1)
ATMAUTLUAK	3000	75	gravel	90	-
NEWTOK	2202	35	gravel	90	-
CAPE ROMANZOF LRRS	3955	135	gravel	91	S-2 (1100-2 1/2)
HOOPER BAY	3300	75	gravel	100	LP (400-1)
BETHEL	6400	150	asphalt	101	ILS (200- 1/2)

#### Table 2: Airports Within 100 Miles of St. Mary's

Source: Airport Master Record 5010 and Airnav.com published information about respective airport

KSM serves as an important airfreight hub for approximately 16 Yukon-Kuskokwim communities within a 100-mile radius of St. Mary's. Table 2 lists other airports within the region and the dimensions of their longest runways. For reasons of economy, bypass mail and freight are consolidated, flown to KSM, and then distributed onto bush-line carriers to the outlying communities. From Anchorage, the bypass mail point of origin, operations are performed by RAVN Alaska (Corvus Air) in Dash 8 aircraft. Other bypass mail carriers are NAC and Everts, flying 737-200s and DC-6, respectively. Of the communities within 100 miles, only Emmonak has a runway long enough for full payload operations by Dash 8s and DC-6s. Therefore, changes to the runway configuration, approaches, weather minimums, or fleet mix serving KSM will also impact other communities in the region. If large cargo can no longer be carried into KSM, the

surrounding communities will lose shipping opportunities. Also, not all of the surrounding airports have published instrument approaches and many have higher approach minimums. These airports are more sensitive to weather and cannot offer the same level of reliable service to the region as KSM.

#### 3.2 River Freight Hub

The primary barge companies serving Western and Interior Alaska are: Crowley Maritime, Delta Western, and Yutana Barge Lines. Other companies deliver fuel and transfer freight between villages along the middle and upper Yukon River. The majority of heavy freight (fuel, equipment, and construction materials) is delivered to St. Mary's via barge using two barge landings in the community: the City Dock and the Boreal Fisheries barge landings.

The City Dock, and adjacent barge landing, is located near the confluence of the Andreafski and Yukon Rivers. At the City Dock, goods are delivered for overland transport to St. Mary's, Pitka's Point, Pilot Station, and Mountain Village. The primary ports of origin for these deliveries include Anchorage, Seattle, and Fairbanks. The City Dock has 20 permanent slips and two transient slips. The maximum vessel length that can be accommodated is 100 feet. Freight transfer and crane services are also available to assist with loading and unloading shipments. The Boreal Fisheries landing is located on KSM airport property, about ten miles downriver from the City Dock. This barge landing is located on property leased by Boreal Fisheries, Inc. (Boreal) and is adjacent to several traditional fishing camps. The landing is traditionally used for unloading fish for processing and contains four transient slips that can accommodate vessels as long as 92 feet. The Boreal Fisheries barge landing supports fishing activity at St. Mary's, Mountain Village, Pilot Station, Holy Cross, Marshall, and Emmonak. No scheduled freight delivery is received at this landing.

Alaska Village Electric Cooperative, Inc. (AVEC) provides diesel generated electric power for St. Mary's, Pitka's Point, and Mountain Village. AVEC contracts barge delivery of diesel fuel once a year, during the summer months. Fuel is delivered to the tank farms via marine header located south of the City Dock. A new 900 kW wind turbine is being installed in St. Mary's as a joint venture between AVEC and Pitka's Point Native Corporation. The wind turbine is expected to supplant approximately 2,525 MWh/year of diesel generated power, which will reduce diesel demand.

#### 4.0 Economic Characteristics

KSM is a transportation hub for the region. Most goods delivered to the region, including groceries, are consolidated and shipped as bypass mail through KSM. Bulky items such as furniture, snow machines, and boat motors are shipped to KSM as airfreight or seasonally via barge. Delivery of palletized freight with the larger cargo carriers reduces shipping costs and limits the risk of damaging items during transport.

Together with Emmonak, St. Mary's fills an important function for processing and shipping Yukon River Chinook, Chum, and Coho Salmon product to market. St. Mary's fish processor, Boreal, estimates that an average of 1,000,000 pounds of fish was transported through KSM annually for the last 45 years. Subsistence fishing starts as soon as the Andreafski and Yukon Rivers are ice-free. Commercial fishing begins as soon as the subsistence needs of the local residents are met. There are 77 St. Mary's residents that hold commercial fishing permits. Local fishermen deliver

fish to one of three regional fish buyers in the community: Boreal, Fishpeople Seafood (Fishpeople), and KwikPak Fisheries, LLC (Kwik'Pak) that process the harvest for transportation to market, primarily by aircraft through KSM. Estimates by Boreal Fisheries and other fish buyers indicate that as much as \$1.5M to \$3M is contributed to the local economy through commercial fishing annually. Subsistence activities, including fishing, hunting and gathering of berries, supplement the cash economy for residents.

Commercial fishing is a family enterprise that is rooted in the cultural identity of the local communities. Often this activity involves several generations, with a parent or grandparent operating the boat while younger family members operate the nets and handle the harvest. In recent years, strict state regulations have prohibited harvest and bycatch of Chinook salmon. To adapt, fishermen have modified their methods from using driftnets to primarily utilizing dip nets. Dip nets are more labor intensive but the fishermen have better ability to release unintended catch unharmed. Many boats now operate with a crew of five or six; one operating the boat and up to four handling the dip nets. Fish buyers operating in St. Mary's buy fish caught in Yukon River District 2. There are approximately 195 commercial fishing permit holders operating in District 2 from St. Mary's, Pitka's Point, Pilot Station, Mountain Village, Holy Cross, Marshall, and Russian Mission. The income earned from commercial fishing comes from the open market and is spent locally and regionally to support subsistence activities and provides the basis of the local economy.

See Appendix E for a detailed socioeconomic profile of the region and a description of KSM's role in the regional economy.

#### 5.0 Aviation Activity

KSM is a non-towered airport and there is no observed data available. The activity for this forecast is based on data reported to the FAA and the Bureau of Transportation Statics (BTS), and carrier interviews.

The FAA tracks and records aircraft filed flight plans for all flights operated under Instrument Flight Rules (IFR). This data is available through the TFMSC database and provides information about the number of IFR operations to KSM for which flight plans are filed. The air carriers operating jet aircraft generally file flight plans for all of their operations. Propeller-driven aircraft are not required to file a flight plan when the weather does not dictate IFR conditions. Therefore, many visual flight rules (VFR) operations are not included in the TFMSC data.

Each month, the BTS Office of Airline Information collects market data from air carriers providing Part 121 or Part 135 cargo and passenger service (both scheduled and chartered). BTS T100 data contains each flight segment's origin, destination, carrier, aircraft, number of operations, number of passengers, and weight of mail and freight. Table 3 summarizes the carriers who have reporting traffic to and from KSM since 2002.





Source: Bureau of Transportation Statistics T100 data for Domestic Carriers 2002-2017

Since 2002, there has been a consolidation of carriers servicing KSM. RAVN Air acquired Arctic Circle Air Service, Cape Smythe Air Service, Era Aviation, Frontier Flying Service, and Hageland Aviation. RAVN also acquired aircraft from Yute Air, but not the operating certificate. Arctic Transportation Services was rebranded as RYAN Air. Larry's Flying Services had ceased operations. Carriers that only provide charter service to KSM include Lynden Air Cargo (Lynden), Alaska Central Express, Iliamna Air Taxi, Warbelow, and Wright Air Service.

Air Carriers identified in the table above were contacted and asked to complete an air carrier activity survey. After completion of the survey, they were interviewed to obtain additional details about their operations and their operational needs at KSM. See Appendices C and D for interview notes and survey responses.

The airport master record indicates that eight aircraft are based at KSM. Site inspection and conversations with air carriers show that there are seven aircraft based at KSM year-round. RAVN owns six of these aircraft and the other is owned by the Alaska State Troopers. During the summer, the Department of Fish and Game also base one aircraft at KSM.

#### 6.0 Aircraft Operations

#### **General Aviation Operations**

The typical approach for forecasting itinerant GA operations is to use the FAA-approved Grey Relational Analysis (GRA) model for estimating GA traffic at non-towered airports. The model results are then compare the FAA Terminal Activity Forecast (TAF) and the AASP Forecast. However, the results of the GRA modeling for KSM varied widely and were inconclusive. This is likely due to the low number of based GA aircraft within a 100-mile radius of KSM. The variance

in results suggest the GRA is not an accurate modeling tool for determining GA operations at KSM. The FAA's TAF also contained no operational GA data and GA operations conducted under VFR without flight plans are not reported or recorded. Therefore, the most accurate source for this GA forecast is the AASP. The AASP estimates approximately 2,790 GA operations in KSM in 2015. Commercial operations were reported to be 10,057 for the same year. Therefore, this forecast considers that approximately 20% of all operations are GA traffic and the remaining 80% is commercial traffic.

#### **Commercial Aviation Operations**

Commercial operations conducted under Part 121 and Part 135 are reported by certificated air carriers and included in the BTS's T100 database. Operations with filed flight plans are also recorded in TFMSC. See Table 4 for a comparison of the BTS T100 data and the FAA TFMSC data. Certain types of aircraft have more TFMSC recorded operations than T100 operations. This discrepancy is likely due to the fact that some of the FAA's documented flights were GA IFR flights. In other cases, the air carriers reported more operations than were recorded by the FAA. This is likely due to the smaller air carriers flying propeller driven aircraft to operate commercial operations under visual flight rules where no IFR flight plan was filed.

Design Group	Reported by Air Carriers (BTS T100)	FAA Recorded Flight Plans (TFMSC)
A-I	10	30
A-II	187	44
A-III	765	628
B-I	8,345	402
B-II	1,033	610
B-III	197	212
C-I	0	0
C-II	0	0
C-III	186	188
C-IV	5	4
D-I	0	4

Table 4: Annua	<b>Operations b</b>	y Design Group,	2017
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**Sources:** Bureau of Transportation Statistics T100 data for Domestic Carriers 2002-2017 and Traffic Flow Management System Count for 2008-2017

As shown above, the two data sources for C-III (NAC 737s) operations correspond well because a flight plan is filed for each jet operation. The two additional C-III operations reported by the FAA were performed with a 737-700, which are not operated by any of the air carriers reporting operations at KSM. The DC-6s operated by Everts make up the vast majority of B-III operations. The C-IV operations are Lynden's C-130s which are occasionally chartered by fish processors for additional lift capacity to bring fish to market. The D-I operations are Learjet 35s for medical evacuations operated by Aero Air, under contract to Life-Med. The annual number of Learjet medevac flights typically fluctuates between two and ten. Life-Med also conducts medical evacuations from KSM using their Beechcraft King Air 200 based in Fairbanks and their Cessna 208 based on Bethel. Life-Med files flight plans for all their operations which are documented in the FAA's TFMSC database. Life-Med operations with King Air medevac operations typically fluctuate annually between ten and 40, over the ten year period studied. The life Life-Med operations using the Cessna 208 are indistinguishable from Hageland's operations in the TFMSC database.

The FAA's TFMSC database also includes 98 operations by business jets between 2008 and 2017. The jets consist of Cessna Citations, Gulfstreams, Challengers, and Learjet 60s.

A more detailed breakdown of aviation activity is included in Appendix F.

Commercial air carrier operations have shown a slight decrease of an average of 1.5% per year over the last 15 years. A similar reduction can also be seen in passenger enplanements. However, mail and freight volumes have slowly increased over the same period. These trends likely indicate a reduction in freight volumes related to construction-related activities and changes in the air carrier fleet to utilize larger and more cost-effective aircraft.

#### 7.0 Passenger Enplanements

Passenger enplanement is defined as revenue passenger boarding's at a specific airport. Scheduled commercial passenger service at KSM is provided by two carriers: RAVN Alaska and RAVN Connect. RAVN Alaska operates as Corvus Air, a Part 121 operator that provides daily air service between Anchorage and St. Mary's. These flights are Bombardier Dash 8-100s that are converted to carry up to 29 passengers and up to 7,500 pounds of freight. Much of the freight is bypass mail. Corvus Air (or their subsidiary Era Aviation) is one of three regional bypass mail carriers from Anchorage to St. Mary's, which delivers approximately 33% of all bypass mail to the region.

RAVN Connect is operated as Hageland Aviation, a Part 135 operator that provides local air service between Bethel, St. Mary's, and surrounding communities. Part 135 operations are limited to nine passengers and not more than 5,000 pounds of cargo. Hageland operates Beechcraft 1900s, Cessna 207s, and Cessna 208s. Hageland has three Cessna 207s and three Cessna 208s based in KSM that serve nearby communities. Hageland is the only operator with aircraft based at KSM.

Over the period between 2002 and 2017, there were over 80 passenger destinations originating from KSM. Table 5 shows the twelve most common destinations. As shown, more than half of all enplanements are for travel to communities in the Lower Yukon and Kuskokwim region.

	2013	2014	2015	2016	2017
Total Enplanements	14462	14704	14528	13352	12480
Anchorage, AK	5711	5780	6813	6249	5858
Mountain Village, AK	2682	2525	2101	1702	1500
Pilot Station, AK	1565	1525	1369	1619	1359
Emmonak, AK	1063	1029	814	1039	910
Kotlik, AK	766	954	849	793	772
Bethel, AK	782	735	650	467	585
Alakanuk, AK	896	826	712	647	499
Sheldon Point, AK	252	244	240	153	162
Hooper Bay, AK	57	77	67	57	109
Marshall, AK	117	199	80	93	103
Scammon Bay, AK	97	220	68	104	96

 Table 5: Destinations for Passengers Leaving St. Mary's

Source: Bureau of Transportation Statistics T100 data for Domestic Carriers 2002-2017

For surrounding communities, travel outside of the region begins with a flight to KSM. From there, passengers connect to Bethel or board a direct flight to Anchorage. Table 6 shows historical enplanements at KSM between 2002 and 2017. The forecast passenger enplanements are based on projected population growth provided by ADOL.

Year	Historical and Forecast Enplanements	Annual Growth Rate
2002	9,432	
2007	15,055	9.80%
2012	13,014	-2.87%
2017	12,480	-0.83%
2022	13,445	1.50%
2027	14,484	1.50%
2032	15,526	1.40%
2037	16,562	1.30%
0		

Table 6: Historical and Forecast Enplanements, KSM

**Sources:** Bureau of Transportation Statistics T100 data for Domestic Carriers 2002-2017. Alaska Department of Labor and Workforce Development, Research and Analysis Section

#### 8.0 Air Cargo

There are two components to air cargo that are reported by Part 121 and Part 135 air carriers: mail and freight. The first component, mail, is largely bypass mail. Freight includes shipment of all other goods such as consumer goods, food, clothing, supplies, materials, equipment, and appliances.

### 8.1 Bypass mail

The bypass mail system was created in the early 1970's intended specifically to serve those rural parts of Alaska that are only reached by air. Federal legislation established a system where private air carriers could carry mail to rural communities without handling by the US Postal Service. Consumers pay regular parcel post for shipments even though the cost is much higher. Regulations control many of the aspects of bypass mail. The regulations below are a summary from the USPS "Handbook PO-508 – Intra-Alaska Mail Service by Air":

- Bypass mail can only be originated in Anchorage or Fairbanks
- Individual pieces (not palletized) may not exceed 108 inches (combined length and girth) or weigh more than 70 pounds
- Authorized shippers must prepare palletized loads based on the following:
  - All pallets must conform to USPS DMM<sup>1</sup> regulations
  - Pallets must be uniform in size with max dimensions of 40 in. x 48 in. x 72 in. (width x length x height)
  - The weight on a pallet should be evenly distributed, with denser products on the bottom. The max weight of a pallet is 2,500 pounds (in effect 2,400 pounds of payload as the pallet weighs 70 lbs).
  - Shipper must secure the mail to the pallet by shrink wrap so that it will be secure, stable, and able to maintain unit integrity during transit.
- An order to a single addressee must weigh a minimum of 1,000 pounds. The order may consist of one or more pallets.
- An individual order may not exceed 50,000 pounds.
- Bypass mail process does not accept any of the following:
  - HAZMAT as defined by the USPS, the FAA, or the DOT&PF
    - Building and construction materials
- Freeze and chill items are accepted at the shipper's risk. The USPS does not provide, nor does it require carriers to provide, freezers or coolers.

Bypass mail carriers are divided into regional and bush carriers.

Regional carriers are Part 121 operators that transport mail from mail centers in Anchorage and Fairbanks to one of several bush hubs where the bypass mail is sorted and shipped to its final destination. There is an equitable distribution of the bypass mail among the regional carriers to each destination. To become a preferred regional carrier, an airline must have scheduled traffic to the destination.

Bush carriers are Part 135 operators that transport the bypass mail from a bush hub to the final destination. Bypass mail is not split equitably between bush carriers; carriers with scheduled passenger service are given preference when mail is sorted for final delivery at a bush hub.

The regional carrier has three days to deliver each shipment. The bush carrier or second line carrier has an additional day to make the delivery to its final destination.

<sup>&</sup>lt;sup>1</sup> US Postal Service Domestic Mail Manual

KSM has three preferred regional carriers: NAC, Everts Air, and Corvus. The approximate 4.5 million pounds of bypass mail sent to KSM each year is divided relatively equally between the carriers. NAC serves KSM with a 737-200 that has a payload capacity of approximately 25,000 pounds. Everts uses DC-6As with a payload capacity of 23,500 pounds. Corvus flies Dash 8-100s in a combi configuration that can carry 7,500 pounds of bypass mail.

RAVN (Hageland Aviation) and Ryan Air are the bush carriers that transport the bypass mail from KSM to final destinations. Hageland Aviation provides passenger service to the bypass mail destinations and is the preferred carrier, receiving approximately 75% of the bypass mail sent from KSM. Ryan Air delivers the remainder of the bypass mail using aircraft based at other regional airports.

The majority of bypass mail is for local grocery stores. ACC has stores in St. Mary's, Mountain Village, and Pilot Station. Everything sold in these stores is shipped as bypass mail or cargo to St. Mary's and distributed to Mountain Village and Pilot Station. Sales in these stores are linked to the local health of the village economies, and higher incomes from commercial fishing result in more goods delivered as bypass mail. Bypass mail is the preferred method of shipping goods as the cost is less than regular cargo.

Table 7 below shows the reported incoming and outgoing mail volumes at KSM. The amount of bypass mail fluctuates from year to year, but there is a growing trend of approximately 0.7 percent annually.

	Incoming (lbs)	Outgoing (lbs)	Total Mail (lbs)
2002	2,177,402	2,340,127	4,517,529
2003	4,334,200	3,035,208	7,369,408
2004	4,315,711	2,778,793	7,094,504
2005	3,944,759	2,549,298	6,494,057
2006	3,991,440	2,347,241	6,338,681
2007	3,993,621	2,654,933	6,648,554
2008	4,035,616	2,706,850	6,742,466
2009	3,882,322	2,532,707	6,415,029
2010	4,021,568	2,675,930	6,697,498
2011	4,079,895	2,885,374	6,965,269
2012	4,094,066	2,879,771	6,973,837
2013	4,274,597	3,091,090	7,365,687
2014	4,518,538	3,422,370	7,940,908
2015	4,238,366	2,953,957	7,192,323
2016	4,510,141	3,082,393	7,592,534
2017	4,648,544	3,193,848	7,842,392

Table 7: St. Mary's Airport Total Mail Summary, 2002-2017

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market

## 8.2 Freight

NAC and Everts both maintain a regular schedule for freight shipments to KSM. Air freight includes bulky items such as boat motors, lighter/smaller construction materials, equipment parts, snow machines, appliances, and furniture. Freight also includes food items that have a short shelf life and products that cannot be shipped as bypass mail such as aerosol cans, batteries, and hazardous materials as defined by the DOT&PF, the FAA or the USPS.

NAC and Everts also backhaul freight from KSM to Anchorage. Backhaul shipping rates are lower than the cost to ship by charter. Most of the outgoing freight is salmon caught in the Yukon District 2 commercial fishery. Fish buyers have operated in District 2 since the early 1970s and have relied on backhaul airfreight for shipping fish to market. During the commercial fishing season, as much as 60,000 pounds of fish is shipped daily from KSM by air.

A limiting factor of the fish harvest is the aggregate lift capacity of the aircraft fleet serving KSM. Fish processors have stated that more fish would be harvested and processed if there were more aircraft available at KSM to bring it to market. Table 8 gives the total weights of freight carried to and from KSM each year between 2002 and 2017.

	Incoming (lbs)	Outgoing (lbs)	Total Freight (lbs)
2002	879,608	978,857	1,858,465
2003	1,733,280	1,246,327	2,979,607
2004	1,239,959	1,205,147	2,445,106
2005	967,369	838,420	1,805,789
2006	1,238,331	1,606,560	1,734,891
2007	1,735,897	1,855,476	3,591,373
2008	1,731,680	974,645	2,706,325
2009	1,457,959	823,655	2,281,614
2010	1,825,727	1,048,069	2,873,796
2011	1,629,153	1,706,046	3,335,199
2012	1,272,736	1,428,960	2,701,696
2013	1,207,023	1,446,960	2,653,983
2014	1,512,352	1,221,446	2,733,798
2015	1,424,188	1,155,885	2,580,073
2016	1,211,757	1,594,790	2,806,547
2017	1,157,366	1,180,661	2,338,027

#### Table 8: St. Mary's Annual Freight, 2002-2017

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market

The impact of commercial fishing on air freight leaving KSM is shown in Figure 3. Each line in the figure represents one year between 2002 and 2017. The fall, winter, and spring freight levels average between 50,000 to 100,000 pounds per month. During commercial fishing season, there is as much as 600,000 pounds of freight shipped per month and more than two-thirds of all freight sent from KSM is sent during the months of June, July, and August. This short summer fishing

season represents the main source of private income for people living in St. Mary's and surrounding communities. The money generated from selling the harvested fish comes from the open market and is a significant factor in the sustainability of the region.



Figure 3: Freight Leaving St. Mary's

## 9.0 Factors Affecting Operations

There are several factors that will impact future aircraft operations at KSM including: freight costs, changes in fleet mix, and possible changes in runway length.

#### 9.1 Jet Aircraft with Gravel Kits

NAC has stated that they plan to retire their last remaining 737-200 with gravel kits in October 2018. Their new fleet will consist of 737-300s which are not capable of gravel runway operations. NAC has stated that, after October 2018, they will only be able to serve KSM if the runway is paved in the future.

NAC is currently a regional carrier of bypass mail to KSM. Approximately 1.5 million pounds of bypass mail currently carried annually by NAC will need to be distributed equally to RAVN Alaska and Everts in the future. This means that RAVN will need to add at least 100 annual Dash 8 operations and Everts will need to add at least 39 annual DC-6 operations to KSM to deliver the additional volume of bypass mail. Additionally, fish buyers in St. Mary's have heavily relied on NAC for backhaul of their fish to market. With NAC no longer serving KSM, fish buyers in St. Mary's will have to compete for Everts backhaul lift capacity with other nearby processors in Emmonak. With Everts' limited DC-6s limited availability, freight will also need to be chartered via Lynden C-130s, resulting in increased shipping costs.

## 9.2 Aging DC-6 fleet

There are currently 22 DC-6 aircraft registered in the United States. Everts owns and operates 16 of these aircraft. The DC-6s are approximately 60 years old and are increasingly difficult to maintain and support. However, Everts indicates that they have no planned fleet changes for KSM in the near future. In addition to the DC-6s, Everts operates the McDonnell Douglas DC-9s, Embraer Brasilia EMB-120s, McDonnell Douglas MD-82SFs, Cessna 208 Grand Caravans, and Pilatus PC-12s. For large cargo shipments to other paved airports, Everts is shifting their fleet from DC-6s to DC-9s and MacDonald Douglas MD82SFs. For the purposes of this forecast, Everts DC-6 fleet is assumed to be available in the five-year term, but will gradually be phased out of operation between the 5-year and 10-year planning periods. Currently, there are a few aircraft available in Alaska to replace DC-6 service to gravel airports. Table 9 shows a list of similar sized propeller and turbo propeller driven aircraft that are produced for cargo operations. Currently, only the C-130s are used in Alaska, making them the likely replacement for DC-6s in the near future.

Manufacturer	Model	Engines	Max Payload (lbs.)	Required Runway (feet)	Current use
Anatov	AN-32	2	14,770	unknown	Limited Civilian Use
ATR	72-600	2	16,500	4,500	Widespread Civilian use
CASA/IPTN	CN-235	2	13,100	3,950	Several Civilian Users
Fokker	50	2	5,500	3,600	Both Civilian and Military Use
Ilyushin	II-112	2	11,000	unknown	Under Development
Lockheed	C-130 Hercules	4	55,000	5,000	Civilian and Military use

Table 9:	Possible	DC-6	Replacement	Aircraft
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Source: Respective manufacturers websites

## 9.3 Runway Length

Changes to the available length of Runway 17/35 are likely to result in changes to the fleet mix serving KSM. A change in the fleet mix will likewise have economic and demographic impacts on the region. Currently, NAC requires the full 6,008-foot length of Runway 17/35 for operations without reducing their payload. Everts and Lynden can operate with full payloads with a 5,000-foot long runway under ideal environmental conditions. However, each have indicated that the full 6,008 feet is needed to meet their safety margins for engine failure on take-off at maximum take-off weight (MTOW). They also stated that the 6,008-foot runway length allows them to operate with stronger crosswinds and when the runway surface is soft or contaminated with snow or ice. If the runway is shortened, these carriers will likely need to curtail payload and/or operations during non-ideal conditions. Particularly important to the community, is the ability to ship harvested fish to market. The fishing industry is reliant on sufficient runway length for take-offs with full payloads, even on warm windy days when less dense air and crosswinds requires longer runway length for take-off. If payloads are reduced because the length of the runway is reduced, the unit cost to ship fish will go up. This would result in a drastic reduction in available lift capacity, with detrimental effect to the fish processing industry and regional economy.

Medical evacuations are also small but a very important class of operations at KSM. These operations are driven by urgency rather than convenience and can often occur in adverse conditions. Life-Med indicated that their preferred runway length for year-round Lear 35 medevac operations is 6,500 feet, and they could not provide Lear medivac operations to KSM if the length of Runway 17/35 was reduced. The Lear is the fastest most reliable form of medical evacuation from KSM to the major medical facilities in Anchorage and Fairbanks, and loss of these operations would negatively affect the health care in the region.

The FAA also has a minimum operations network (MON) of VHF omni-directional ranges (VORs<sup>2</sup>) and runways with Instrument Landing System (ILS) approaches in the contiguous United States (CONUS). MON ensures that in the event of a GPS outage, there is at least one airport within 100 Nautical Miles (NM) with VOR capability and instrument landing systems that can be used for safe landing without GPS equipment. The MON program is not specifically implemented in Alaska, but is generally considered to be the standard for aviation safety in the United States. Maintaining Runway 17/35's existing 6,008-foot length and the Instrument Landing Localizer/Distance Measuring Equipment (LOC/DME) approach at KSM, increases safety and provides a centrally-located airport in the Lower Yukon Region that can safely land a jet aircraft in the event of a mechanical emergency or GPS outage. Shortening the runway would make KSM not a viable alternate runway for commercial jet operations.

Table 10 summarizes the runway lengths needed for various aircraft currently using KSM. The numbers presented are based on interviews with chief pilots and operations directors of air carriers using KSM.

The "Minimum Runway Length" is based on air carrier operational specifications, FAA AC runway requirements the most heavily used aircraft, and represents the shortest runway length required for take-off and landing with reduced/restricted loads.

The "Full Payload Runway Length" column represents the runway length each operator desires for operations with full payloads in normal wind and runway conditions and no contamination of the runway surface. Runway contamination (snow, ice, water, soft surface) and high crosswind would reduce payloads or increase runway length required. The wind coverage for Runway 17/35 with a 16 knot crosswind component is 98.49 percent. When the runway is contaminated, the operational crosswind component is reduced for the larger aircraft.

"Preferred Runway Length" represents the runway length that each operator stated would provide an acceptable margin of safety to account for normal, non-ideal, runway conditions during fully loaded operations. The survey response provided by Life-Med Alaska includes a recommendation to lengthen the runway to 6,500 feet for year-round operations for their Lear 35. Corvus and Hageland indicated that their safety protocol includes the requirement to have 60% excess runway length for their operations.

<sup>&</sup>lt;sup>2</sup> VHF omni directional radio range (VOR) is a type of short-range radio navigation system for aircraft.

	ARC	2017 Operations	Minimum Runway Length (feet)	Full Payload Runway Length (feet)	Preferred Runway Length (feet)
Design group including DHC8-100 DASH 8	B-III	765	6010	6010	6010
BEECH 200 KINGAIR	B-I	6	3300	4000	-
CESSNA 182	B-I	1000	2000	2000	2000
Bombardier Learjet 35	B-I	8	5000	5000	6500
Cessna Conquest	B-II	12	3885	4000	-
BEECH 1900 A/B/C/D	B-II	993	2400	5000	6000
DOUGLAS DC-6	B-III	197	4500	5000	6000
BOEING 737-100/200	C-III	186	6000	6000	6000
BOEING 737-700	C-III	2	6000	6000	6000
LOCKHEED C-130	C-IV	5	5000	5000	6000

Table 10: KSM Runway Length Requirements For a Selection of Operating Aircraft

Source: Air carrier interviews and surveys

#### 9.4 Runway Surfacing

KSM was paved in 1977 and pavement degradation began almost immediately. A geotechnical investigation in 1978 determined that the pavement failures were due to two primary factors. First, there was high fines content in the base material that prevented drainage and caused frost heaving. Second, the base became "ice enriched" during the winter months and lost strength when it thawed in the spring. The airfield pavement was removed in the 1980s, with the exception of the south half of the main apron. The airfield has since been surfaced with gravel.

There are currently six airfields with 5,500 feet long or longer runways within a 200-mile radius from KSM. KSM is the only one of these runways that is not paved. As mentioned above, air carriers are gradually retiring the large cargo aircraft that routinely service gravel airports (737-200s, DC-6s). If Runway 17/35 was paved, these carriers would continue to provide additional lift capacity to St. Mary's.

In interviews, several air carriers recommended that the runway be paved. NAC stated that they will not continue to provide services to the gravel runway at KSM after the 737-200s are retired. Both NAC and Alaska Air Cargo stated they would provide scheduled flights to KSM with 737 jet aircraft if Runway 17/34 was paved in the future. Other carriers indicated that a paved runway would reduce wear on their aircraft.

Due to this air carrier feedback, an alternative forecast is included in this report that considers paving Runway 17/34 in the future.

#### 9.5 Forecast Scenario: Gravel Runway 17/35

This forecast scenario considers the existing gravel Runway 17/34 is maintained its current 6,008-foot length.

This scenario assumes that NAC ceases bypass mail and cargo operations to KSM in 2018, causing redistribution of their mail and freight to Corvus and Everts. This would increase Dash 8

and DC-6 operations between 2017 and 2022. This scenario assumes Everts DC-6s will be removed from service between 2022 and 2027 and replaced with Lynden C-130s. Using C-130s to replace the DC-6s will result in a slight drop in total operations because the C-130s have a higher payload. Other traffic is assumed to grow at ADOL forecast growth rates.

The forecast assumes that commercial fishing will continue to harvest similar catch levels and utilize similar lift capacity as is currently available. A reduction in operations due to competition for available lift capacity fish processors in Emmonak has not been included. Table 11 summarizes the forecasted aviation activity under this scenario. More detailed forecast information is available and included in Appendix G.

FORECAST ANNUAL OP	ORECAST ANNUAL OPERATIONS								1.50%	1.40%	1.30%
	APCH	WING	TAIL	GROSS			An	nual O	peratior	IS	
	SPEED	SPAN	HGT	WEIGHT		2016	2017	2022	2027	2032	2037
AIRCRAFT	(knots)	(feet)	(feet)	(pounds)	ARC	(year	- 0)	(year 5)	(year 10)	(year 15)	(year 20)
									10		10
CESSNA 172 SKYHAWK	75	36.17	8.92	2300	A-I	14		15	16	17	18
C190 - Cessna C 190	70	36.17	7.17	3,350	A-I	0	2	2	2	2	2
GIPPS AERO GA8 AIR	78	40.25	12.75	3,999	A-I	16	10	17	18	19	20
PA31 - Piper Navajo PA-31	79	40.7	13	6,200	A-I	10	35	38	41	44	47
CASA 212	81	62.3	20.7	16,975	A-II	180	187	201	217	233	249
DHC8-100 DASH 8	90	90	24.58	36,300	B-III	710	765	924	995	1067	1,138
BE36 - Beech Bonanza 36	77	37.83	8.58	3,850	A-I	0	4	4	4	4	4
BE9L - Beech King Air 90	97	50.25	14.67	9,650	B-I	6	4	4	4	4	4
BEECH 200 KINGAIR	103	54.5	15	12,500	B-I	30	28	30	32	34	36
BEECH KING AIR 350	107	57.92	14.33	15,000	B-II	2		2	2	2	2
CESSNA 182	64	36	9.33	3,100	A-I	1,000	1,000	1,077	1,160	1,244	1,327
CESSNA 206/207/209	70	35.83	9.58	3,800	A-I	4,660	4,599	4,954	5,337	5,721	6,103
CESSNA 208	79	52.08	15.5	8,750	A-II	4,352	3,699	3,985	4,293	4,602	4,909
CESSNA C208B	79	52.08	14.83	8,750	A-II	2	6	6	6	6	6
PIPER PA-32	79	36.17	8.5	3,600	A-I	2		2	2	2	2
BEECH 1900 A/B/C/D	113	58	15.5	17,120	B-II	1,020	993	1,070	1,153	1,236	1,318
C441 - Cessna Conquest	100	49.3	13.1	9,925	B-II	8	12	13	14	15	16
PILATUS PC-12	87	53.25	14	9,920	A-II	4	24	26	28	30	32
SHORTS 330	96	74.67	23.08	22,000	B-II	4	32	34	37	40	43
DOUGLAS DC-6	108	117.5	29.3	104,000	B-III	204	212	266			
Bombardier Challenger 600/601/604	125	61.8	20.67	47,600	C-II	6	0	6	6	6	6
BOEING 737-100/200	137	93	37.25	115,500	C-III	196	186				
BOEING 737-700	130	112.58	41.17	154,500	C-III		2	2	2	2	2
LOCKHEED C-130	138	132.6	39.2	155,000	C-IV	2	5	6	100	107	114
Bombardier Learjet 35	143	39.5	12.3	18,300	D-I	10	4	11	12	13	14
Total						12,438	11,809	12,695	13,481	14,450	15,412
Military jet						2	2	2	2	2	2
GA Local and Itinerant traffic (	@ 20% of	Carriers				2,488	2,362	2,539	2,696	2,890	3,082
TOTAL fixed wing Operation	าร					14,928	14,173	15,236	16,179	17,342	18,496

Table 11: Aviation Forecast Gravel Runway

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market. FAA Aircraft Characteristics Database.

#### 9.6 Alternative Forecast Scenario: Paved Runway 17/35

This scenario considers likely changes in forecasted operations if the full 6,008-foot length Runway 17/35 is paved within the 5-year planning period. This scenario assumes NAC will continue operations to KSM on the paved runway and provide bypass mail and backhaul operations with jet aircraft. The forecast also assumes that Everts will shift their fleet mix from DC-6s to DC-9s in 2022 and continue to provide bypass mail and backhaul capacity for transporting fish to market. This scenario assumes a new cargo route to KSM by Alaska Air Cargo with three scheduled stops per week and additional capacity during the commercial fishing season as needed. Other traffic is assumed to grow at ADOL forecast population growth rates.

This forecast scenario assumes that local fish processors will take advantage of the additional lift capacity provided and more fish will be brought to market via backhaul and charter flights from KSM. In 2017, with an available harvest of 27 million pounds, commercial fishing in Yukon Districts 1 and 2 was limited to 7 million pounds due to the limited lift capacity. This scenario assumes that the increased lift capacity will result in an immediate increase in the volume of fish harvested and brought to market. This increase is reflected by doubling the jet operations in 2022, assuming that approximately twice as many fish will be harvested and shipped due to the availability of additional lift capacity. After 2022, the scenario assumes that commercial operations will fluctuate year to year and annual yearly growth will match the current growth trend of 0.7%. Also, with full jet service available at KSM there will be no competition for lift capacity at Emmonak. Table 12 summarizes the forecasted aviation activity under this scenario. More detailed forecast information is included in Appendix G.

This alternative forecast scenario is for information purposes only and is not advanced in this aviation forecast report as DOT&PF is not planning to pave Runway 17/35 in the near future.

FORECAST ANNUAL O	PERATION	IS				Growth I	Rate	1.50%	1.50%	1.40%	1.30%
	APCH	WING	TAIL	GROSS			An	nual O	peratio	าร	
	SPEED	SPAN	HGT	WEIGHT		2016	2017	2022	2027	2032	2037
AIRCRAFI	(knots)	(feet)	(feet)	(pounds)	ARC	(yea	r 0)	(year 5)	(year 10)	(year 15)	(year 20)
CESSNA 172 SKYHAWK	75	36.17	8.92	2300	A-I	14	0	15	16	17	18
C190 - Cessna C 190	70	36.17	7.17	3,350	A-I	0	2	2	2	2	2
GIPPS AERO GA8 AIR	78	40.25	12.75	3,999	A-I	16	10	17	18	19	20
PA31 - Piper Navajo PA-31	79	40.7	13	6,200	A-I	10	35	38	41	44	47
CASA 212	81	62.3	20.7	16,975	A-II	180	187	201	217	233	249
DHC8-100 DASH 8	90	90	24.58	36,300	B-III	710	765	765	824	883	942
BE36 - Beech Bonanza 36	77	37.83	8.58	3,850	A-I	0	4	4	4	4	4
BE9L - Beech King Air 90	97	50.25	14.67	9,650	B-I	6	4	4	4	4	4
BEECH 200 KINGAIR	103	54.5	15	12,500	B-I	30	28	30	32	34	36
BEECH KING AIR 350	107	57.92	14.33	15,000	B-II	2	0	2	2	2	2
CESSNA 182	64	36	9.33	3,100	A-I	1,000	1,000	1,077	1,160	1,244	1,327
CESSNA 206/207/209	70	35.83	9.58	3,800	A-I	4,660	4,599	4,954	5,337	5,721	6,103
CESSNA 208	79	52.08	15.5	8,750	A-II	4,352	3,699	3,985	4,293	4,602	4,909
CESSNA C208B	79	52.08	14.83	8,750	A-II	2	6	6	6	6	6
PIPER PA-32	79	36.17	8.5	3,600	A-I	2	0	2	2	2	2
BEECH 1900 A/B/C/D	113	58	15.5	17,120	B-II	1,020	993	1,070	1,153	1,236	1,318
C441 - Cessna Conquest	100	49.3	13.1	9,925	B-II	8	12	13	14	15	16
PILATUS PC-12	87	53.25	14	9,920	A-II	4	24	26	28	30	32
SHORTS 330	96	74.67	23.08	22,000	B-II	4	32	34	37	40	43
DOUGLAS DC-6	108	117.5	29.3	104,000	B-III	204	212	266	0	0	0
600/601/604	125	61.8	20.67	47,600	C-II	6	0	6	6	6	6
McDonnell Douglas DC-9	129	93.3	28	114,000	C-III	0	0	0	200	214	228
BOEING 737-100/200	137	93	37.25	115,500	C-III	196	186	0	0	0	0
BOEING 737-300	135	94.75	36.58	139,500	C-III	0	0	280	259	279	301
BOEING 737-700	130	112.58	41.17	154,500	C-III	0	2	248	224	240	256
LOCKHEED C-130	138	132.6	39.2	155,000	C-IV	2	5	6	6	6	6
Bombardier Learjet 35	143	39.5	12.3	18,300	D-I	10	4	11	12	13	14
Total						12,438	11,809	13,062	13,897	14,896	15,891
Military jet						2	2	2	2	2	2
GA Local and Itinerant Operation	ons @ 20% o	f Carriers				2,488	2,362	2,612	2,779	2,979	3,178
TOTAL fixed wing Operativ	TOTAL fixed wing Operations						14 172	15 676	16 679	17 877	19 071
	00 Domosti	in, in S	EAA Air	oroft Cho	ractoristic	13,071					

# Table 12: Aviation Forecast Paved Runway

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market. FAA Aircraft Characteristics Database.

### 9.7 Comparison to Other Forecasts

The FAA classifies KSM as a Commercial Non-Hub Airport for which the TAF is generated based on traffic volumes reported on the Airport Master Record (5010). The FAA's TAF for KSM only provides passenger enplanements, and no aircraft operations after 2004. In 2011, the DOT&PF's AASP forecasted passenger enplanements and cargo for Alaska airports, but forecasted operations only by census district combining all airports in the district. The aviation forecast (AF) for the existing gravel runway scenario generated in this report is based on detailed surveys and interviews with airport users, and a detailed evaluation of the local population, demographics, economy, and airport-related activities. Air carrier interview notes, phone logs, and survey responses are included in Appendices C and D. The AF, by its nature, is likely more accurate than the TAF and AASP data. See Table 13 for a comparison.

	Year	Airport Forecast (AF)	TAF	AF/TAF (Percent Difference)	AASP Forecast (AASP)	AF/AASP (Percent Difference)
Total Passengers						
-	2002	9,432	2,777	70.56%	N/A	N/A
	2007	15,055	13,869	7.88%	9,808	34.85%
	2012	13,014	12,864	1.15%	N/A	N/A
	2017	12,480	12,185	2.36%	10,765	13.74%
	2022	13,445	12,465	7.29%	12,452	7.38%
	2027	14,484	12,750	11.97%	N/A	N/A
	2032	15,526	13,035	16.05%	16,566	-6.70%
	2037	16,562	13,325	19.54%	N/A	N/A
Total Operations						
·	2002	17,171	8,510	50.44%	N/A	N/A
	2007	17,791	N/A	N/A	N/A	N/A
	2012	14,167	N/A	N/A	N/A	N/A
	2017	14,173	N/A	N/A	N/A	N/A
	2022	15,236	N/A	N/A	N/A	N/A
	2027	16,179	N/A	N/A	N/A	N/A
	2032	17,342	N/A	N/A	N/A	N/A
	2037	18,496	N/A	N/A	N/A	N/A
Cargo (lbs.)	E	Bypass Mail (lbs.)		Freight Air (lbs.)		
	2002	4,517,529		1,858,465	N/A	N/A
	2007	6,647,322		3,591,363	4,196,000	36.88%
	2012	6,973,837		2,701,696	N/A	N/A
	2017	7,836,656		2,338,027	4,889,000	37.61%
	2022	8,442,304		2,518,719	5,855,000	30.65%
	2027	9,094,759		2,713,376	N/A	N/A
	2032	9,749,469		2,908,705	8,524,000	12.57%
	2037	10,399,877		3,102,751		

#### Table 13: Airport Forecast Comparisons (Operations per Year)

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market. FAA Terminal Activity Forecast Database. Alaska Aviation System Plan, Aviation Activity Forecast.

### 10.0 Critical Aircraft, AAC, and ADG

St. Mary's runway lengths and widths appear to have been originally designed to Airport Reference Code (ARC) III standards to accommodate Boeing 727 and Lockheed L-100. The last Airport Layout Plan (ALP) approved in 2002 identifies C-III as the Airplane Design Group (ADG) for Runway 17/35 and A-I for the smaller crosswind Runway 06/24. Per AC 150/5000-17, the FAA defines the critical aircraft as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that regularly use the airport and have 500 annual operations per year. A grouping of aircraft with similar characteristics can be based on operational performance and or physical dimensions. Table 14 shows the relevant portion of the aviation activity forecast presented in Section 9.5 above.

FORECAST ANNUAL O	PERAT	IONS			Grow	th Rate	1.50%	1.50%	1.40%	1.30%
	APCH	WING	GROSS		Annual Operations					
AIRCRAFT	SPEED (knots)	SPAN (feet)	WEIGHT (pounds)	ARC	2016 (year 0)	2017	2022 (year 5)	2027 (year 10)	2032 (year 15)	2037 (year 20)
DHC8-100 DASH 8	90	90	36,300	B-III	710	765	924	995	1067	1138
CESSNA 182	64	36	3,100	A-I	1000	1000	1077	1160	1244	1327
CESSNA 206/207/209	70	35.83	3,800	A-I	4660	4599	4954	5337	5721	6103
CESSNA 208	79	52.08	8,750	A-II	4352	3699	3985	4293	4602	4909
BEECH 1900 A/B/C/D	113	58	17,120	B-II	1020	993	1070	1153	1236	1318
DOUGLAS DC-6A	108	117.5	104,000	B-III	204	212	266			
Bombardier Challenger 600/601/604	125	61.8	47,600	C-II	6	0	6	6	6	6
BOEING 737-100/200	137	93	115,500	C-III	196	186				
BOEING 737-700	130	112.58	154,500	C-III		2	2	2	2	2
LOCKHEED L100-30	138	132.6	155,000	C-IV	2	5	6	100	106	114
Bombardier Learjet 35	143	39.5	18,300	D-I	10	4	10	12	12	14

#### Table 14: Critical Aircraft

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market. FAA Aircraft Characteristics Database.

The table shows annual operations for 2016 and 2017 for several aircraft. Five aircraft are reported to have had more than 500 operations each for both years. Of these, the Cessna 208 is considered as the Critical Aircraft for the crosswind runway for both the existing and future planning periods. The Cessna 208 has an approach speed of 79 knots resulting in an Aircraft Approach Code (AAC) A for Runway 06/24. Likewise, the Cessna 208 wingspan is 52'1" resulting in an Aircraft Design Group II for Runway 06/24.

If Runway 17/35 remains unpaved, the Bombardier Dash 8-100 (B-III) is the Critical Aircraft for Runway 17/35 in the existing and future planning periods.

The AAC for Runway 17/35 is based on the aircraft or the group of aircraft with a common approach category that has at least 500 regular operations annually. Aircraft in Approach

Category C and D had 214 and 197 combined operations in the years 2016 and 2017, respectively. Therefore, the Bombardier Dash 8-100 (B-III) dictates the AAC for Runway 17/35 unless Runway 17/35 is paved. If the runway is paved in the future, the Critical Aircraft would change to the Boeing 737 (C-III).

Table 15 summarizes the Critical Aircraft for both runways and all planning periods assuming runways remain gravel.

	Planning Period								
	Existing	Year 5	Year 10	Year 20					
Runway 17/35 (gravel)	B-III	B-III	B-III	B-III					
Runway 06/24	A-II	A-II	A-II	A-II					

#### Table 15: Critical Aircraft for Planning Purposes

#### 10.1 Required Length for Runway 17/35

An airport's runway length is determined by the operational characteristics of the most demanding aircraft (current or projected) in its operational fleet. AC 150-5325-4B *Runway Length Requirements for Airport Design* provides guidance for determining runway length. The Critical Aircraft for Runway 17/35 is the Bombardier Dash 8-100, with a MTOW of 36,300 pounds. Chapter 3 of AC 150-5325-4B provides recommended runway lengths for Critical Aircraft with an MTOW between 12,500 pounds and 60,000 pounds. Figure 3.1 in Chapter 3 (included as figure 4 below) presents the required runway length for 75% of the aircraft fleet based on the aircraft's Useful Load Factor, airport elevation, and mean daily maximum temperature for the hottest month. Figure 3.2 should be used if aircraft under evaluation at the airport are listed in Table 3.2. Bombardier Dash 8-100 (Dash 8) and Beechcraft 1900 (B1900) are not listed in Table 3.2., and therefore Figure 3.1 will be used for runway determination.

Figure 3.1 is used to determine Runway length using curves developed by FAA for a Useful Load of 60% or 90%. The selection of curves depends on haul length and service need of the critical aircrafts.

The Useful Load Factor is defined as the difference between the maximum allowable structural gross weight and the operating empty weight. The Useful Load is defined as passengers, cargo and usable fuel. This could also be expressed as the payload and usable fuel. Dash 8s were introduced for traffic to St. Mary's in 2009 and had 36 operations that year. From 2011, operations with Dash 8s have exceeded 500 operations annually. There were 765 Dash 8 operations in St. Mary's in 2017 and operations are anticipated to continue to grow each year. Dash 8s have an operating empty weight of 23,098 pounds and a maximum take-off weight of 36,300 pounds. Therefore, the Useful Load Factor for a Dash 8-100 is 13,202 pounds.

The selection of 60% or 90% curve in Figure 3.1 depends on how much of the Useful Load capacity is utilized in operations by the critical aircraft. The AC states that aircraft with a Useful Load over 60% shall use the 90% Useful Load chart.

For St. Mary's Airport, Dash 8-100 and B1900 make up a majority of the operations of the fleet of aircraft between 12,500 and 60,000-pound MTOW. There are two components of the Useful Load that need to be evaluated to determine the curve selection for these aircraft.

- 1. What is the minimum amount of fuel carried?
- 2. What is the payload carried?

#### 10.1.1Minimum amount of fuel carried

RAVN uses Dash 8 for direct flights between Anchorage and St. Mary's. The distance between Anchorage and St. Mary's is 383 nautical miles. At cruise speed of 268 knots the Dash 8 can cover this distance in approximately 1 hour 26 minutes. In addition, the aircraft must carry an additional 45 minutes of fuel to meet operation requirements under Part 121 and Part 135 when carrying passengers. The published fuel flow rate at cruise speed is 1,213 pounds per hour. The minimum usable fuel used in this evaluation is the fuel necessary for 2 hours and 11 minutes, or 2,647 lbs.

B1900 are mainly used by Hageland Aviation for their Part 135 operations but are also used to a lesser extent by other operators. Raytheon/Beechcraft 1900 has a maximum takeoff weight of 17,120 pounds and an operating empty weight of 10,434 pounds. The Useful Load Factor for B1900 is therefore 6,686 pounds.

B1900 have been used during the entire studied period, 2002 to 2017. The routes served are varied and for the purpose of this evaluation fuel has been considered based on 30, 45, and 60 minute flight times with additional 45 minutes of reserve fuel. The fuel flow rate is 888 pounds per hour. The three values of minimum usable fuel in this evaluation is the fuel necessary for 1 hour 15 minutes, 1 hour 30 minutes, and 1 hour 45 minutes; or 1,110 pounds, 1,332 pounds, and 1,554 pounds, respectively.

#### 10.1.2 Reported Payload

Payload is reported by air carriers on a monthly basis. This data is available in the T100 database. Table 16 below shows the reported payload for all Dash-8 operations to and from St. Mary's and the corresponding Useful Load between 2009 and 2017. 2017 operations are provided a separate line.

The payload ranges used in the table were selected to represent 5% increments of Useful Load Factor.

Table 1	6 -	Dash	8	Useful	Load
---------	-----	------	---	--------	------

Payload (lbs.)	<3,900	3,900-5,300	5,300-6,000	6,000-6,700	6,700-7,200	7,200-7,900	>7,900	Σ
Useful Load (%)	40-50%	50-60%	60-65%	65-70%	70-75%	75-80%	80-85%	2
Total Operations	1	4	10	85	174	4,263	48	4,585
2017 Operations	0	0	0	0	0	765	0	765

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market

Table 17 below shows the reported payload for all Beechcraft 1900 operations to and from St. Mary's and the corresponding Useful Load between 2002 and 2017. 2017 operations are provided a separate line.

Payload ranges corresponding to 10% increments in Useful Load were used for this table.

Table 17 - Beechcraft 1900 Useful Load												
Payload (lbs.)	<1,800	1,800-2,500	2,500-3,125	3,125-3,790	3,800-4,450	>4,450	7					
Useful Load (%)	<50%	50-60%	60-70%	70-80%	80-90%	90-100%	Ζ					
Total Operations	93	48	84	3,990	5,887	7,115	17,217					
2017 Operations	0	0	0	0	0	993	993					

Source: Bureau of Transportation Statistics. Air Carrier Statistics T-100 Domestic Market

The evaluation above of the Useful Load carried by Dash 8 and B1900 shows that the 90% Useful Load curve of figure 3.1 should be used in runway length determination for both aircraft.

Using KSM AWOS temperature observations between 2002 and 2017, the mean daily maximum temperature was calculated to be 61.9°F for the month of July. The published airport elevation is 312 feet Mean Sea Level (MSL). Based on these factors, Figure 3.1 recommends a required runway length of 5,800 feet for the Dash 8. Per AC 150-5325-4B, Section 304, the minimum runway length shall be adjusted by adding 10 feet for every one-foot of elevation difference between the high point and low point of the runway centerline. Runway 17/35 has a 21-foot difference between the low and high points, resulting in 210 feet of additional runway length required. Therefore, the FAA's recommended runway length of Runway 17/35 is 6,010 feet. The existing Runway 17/35 is 6,008 feet in length.



Figure 4: Runway 17/35 length based on AC 150/5324-4B Figure 3.1 90% useful load

#### 10.2 Required Length for Runway 06/24

Chapter 2 of AC 150-5325-4B provides guidance for determining runway length for small airplanes with a MTOW of less than 12,500 pounds. Table 1-3 in the AC states that the crosswind runway for scheduled traffic should be based on "100% of the recommended runway length determined for the lower crosswind capable airplanes using the primary runway."

To determine the lower crosswind capable airplanes that need a crosswind runway, wind observations from the AWOS at St. Mary's airport were compiled between August 1, 2008 and July 31, 2018. The wind data was analyzed using the wind rose tool provided on the FAA Airports-GIS website. Table 18 shows the wind coverage for each runway at St. Mary's airport for design group I, II, and III aircraft operations, which correspond to a crosswind capacity of 10.5, 13, and 16 knots, respectively.

	Wind Speed (knots)		
Runway	10.5	13	16
17/35	83.52%	88.92%	94.14%
6/24	84.67%	90.91%	96.76%
Both	96.61%	99.00%	99.73%

#### Table 18 – Wind coverage at KSM

FAA AC 150/5300-13A Airport Design states that if a runway orientation provides less than 95% wind coverage for aircraft that are forecast to use the airport on a regular basis; a crosswind runway may be required. Table 18 shows that the crosswind coverage for Runway 17/35 does not meet FAA requirement for an allowable crosswind of 10.5 knots (DG I) or 13 knots (DG II). The largest design group II scheduled aircraft that regularly uses Runway 06/24 is the Cessna 208, with a MTOW of 8,000 pounds. Therefore, the Cessna 208 is the critical aircraft for the crosswind runway. This aircraft's approach speed is 79 knots, so runway length determination should be made using Figure 2-1 in AC150/5325-4B (included as Figure 5 below). This figure presents the recommended runway length, based on the airport elevation, and mean daily maximum temperature of the hottest month. Using 312 feet MSL for elevation and 61.9°F for the mean daily maximum temperature, results in a required runway length of 2,800 feet for Runway 06/24. The existing Runway 17/35 is 1,520 feet in length.


Figure 5: Runway 6/24 Required Length based on AC150/5325-4B Figure 2-1

# 11.0 Conclusion

The purpose of this Aviation Activity Forecast for the St. Mary's Airport is to determine the Critical Aircraft. The Critical Aircraft is needed for planning and design of airport improvements including resurfacing the runway, taxiways, and aprons and replacing the airport lighting system. The Critical Aircraft has been established through review of reported aircraft operation statistics, air carrier and airport user surveys, and interviews.

The Critical Aircraft for Runway 17/35 is the Bombardier Dash 8-100 with AAC B and DG III. Based on this critical aircraft, the required length for Runway 17/35 is 6,010 feet.

The Critical Aircraft for Runway 06/24 is Cessna 208 with AAC A and DG II. Based on this critical aircraft, the required length for Runway 06/24 is 2,800 feet.

Air carriers providing cargo service at KSM have indicated that maintaining the current runway length ensures that flights with full payloads can depart from KSM. This is especially important for this remote community, as maintaining the existing runway configuration will insure that the airport can continue to be safely used by a range of C-III, C-IV, and D-I aircraft that provide vital lift capacity to support the local commercial fishing industry and medevac operations that maintain their existing level of access to health care. The fishing industry is a significant source of income for many of the residents in St. Mary's and the surrounding communities, who depend on these large cargo aircraft to bring their catch to market. Any modification to the runway length that results in a reduction of lift capacity or increase in shipping costs will likely have a detrimental effect to the economic sustainability of the community and the surrounding region.

Appendix A: Inventory and Description of Existing Facilities

# ST. MARY'S AIRPORT AIRPORT IMPROVEMENTS

Project Number Z605630000

AIP Number 3-02-0017-TBD-201X

# ABBREVIATED INVENTORY

Prepared For:



State of Alaska Department of Transportation and Public Facilities

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# TABLE OF CONTENTS

Introductio	on 1			
Ва	ckground and History1			
Air	port Classification1			
Ro	le in the Community1			
Air	port Management1			
Air	port Maintenance and Operations1			
1.0	Airfield/Airspace 2			
1.1	Runways 2			
1.2	Helicopter Facilities			
1.3	Taxiways4			
1.4 Aprons				
1.5	Markings5			
1.6	Topography and Drainage5			
1.7	Signage			
1.8	Pavement Condition			
1.9 `	Visual Aids7			
1.10	9 FAA owned Visual Approach aids			
1.11	FAA Owned Navigational aids    10      10    10			
1.12 Weather reporting station				
1.13	Airspace			
2.0	Commercial Passenger Terminal Facilities11			
3.0	General Aviation Facilities			
4.0	Cargo Facilities12			
5.0	Support Facilities12			
6.0	Access, Circulation and Parking13			
7.0	Utilities13			
8.0	Other Airport Uses14			

# Introduction

## Background and History

St. Mary's Airport (KSM) is located 6 miles west of the City of St. Mary's. The airport is located on a ridge overlooking the Yukon River. KSM functions as a regional hub airport for passenger, mail, and freight traffic connecting villages in the Lower Yukon with Bethel and Anchorage. KSM has two runways: Runway 17/35 that is 6,008 feet (ft.) long and 150 ft. wide and Runway 6/24 that is 1,520 ft. long and 60 ft. wide. Both runways have gravel surfacing.

The airfield was constructed in several phases between 1963 and 1973. In 1973 Runway 17/35 was extended to 6,000 ft. and the crosswind runway was constructed. The airfield surfaces were paved in 1977. With exception of the southern half of the main apron, the airfield pavement has been removed. The surfacing is now gravel.

# Airport Classification

KSM is classified by the FAA as a Non-Hub Primary Commercial Service Airport. The airport is not Part 139 certified. The Department of Transportation and Public Facilities (DOT&PF) classifies the airport as a regional airport in the Alaska Aviation System Plan (AASP). The current Airport Reference Code is C-III.

# Role in the Community

KSM is the lifeline for the communities of St. Mary's, Andreafski, and Pitka's Point. These villages are connected to the neighboring community of Mountain Village by a 23-mile seasonally maintained gravel road. This area is not connected to the highway system and the airport is vital to the year-round intermodal disbursements of people, goods, and supplies to and from the region. Residents and visitors utilize KSM to travel for work and/or pleasure, including scheduled and emergency medical services and school functions.

The commercial fishing industry in St. Mary's is dependent on KSM to ship their products to market. Fish caught in the Lower Yukon District 2 fishery (Approximately 130-miles of the Yukon River) is brought to market through KSM. For this function, fish processors and buyers rely on large cargo aircraft to economically transport fish to market in Anchorage.

Freight and cargo to residents in St. Mary's and the connected communities is flown to St. Mary's on large cargo aircraft. KSM is the hub for handling shipments of consumables sold in the stores throughout the region. These goods are flown in and distributed as by-pass mail

#### Airport Management

Airport management is provided by the Alaska DOT&PF and a full-time manager is based at KSM. This manager also manages the airports at Anvik, Grayling, Holy Cross, Marshall, Mountain Village, Pilot Station, Russian Mission, and Shageluk.

#### **Airport Maintenance and Operations**

The DOT&PF employs a staff of four people that are responsible for the maintenance and operation of the airport. The airport is attended Monday through Friday between 7:00 AM and 3:30 PM in the summer, and all days of the week between 7:00 AM and 3:30 PM in the winter.

Air operations rely on the Kenai Flight Service Station. Approach and departure service is provided by the Anchorage Center.

#### 1.0 Airfield/Airspace

#### 1.1 Runways

KSM has two runways: the main Runway 17/35 and a crosswind Runway 6/24.

#### Runway 17/35:

Runway 17/35's dimensions are 6,008 ft. x 150 ft. The runway was constructed with a gravel surface to its current length of 6,008 ft. in 1973 and the surface was paved in 1977. The asphalt was removed when frost damage made the asphalt surface difficult to maintain. The gravel surfacing has degraded over time. The surfacing has broken down and the crown has been removed by years of snow removal and maintenance operations. The surfacing material does not bind well, which makes maintaining the crown difficult. Gravel has been added by maintenance crews to improve the surface. The runway stays wet and soft during breakup and for up to two days after rain events. This results in rutting, especially at the ends of the runway where aircraft turn.



Figure 1-1 Runway 17 looking south

Landings, prop-wash, and jet-blast mobilize fines and coarse aggregate from the poorly bound surface. Coarser gravel appears to blow toward the 17 threshold. This can be seen in the image above (Figure 1-1), which is taken from the Runway 17 end looking south. There is a large soft spot on the runway, just north of the intersection with Taxiway B, which is routinely soft and requires repairs each season.

Dust palliative is periodically applied for dust control, but it is not intended as a bonding agent strong enough to withstand jet-blast.

The Runway Safety Area (RSA) was measured in the field to be 300 ft. wide and extend approximately 185 ft. beyond the end of Runway 17 and 195 ft. beyond the end of Runway 35. The RSA is graded and covered with gravel surfacing.

Several locations along the embankment slopes have differentially settled and minor erosion is present where rivulets of water have carved small channels. The diminishment of the crown and settlement of the embankment also indicates the possibility of melting permafrost under the runway embankment.

#### Runway 6/24:

Runway 6/24 measures 1,520 ft. x 60 ft. The runway surface is gravel. This runway was constructed in 1973 and paved in 1977. The asphalt was removed when frost damage made the asphalt surface very difficult to maintain. The runway surface is soft and subject to frost action, even general traffic with service vehicles leaves depressions in the surface. The surfacing material does not bind well, which makes maintaining the crown difficult. The image below (Figure 1-2) shows Runway 6/24 as viewed from Runway 6 looking east.



Figure 1-2 Runway 6 looking east

Figure 1-3 shows the departure end of Runway 6 looking east at the intersection of Runway 17 RSA and Runway 6 RSA. The RSA beyond the end of each runway is shared by both runways.

The runway surface is regraded each season to account for settlement and frost action. Several locations along the embankment slopes have differentially settled and minor erosion is present where rivulets of water have carved small channels. The uneven runway surface, diminishment of the crown, and settlement of the embankment also indicate the possibility of melting permafrost under the runway embankment.



Figure 1-3 Departure end of runway 6 looking east

The RSA area was measured to be 115 ft. wide, with 225 ft. beyond the end of Runway 24 and 300 ft. beyond the end of Runway 6.

## **1.2 Helicopter Facilities**

KSM does not have any dedicated helicopter facilities.

#### 1.3 Taxiways

There are two taxiways at KSM:

- Taxiway A connects the Main Apron and the GA Apron with Runway 35 and 6/24. The taxiway dimensions are 75 ft. wide and 1,030 ft. long.
- Taxiway B connects the Main Apron with Runway 17/35. The taxiway dimensions are 75 ft. wide and 950 ft. long.

Both taxiways are gravel. The surface is degraded, rutted, and soft during breakup and after rain. The crowns of the taxiways have been minimized by maintenance and potential subgrade settlement.

#### 1.4 Aprons

KSM has two aprons. The main apron measures 1,360 ft. by 240 ft. and it is accessed by both Taxiways A and B. The south half of the apron is paved and the remainder is surfaced with gravel. The main apron (Figure 1-4) is used for commercial operations providing passenger, mail, and freight service to and from KSM. An area on the north end of the apron is used for aircraft deicing. This activity appears to have led to thawing of the underlying soils causing differential settlement and the need for regular maintenance and regrading to maintain a usable surface.



Figure 1-4 Main Apron looking north

RAVN has six aircraft based on the main apron: three Cessna 207 and three Cessna 208.

There are six lease lots adjacent to the main apron. RAVN is the leaseholder of four lease lots, a fifth lease lot is leased by Ryan Air, and the sixth lease lot is not leased. The sixth lot currently lacks apron access because RAVN is leasing a portion of the apron in front of the lot. Hangars are constructed on each of the five leased lots.

The General Aviation (GA) Apron, a 300 ft. by 300 ft. gravel apron, is accessed by Taxiway A. Two groups of tie-downs are provided on the apron, consisting of: two pull through tie-downs and four push back tie-downs. Tie-down anchors are spaced at 24 ft. wide and 17 ft. deep. Tie-down positions are spaced at 44 ft. which gives room to park aircraft with wingspans up to 34 ft. with standard separation. The Alaska State Troopers have one aircraft based year-round on the GA apron. There are five undeveloped lease lots available adjacent to the GA Apron.

The Alaska Department of Fish and Game typically base one aircraft on the GA Apron throughout the summer.

#### 1.5 Markings

The airfield is not marked as all airfield surfaces, except a portion of the main apron, are gravel.

#### **1.6 Topography and Drainage**

The airfield is located on a ridge that provides positive drainage away from airfield improvements. Surface water from the airfield drains to the Yukon River to the south and infiltrates into the tundra to the north. The airport elevation is 312 ft. Runway 17/35 has an elevation of 308 ft. at the south end and 287 ft. at the north end, for an effective grade of 0.3%. The elevation of the crosswind runway is 312 ft. at the west end and 306 ft. in the east for an effective grade of 0.4%. The airport is located approximately 285 ft. above the Yukon River.

Steep sloping terrain to the south of the extended Runway 17/35 centerline makes it difficult and expensive to add any significant length to the runway safety area beyond the Runway 17 threshold. Extension of the RSA to the north would require relocation of the Medium-intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) and may encroach on traditional subsistence berry picking areas.

There is insufficient crown on the existing runways and taxiways to maintain adequate drainage to the edges of the embankments. Maintenance staff routinely regrade runways and taxiways to try to improve the crown. In spite of regular maintenance, the existing gravel surfacing is depleted and degraded, and the surface commonly has soft spots, rutting, and occasional ponding. A runway resurfacing project is needed to provide long-term drainage improvements along the length of both runways.

The apron generally drains northwest, with much of this water draining to the infield between the apron, Taxiways A and B, and Runway 17/35. When rapid surface drainage occurs from snow melt during break-up, or after heavy rain events, sheet flow is concentrated in the northwest corner of the apron and in the southern ditch line of Taxiway B. These areas experience erosion and sediment transport due to concentrated flows at higher velocities. Baffles have been installed in the Taxiway B ditch line to disrupt the flow and reduce erosion.

Drainage from the infield flows north and is dispersed through three culverts. One culvert is located under Runway 17/35, just south of the Taxiway B intersection. This culvert drains to the west. Two culverts are located below Taxiway B, just east of the intersection with Runway 17/34. These culverts drains to the north. The inlets to theses culverts are clogged with sediment after breakup and need to be cleared yearly to maintain flow. The DOT&PF generally prefers not to have culverts in runways and removal of the existing culvert below the runway should be considered during the design of the future airport improvements. This drainage could be rerouted to parallel the runway embankment.

#### 1.7 Signage

The airfield is equipped with lighted, mandatory signs marking hold positions on Taxiways A and B and providing directional guidance to runways and aprons. The signs are in fair condition and are of varying manufacture and model. Due to their age, the lighted signs are commonly out of service because the bulbs burn out and replacement bulbs are no longer readily available. The existing signs should be replaced with the runway lighting system.



The images in Figure 1-5 below are two examples of signs at the airfield.

Figure 1-5 Directional and location signs at KSM

#### **1.8 Pavement Condition**

A 700 ft. by 240 ft. area of the main apron is paved with asphalt. The forty-year-old asphalt has extensive surface degradation such as raveling and cracking. The pavement is peeling up in a few locations due to heavy aircraft traffic.

#### 1.9 Visual Aids

Runway 17/35 has a High Intensity Runway Lighting (HIRL) system. The light fixtures are operational but the circuit is at end-of-life. The DOT&PF electrician reported poor ground resistance measurements along the entire circuit during recent Megger testing. This is especially noticeable in cold weather when several of the lights will not illuminate. The edge light system is beyond its useful life and is in need of replacement.

The Medium Intensity Runway Lighting (MIRL) system for Runway 6/24 is in poor but operational condition. Several light cans have jacked from frost action or differentially settled due to thawing of frozen soils below the embankments. The edge light system is beyond its useful life and is in need of replacement.

The existing Medium Intensity Taxiway Lighting (MITL) system for both taxiways and the edge of the main apron is at end-of-life and is in need of replacement. Additional taxiway edge lights are required on the radii of the taxiway intersections with the runway and apron to adequately delineate the edge of the taxiway in these areas.



Figure 1-6 Primary Windcone and Segmented Circle

The primary windcone is co-located with the segmented circle (Figure 1-6). The segmented circle is marked with orange 55-gallon drums, which should be upgraded to panels to improve visibility. The primary windcone is internally lighted and marked with a red obstruction light.



Figure 1-7 Supplemental Windcone located north of Runway 24

The supplemental windcone (Figure 1-7) installed by Runway 6/24 is an old model with a steel plate foundation and is unlit.

The airport beacon is installed on the roof of the Snow Removal Equipment (SRE) building. It works intermittently. The beacon platform is reported to be in good condition but the beacon equipment is in need of replacement. Figure 1-8 shows the SRE building as viewed from the rear of the building looking west. The beacon is installed on the north end of the building.



Figure 1-8 Airport beacon located on top of the Snow Removal Equipment Building

#### 1.10 FAA-owned Visual Approach Aids.

Runway 17/35 has Visual Approach Slope Indicators (VASI) on both ends. These are reported to be reliable and outages are infrequent.



Figure 1-9 Runway 35, looking north

Runway 35 is marked with Runway End Identifier Lights (REILs). The REILs are operational but experience frequent outages and reliability issues. Figure 1-9 above shows Runway 35 looking north. The REILs are installed down runway from the threshold in non-standard locations as shown above. The VASI are also visible in the background.



Figure 1-10 Runway 17 MALSR, looking north

The Runway 17 MALSR (Figure 1-10) equipment is old, in poor condition, and is currently out of service. Water currently collects in the electrical junction boxes causing safety and reliability concerns. The FAA has programmed a future project to replace and upgrade the MALSR equipment.

There are no approach aids on the crosswind runway.

## 1.11 FAA-Owned Navigational Aids



Figure 1-11 Runway 17 Localizer and DME, looking east

The FAA owns and operates the navigational aids at KSM. Runway 17 is equipped with both a Localizer (LOC) and Distance Measuring Equipment (DME) (Figure 1-11). The LOC is installed on a wooden structure that is weathered and in poor condition. The power supply to the LOC is exposed at one location adjacent to the road. The glide slope indicator for runway 17, shown on the last ALP, appears to have been removed.

A non-directional beacon (NDB) is located east of the airport. A winter storm damaged the equipment and the NDB is currently out of service. The FAA does not currently have any plans to repair the NDB equipment.

#### 1.12 Weather Reporting Station



Figure 10-12 KSM Automated Weather Observation System, Type IIIP

KSM has an Automated Weather Station (AWOS) Type IIIP (Figure 1-12). The AWOS is located on the north end of the airfield approximately 1,150 ft. from the Runway 17 threshold and 270 ft. from the runway centerline. The AWOS is owned by the FAA and is frequently unable to provide weather observations. Observational data is radio-transmitted from the AWOS to FAA's Remote Communications Outlet located in the FAA building behind the DOT&PF's maintenance building.

#### 1.13 Airspace

Approaches to all runways are clear. Runway 17 has a 50:1 approach surface and Runway 35 has a 34:1 approach surface. Both runway ends have clear 40:1 departure surfaces. Approaches to Runway 6/24 are 20:1 and clear of obstructions. There is higher terrain to the west of Runway 6 but it does not penetrate the approach surface. The primary and transitional surface west of Runway 17/35 is penetrated by terrain north of the intersection with Taxiway B. There are also terrain penetrations to the horizontal surface to the east of the airport and south of the approach to Runway 24.

# 2.0 Commercial Passenger Terminal Facilities

There are no common passenger terminal facilities at KSM. RAVN, the airport tenant that provides scheduled passenger service to and from St. Mary's, provides their own passenger lounge in their main hangar. Ryan Air also has a small passenger waiting area at their hangar.

# 3.0 General Aviation Facilities



Figure 3-13 General Aviation Apron, view looking east

The GA Apron (Figure 3-1), accessed by Taxiway A, provides six tie-downs. There is no Fixed Based Operator (FBO) providing services from this apron. There are five undeveloped lease lots available adjacent to the GA Apron.

# 4.0 Cargo Facilities



Figure 4-1 Cargo Operations on the paved portion of the apron

Cargo handling is done by two of the based operators at the airport, RAVN and Ryan Air. RAVN provides the ground handling for cargo shipped with RAVN and Northern Air Cargo (NAC) and Ryan Air provides the ground handling for cargo shipped with Everts Air Cargo.

# 5.0 Support Facilities



Figure 5-1 Fuel tank for the emergency generator, equipment enclosure with the electric enclosure and emergency generator.

The Electric Equipment Enclosure (Figure 5-1) and emergency generator are installed in separate rooms in the equipment enclosure located behind the SREB. The 60 KW emergency generator is a Generac unit built in 1997. There are two Constant Current Regulators (CCR) in the electric enclosure. The 20KVA CCR operates the runway lighting circuit and the 7.5 KVA CCR operates the taxiway lighting circuit. They are in operational condition but are at the end of their useful life. Both CCRs are fabricated by Crouse-Hinds.

The pilot controlled lighting is reported to work well to a distance of 20 miles and is of similar age as the other equipment. The electric enclosure itself is in good condition.



Figure 5-14 Snow Removal Equipment Building

The two-bay snow removal equipment building (SRE) (Figure 5-2) is in good repair and was recently improved with application of spray foam insulation in the interior. The overhead doors are old and should be replaced. The siding is also damaged near the previous location of the electric meter.

# 6.0 Access, Circulation and Parking

KSM is reached by road from St. Mary's and Pitka's Point year-round and the road Mountain Village in the summer. Parking is provided on individual lease lots for their associated business. Also, a large parking area is located east of RAVN's passenger and cargo service building.

# 7.0 Utilities

Alaska Village Electric Cooperative, Inc. (AVEC) provides electric power at KSM. The power is locally generated using a diesel turbine. A new wind tower is being installed as a joint venture between AVEC and Pitka's Point Native Corporation. The wind power project is expected to supplant 2,525 MWh/year of diesel-fuel generated power.

Telephone service is provided by United Utilities. Cellular phone service and internet is provided by GCI. The airport has a sewage lagoon located east of the airfield, approximately 1,500 ft. from

the closest point on Runway 16/34. Aviation and heating fuel is delivered by Crowley Petroleum Distribution.

# 8.0 Other Airport Uses

Boreal Fisheries, a lease tenant with two lease lots by the Yukon River, has been buying and processing fish from the local commercial fishermen. Their facilities were dormant during the 2017 fishing season and are currently for sale. These lease lots are not located on the airfield.

Appendix A – Existing Runway Conditions

	Existing Conditions				
	Runway 17	Runway 35	Runway 6	Runway 24	
Approach type	Precision	Non-precision	Visual	Visual	
Visibility minima (Lowest)	552 ft 3/4mile	508 ft 1 mile	1 mile	1 mile	
Approach procedures	LPV, RNAV/VNAV, RNAV, LOC/DME	LPV, LNAV/VNAV, LNAV	N/A	N/A	
Approach slope	50:1	34:1	20:1	20:1	
Departure Slope	40:1	40:1	N/A	N/A	
Runway Length	6,008	6,008	1,520	1,520	
Runway Width	150*	150*	60*	60*	
Runway Shoulder Width	-	-	-	-	
Runway Design Group	C-III-4000	C-111-5000	A-I-VIS	A-I-VIS	
Runway Surface	G	G	G	G	
Allowable Crosswind Component	16 Knots	16 Knots	10.5 Knots	10.5 Knots	
Runway Safety Area ( <b>RSA</b> )					
Length Beyond Departure End	195*	185*	300*	225*	
Length Prior to Threshold	185*	195*	225*	300*	
Width	300*	300*	115*	115*	
Runway Object Free Area ( <b>ROFA</b> )					
Length Beyond Departure End	1000	600	240	240	
Length Prior to Threshold	1,000	600	240	240	
Width	800	800	400	400	
Runway Object Free Zone ( <b>RFZ</b> )					
Length Beyond Departure End	200	200	200	200	
Width	400	400	250	250	
Approach <b>RPZ</b>					
Length	1,700	1,700	1,000	1,000	
Inner Width	500	500	500	500	
Outer Width	1010	1010	700	700	
Acres	29.47	29.47	13.77	13.77	
Departure <b>RPZ</b>					
Length	1,700	1,700	1,000	1,000	
Inner Width	500	500	500	500	
Outer Width	1010	1010	700	700	
Acres	29.47	29.47	13.77	13.77	
Runway Separation to:					
Hold Position	250	250	200	200	
Aircraft Parking	500	500	200	200	

Note: All dimensions in feet, except RPZ acreage, G = Gravel.

\*Dimension measured in the field.

All dimensions are based on published information unless measured in the field

Appendix B – Runway Length Requirements

This table summarizes the operational needs for a selection of aircraft currently using the St. Mary's Airport (KSM). The numbers presented are based on interviews with chief pilots and operations directors at several of the air carriers using KSM.

The "2017 Operations" column includes the number of operations by each aircraft reported in 2017.

The "Minimum Runway Length" is based on air carrier operational specifications, and represent the shortest runway length needed for takeoff and landing with reduced/restricted loads.

The "Full Payload Runway Length" column represent the runway length each operator desires for operations with full payloads in normal wind and runway conditions. Non-ideal environmental conditions may result in reduced payloads even at this length.

"Preferred Runway Length" represents the runway length that each operator stated would provide an acceptable margin of safety to account for non-ideal runway conditions during fully loaded operations.

	ARC	2017 Operations	Minimum Runway Length (ft.)	Full Payload Runway Length (ft.)	Preferred Runway Length (ft.)
DHC8-100 DASH 8	A-III	765	4000	5000	6000
BEECH 200 KINGAIR	B-I	6	3300	4000	-
CESSNA 182	B-I	1000	2000	2000	2000
Bombardier Learjet 35	B-I	8	5000		
Cessna Conquest	B-II	12	3885	4000	-
BEECH 1900 A/B/C/D	B-II	993	2400	5000	6000
DOUGLAS DC-6A	B-III	197	4500	5000	6000
BOEING 737-100/200	C-III	186	6000	6000	6000
BOEING 737-700	C-III	2	6000	6000	6000
LOCKHEED L100-30	C-IV	5	5000	5000	6000

Appendix C – Inspection Report and Issues Identification



# MEMORANDUM

DATE: May 3, 2018

TO: Christopher Johnston, PE., Norther Region DOT&PF Project Manager

FROM: Tor Anderzen, PE

RE: Issues Observed During St. Mary's Airport Site Inspection

HDL Engineering Consultants, LLC (HDL) has prepared the following list of issues observed during our airport inspection on April 26 and 27, 2018. The issues we observed include:

# <u>Runway 17/35:</u>

- The runway crown has been minimized by maintenance and potential subgrade settlement. A geotechnical investigation of the runway embankment is recommended to determine the thermal stability of the runway.
- The runway was resurfaced with a thin lift of local crushed aggregate in 2017. The work was performed by DOT&PF maintenance and operation staff. EK-35 dust palliative was applied to the aggregate prior to final grading and compaction. The resurfacing provided a slight crown and better drainage, but a major runway resurfacing project is needed using E-1 crushed aggregate surface course to re-establish grade and provide a durable runway surface.
- Surfacing is segregated at touchdown locations and at thresholds from wheel impact, jet blast, and propeller wash.
- The runway embankments show signs of differential settlement. Water from runoff is concentrated in low areas, causing minor erosion along the embankment slopes.
- The runway surface is soft and rutted in some locations.
- The threshold of Runway 17 is particularly soft for extended periods of time.
- Rounded aggregate from a local material source was placed on the surface of the Runway Safety Area beyond the Runway 35 threshold. This rock is loose and not suitable for surfacing. The rock easily migrates from jet blast and propeller wash as well as strong wind events.
- Water ponds on the runway west of the Taxiway B intersection.
- The inlet to the existing culvert below the runway to the east of the Taxiway B intersection clogs with gravel each spring.

CIVIL ENGINEERING

GEOTECHNICAL ENGINEERING

#### TRANSPORTATION ENGINEERING

- ENVIRONMENTAL SERVICES
  - PLANNING

SURVEYING & MAPPING

# CONSTRUCTION ADMINISTRATION

MATERIAL TESTING

RIGHT-OF-WAY SERVICES RE: Issues Observed During St. Mary's Airport Site Inspection May 3, 2018 Page 2 of 5

- Gravel surfacing has migrated from jet blast and propeller wash and partially covered the Runway 17 MALSR threshold lights.
- The existing High Intensity Runway Lighting (HIRL) system is at end of life.
- The lighted runway signs are commonly out of service because the bulbs burn out. The handholes for some of the signs do not have lids or are buried. The existing signs should be replaced with the runway lighting system.
- Runway 35's Runway End Identifier Lights (REILs) reportedly operate erratically during cold weather events. This equipment is owned and maintained by the FAA.
- Runway 17's Medium Intensity Approach Lighting System (MALSR) is not operational. This equipment is owned and maintained by the FAA.
- There is no secondary wind cone at the threshold of Runway 17. The primary wind cone did not appear easily visible from this threshold at the time of the inspection.
- The intersection of Runway 35 and Runway 06 may be an area of confusion for pilots that are not familiar with the airport. The outboard Runway 35 threshold lights are located within the drivable surface at the intersection of Runway 35 and Taxiway A. The Runway 35 REILs are displaced down runway from the Runway 35 threshold.
- The gravel surface of the Runway Safety Area (RSA) was measured in the field to extend approximately 185 feet beyond the end of Runway 35. The FAA requires the RSA to extend 1,000 feet beyond the threshold for a C-III runway.
- The gravel surface of the RSA was measured in the field to extend approximately 195 feet beyond the end of Runway 17. The FAA requires the RSA to extend 1,000 feet beyond the threshold for a C-III runway.
- The gravel surface of the RSA was measured in the field to be approximately 300 feet wide. The FAA requires a 500-foot wide RSA for a C-III runway.

# Runway 06/24:

- The runway crown has been minimized by maintenance and potential subgrade settlement. A geotechnical investigation of the runway embankment is recommended to determine the thermal stability of the runway.
- The runway is routinely regraded to smooth out heaved and settled areas. A major runway resurfacing project is needed using E-1 crushed aggregate surface course to re-establish grade and provide a durable runway surface.
- The runway surface is soft and rutted in some locations.
- Surfacing is segregated at touchdown locations and at thresholds from wheel impact and propeller wash.



RE: Issues Observed During St. Mary's Airport Site Inspection May 3, 2018 Page 3 of 5

- The runway embankments show signs of differential settlement. Water from runoff is concentrated in low areas, causing minor erosion along the embankment slopes.
- Rounded aggregate from a local material source was placed on the surface of the Runway Safety Area beyond the Runway 24 threshold. This rock is loose and not suitable for surfacing. The rock easily migrates from propeller wash and strong wind events.
- The existing Medium Intensity Runway Lighting (MIRL) system is at end of life.
- The lighted runway signs are commonly out of service because the bulbs burn out. One of the signs has a non-standard, blank, aluminum panel. The existing signs should be replaced with the runway lighting system.
- The gravel surface of the Runway Safety Area (RSA) was measured in the field to extend approximately 225 feet beyond the end of Runway 24. The FAA requires the RSA to extend 240 feet beyond the threshold for an A-1 runway.
- The gravel surface of the RSA was measured in the field to extend approximately 300 feet beyond the end of Runway 06. The FAA requires the RSA to extend 240 feet beyond the threshold for an A-I runway.
- The gravel surface of the RSA was measured in the field to be approximately 115 feet wide. The FAA requires a 120-foot wide RSA for an A-I runway.

#### <u>Taxiways:</u>

- The crown of the taxiways has been minimized by maintenance and potential subgrade settlement. A geotechnical investigation of the taxiway embankment is recommended to determine the thermal stability of the taxiway.
- The taxiways are soft when wet and rutted by taxiing aircraft.
- The existing Medium Intensity Taxiway Lighting (MITL) system is at end of life.
- Airport users have complained that the taxiway edge lights along the radius of the taxiway intersection with the runway and apron are spaced too far apart and do not adequately delineate the edge of the taxiway.
- The lighted taxiway signs are commonly out of service because the bulbs burn out. The existing signs should be replaced with the runway lighting system.
- The MITL does not extend the full distance between runway and apron.
- Rapid surface drainage occurs in the ditch line south of Taxiway B. The ditch is experiencing erosion and baffles have been installed to reduce the velocity of the flow.
- The inlet to the existing culvert below Taxiway B near the intersection with Runway 17/35 clogs with gravel each spring.



*RE:* Issues Observed During St. Mary's Airport Site Inspection *May 3, 2018 Page 4 of 5* 

#### Main Apron:

- The gravel apron areas are soft and need to be resurfaced
- The asphalt in the paved portion of the runway is at end of life. Portions of the pavement are peeling up due to aircraft traffic and occasional lock wheel turns by heavy aircraft.
- Aircraft de-icing operations are routinely performed in a gravel area on the northwest corner of the apron. The area is soft, has settled, and is in need of repair.

#### General Aviation Apron:

• The general aviation apron is used by light aircraft and is occasionally used to temporarily stockpile or stage equipment. The apron appeared in good condition and no issues were reported at the time of the inspection.

#### Snow Removal Equipment Building:

• The existing three-bay SREB was in good condition at the time of the inspection. Spray insulation was recently added to the interior of the building to reduce heat loss in the winter. The garage doors of each of the three bays are old and will likely need to be replaced in the near future.

#### Other DOT&PF Owned Equipment:

- The airport beacon is installed on top of the DOT&PF SREB. The beacon functions intermittently and need to be replaced. The beacon plat form is reportedly in good condition and may be suitable for re-use.
- The electrical enclosure is located behind the SREB. The enclosure houses two constant current regulators, and controls for the airfield lighting systems. It also houses the emergency generator. This equipment is in operational condition but nearing the end of useful life.
- A lighted primary wind cone is located in the infield area west of the Main Apron. The wind cone was in working condition at the time of the inspection. Installation of a new internally lit primary wind cone is recommended with the lighting system replacement.
- The existing segmented circle is located around the primary wind cone. The segmented circle consists of partially buried 55-gallon drums, painted orange. Installation of a new panel-style segmented circle is recommended when the primary wind cone is replaced.

#### FAA Owned and Maintained Facilities:

• The Runway 35 REILs operate intermittently, as mentioned above. This equipment needs to be repaired or replaced.



RE: Issues Observed During St. Mary's Airport Site Inspection May 3, 2018 Page 5 of 5

- The Runway 17 MALSR is not operational. This equipment needs to be repaired or replaced.
- The Runway 17/35 VASI equipment was operational during the inspection and no issues were reported.
- A non-directional beacon (NDB) is installed east of the airport. The NDB is out of service indefinitely.
- An Automated Weather Observation System (AWOS) is installed on the northeast side of Runway 35. The AWOS is frequently out of service leading to interruptions in passenger, mail, and cargo traffic.
- A Remote Communications Outlet (RCO) is located east of the apron. The RCO is reported operational but there are reportedly line of sight issues between the AWOS and RCO that occasionally prevent RCO from receiving the AWOS signal. This issue needs to be investigated and resolved.
- The localizer and DME are located south of Runway 35 and are subject to occasional outages. The equipment is mounted on a deteriorating wooden structure that is, weathered. The power supply wires are exposed at the edge of the road and covered with a temporary junction box.



Appendix B: Aviation System Plan Resources

# DOT&PF Aviation System Plan Information used for the St. Mary's Airport Aviation Activity Forecast:

#### Two documents were used

1. Mission, Goals, Measures and Classifications, November 2011 <u>http://www.alaskaasp.com/admin/Docs/AASP%20Mission%20Goals%20Measures%20Classifications%2</u> <u>0-%20for%20website.pdf</u>

Section 3.2.2 What is the Regional Class? Pages 13-15

2. Alaska Aviation System Plan Forecasts, June 2011

http://www.alaskaasp.com/admin/Docs/AASP%20Forecast%20Report%2006%2013\_2011R.pdf

Alaska in General

- Annual growth from 2006-2030 is estimated at 0.9%
- Almost half of the carriers surveyed indicated that there are airports they don't serve due to inadequate facilities, lack of runway length, or weather conditions. (par. 3, pg. 12)
- In general, Alaska experienced a recession in 2008, which can be seen reflecting in decreased air traffic (par. 5, pg. 14)
- The Beech King Air 200 is the critical aircraft for emergency responders (pg. 45, para. 6)

Bethel (nearby census district)

- Same pages as Wade Hampton below.

Wade Hampton (census district)

- Population Forecast pg. 8
- Historical Population pg. 62
  - Annual growth rate from 2006-2030 is estimated 1.4%, above state average
- Historic Employment pg. 63
  - Half of the employment is government-related
- Historic Personal Income pg. 64
- Historic Per Capita Personal Income pg. 65
- Personal Income Projection pg. 68
- Historical and Forecasted Passenger Movement pg. 140

#### St. Mary's Airport (KSM)

- KSM is ranked 20th over busiest airport (pg. 21)
- Passenger Traffic forecast on pg. 28
- Cargo Traffic forecast on pg. 34
- Critical aircraft forecast on pg. 57
  - Interesting to note they assumed a 737-200. In this report, they mention that 500 flights for critical aircraft is a bad criteria for rural Alaska, and they use 50 as a critical number.
    "intended to reflect the fact that in Alaska many essential air transportation functions occur on an infrequent basis." (pg. 43, footnote)
- Historical ACAIS Counts of Passenger Enplanements on pg. 75
- Historical T-100 Counts of Passenger Enplanements on pg. 81

- Historical T-100 Counts of Enplaned and Deplaned Cargo on pg. 87
- Historical T-100 Counts of Commercial Aircraft Operations on pg. 93
- Summary of Commercial Departures on pg. 121
- Passenger Enplanement Forecast on pg. 145
- Enplaned and Deplaned Forecast on pg. 158
- Commercial Operations Forecast on pg. 168
- Based Aircraft Forecast on pg. 179
- General Aviation Operations Forecast on pg. 223

There were no references made to # students, commercial fishing, or river/barge traffic

The tables below are in the report, but are likely duplicates of the tables in the appendices referenced above.:

Table 2.1 (pg. 8) has population forecasts for the state and individual areas.

Table 3.1 has historical passenger activity (pg. 15 & 16)

Table 3.2 has historical enplaned and deplaned cargo tonnage (pg. 17)

Table 3.3 has historical counts of commercial aircraft operations (pg. 19)

Table 7.1 has passenger forecast data for Bethel (pg. 26-28)

Table 8.1 has cargo forecast data (pg. 32-34)

Table 9.1 has commercial aircraft forecast (pg. 36)

Table 11.1 has general aviation based aircraft forecasts

Table 13.2 has forecasted critical aircraft by airport (pg. 46-59)

Appendix C: Air Carrier/Airport User Interviews and Phone Logs
Contact Log					
Date Contacted	Contact Method	Initials	Entity	Contact Name	Topics Di
3/30/2018	Phone		DOT	Abby White	
4/10/2018	907 240-9508	ALT	Alaska Air Carriers Association	Steve Melchert	Left messag
4/10/2018	Phone 907 277-0071	ТІА	Alaska Air Carriers Association	lane Dale	Spoke with that Jane D
1/ 10/ 2010					
					David Olser
4/10/2018	Phone 907 443 5422	TJA	Bering Air, Inc.	David Olsen	Will follow
4/10/2018	Ph. 907 450 2345	TJA	Tatonduk Outfitters (everts Air)	Zachary Adams	Survey sho
4/10/2018	ph 907 226 8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJI	v Luke Hickerson	Left Messag Thanked Za
4/10/2018	zadams@evertsair.com	TJA	Tatonduk Outfitters (everts Air)	Zachary Adams	Confirmed
4/16/2018	907 458 6794	TJA	DOT	Bill Giltner	Talked about
4/16/2018	ph 907 226 8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJ	v Luke Hickerson	Left Messag
4/16/2018	email	TJA	Alaska Air Carriers Association	Jane Dale	Sent Jane t
4/16/2018	907-248-7025	TJA	Grant Aviation	Dan Kenesk	Left messag
					Spoke with
4/16/2018	907 249-5144	TJA	NAC	Kayla Vesi, Costume	er § Johnson Dii
					Walton call
					nothing abo
4/16/2018	907-891-0171	TJA	City of St. Mary's	Walton Smith	show up.
4/17/2018	907-450-2345	TJA	Tatonduk Outfitters (everts Air)	Zachary Adams	Go through
4/17/2018	in person	TJA CC	NAC	Don Ruhoff	went throu
					Went thoug
					don't have
4/17/2018	in person	TJA CC	ACE	Steve Melchert	cargo servio
4/17/2018	in nerson		ΒΔΛΝ		nerson to ta
-/1//2010					stopped by
4/17/2018	in person	TJA CC	Lynden Air Cargo		my card and
					We stopped
4/17/2018	in person	TJA CC	Pen Air		our survey
4/17/2018	in person	TJA CC	Ryan Air	Ben Ryan/	we stopped
4/18/2018	907 266 8421	ALT	Hageland/RAVN/ERA/Frontier Flying Service, JJI	v Evan Veal	I called to s
4/19/2018	907 761 6271	TJA	Division of Forestry	Steve Elwell	Called to se

## iscussed

ge for Steve about the survey.

Carrie-Ann, Gave background to our survey and conrifmed vale is the right person to send the survey to.

n is the director of operations, survey should be sent to him. up with call when he has completed the survey

uld be sent to Zach, we set up time for interview on April 17. ge for Luke about the survey

- ach for taking my call earlier, emailed survey and survey link.
- interview for April 17 at 8:30
- ut electrical system in St. Mary's
- ge for Luke about the survey
- he Surveys
- ge for Dan

Kayla, she is going to set up a meeting with either Brandon rector of Operations or Don Ruhoff, traffic department led to share his concern about the mailer that went out. It says out shortening the runway, he is worried that no-one will

survey and Issues identification

gh interview questionaire and issues identification questions gh questionaire, ACE has very limited operations to KSM. They the by-pass mail services that make it cost effective to offer ce to St. Mary's

to schedule intervew. Evan Veal on cell 266-8421 is the alk with. We left card and survey

r, spoke with a scheduler named Adam, he took the survey and d will see that survey is completed

d by, admin closed today, spoke with Songray Tanaka. He took and card. He would forward to flight operations.

by, left survey and card and asked for a call back.

set up a meeting, Evan out sick today

et up meeting and verified runway need for Convair 580

Contact Log					
Date Contacted	Contact Method	Initials	Entity	Contact Name	Topics Di
4/19/2018	907 266 8421	TJA	Hageland/RAVN/ERA/Frontier Flying Se	rvice, JJN Evan Veal	I called to se
					Spoke abou
					which need
					load take of
4/19/2018	in person	TJA	Division of Forestry	Steve Elwell	Fairbanks fo
4/19/2018	907 243 3331	ALT	NAC	Don Ruhoff	Called to fo
					Called Tad,
					operate on
					operations.
					round opera
4/23/2018	907 712 4883	TJA	Life Med	Tad Fullerton	are also tim
					Left Messag
4/23/2018	907 243-3331	TJA	NAC	Don Ruhoff	up with the
					Zach is out o
4/23/2018	907 450-2345	TJA	Tatonduk Outfitters (everts Air)	Zachary Adams	to email hin
4/23/2018	907 243 6150	TJA	Lynden Air Cargo	Joe Bates	Left Messag
4/23/2018	907 266 8421	TJA	Hageland/RAVN/ERA/Frontier Flying Se	rvice, JJN Evan Veal	Left messag
					Evan return
					said to ema
4/23/2018	907 266 8421	TJA	Hageland/RAVN/ERA/Frontier Flying Se	rvice, JJN Evan Veal	scheduel a r
					Joe returne
					max load of
					to increase
					Adam woul
4/23/2018	907 249 4118	TJA	Lynden Air Cargo	Joe Bates	sure it get c
					Followed up
					that they ne
4/23/2018	email	TJA	Tatonduk Outfitters (everts Air)	Zachary Adams	length provi
					Sent survey
4/23/2018	email	TJA	Hageland/RAVN/ERA/Frontier Flying Se	rvice, JJN Evan Veal	week.
					Sent email t
4/23/2018	email	TJA	NAC	Don Ruhoff	their 737-20
					They have o
					200. They d
					have is that
4/24/2018	907 356-5520	TJA	Alaska Fire Service (BLM)	John Softich	available. Jo
4/24/2018	907 458-6794	ALT	DOT	Erik Weingarth	Called Erik t

## scussed

et up a meeting, Evan out sick today

t operational needs for the Convair 580, C130, and Dash 8 5,000'; 5,000'; and 4,000' of runway respectively for safe full ffs. Steve refered to John Softage with Alasak Fire Service in or the right person to take the survey

llow up on our meeting Tuesday, Don is out until Monday.

Life Med flies into St. Mary's with their King Airs; which can as little as 2,400 ft but 4,000 is optimal for year-round . For the Learjet tjhey need 6,000 feet of runway for yearrations but they have not used the learjet for St. Mary's. There has when patients take the Caravan to Bethel.

ge for Don, that I would like to send him our notes and follow questions he was passing on to their pilots

- of the office for most of the week. Receptionist Shiela told me m as he will receive emails
- ge for Joe asking him to call me back
- ge for Evan about the survey

ed my call, we spoke about the project and oru survey. Evan il I tto him. We compared calendars and decided to try to meeting next week

ed my call. Confirmed that C130 need 5,000 feet runway with f fish. They have occasional charter and would have capacity their operations. I asked about the survey. Joe confirmed that I dbe the one that got it. He will reach out to Adam and make completed and turned in.

o on our phone interview last week and Zachary confirmed eed 5,000 feet for operations with the DC6. Additional runway ides layers of safety, but is not operationally required. to Evan with listing of possible times to set up a meeting next

to follow up on survey and to ask for written statement of 00 vs. 737-300 business plan.

operations in St. Marys, usualli with Caravan and Casa 212to not have any operational constraints at all. The issue they t some years you can buy fuel there, others fuel is not ohn gave me his email address to send him the survey talked about inspection plans and oru itinerary

Contact Log					
Date Contacted	Contact Method	Initials	Entity	Contact Name	Topics Dis
					I called to as
					to coordinate
					setting up in
4/25/2018	907 274 5600	TJA	Northern Economics	Michael Fisher	on site
					I emailed Eri
4/30/2018	email and call 907 438 6050	TJA	DOT	Erik Weingarth	confirm nam
					Kayla emaile
					Operations h
4/30/2018	email	TJA	NAC	Kayla Vesi, Costumer	Shave for NAC
					emailed with
4/30/2018	email	IJA	Northern Economics	Michael Fisher	tomorrow ar
					called to talk
Г /1 /2019	007 451 2242	TIA	DOT	Shawn Critas	Shawn share
5/1/2018	907 451 2242	IJA	DOT	Snawn Crites	St. Mary s
E /1 /2019	007 274 5600	TIA	Northorn Economics	Michael Ficher	Called and le
5/1/2018	907 274 3000	IJA	Northern Economics	MICHAEL FISHER	Called and a
5/1/2018	907-243-7248	TIA	Lynden Air Cargo	Mark Greig	voicemail as
5, 1, 2010	507 210 7 210	1071			
5/2/2018	907 249 5144	ALT	NAC	Kayla Vesi, Costumer	SCalled to ask
5/2/2018	907 266-8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJN	/ Evan Veal	Called and le
					Emailed Brar
5/2/2018	email	TJA	NAC	Brandon Johnson	Ruhoff.
					Called to ask
5/2/2018	907 451-5226	TJA	DOT&PF	Penny Adler	inspection w
					Spoke with P
5/3/2018	907 451-5226	TJA	DOT&PF	Penny Adler	the letter.
5/4/2018	907 266-8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJN	Evan Veal	Called and le
					Called and as
5/4/2018	907-243-7248	TJA	Lynden Air Cargo	Mark Greig	voicemail asl
5/4/2018	907 243-3331	Scott and	NAC	Don Ruhoff	Scott asked [
5/4/2018	907 274 5600	TJA	Northern Economics	Michael Fisher	Set up meeti
5/7/2018	907 266-8421	TIA	Hageland/RAVN/FRA/Frontier Flying Service 11	Fvan Veal	Evan will try
5,7,2010	507 200 0121	137 (			Brandon retu
5/8/2018	email	ALT	NAC	Brandon Johnson	the emailed
5/8/2018	907 249-0245	ALT	Lynden Air Cargo	Mark Greig	Called and sp
-, -,					Called to ask
5/9/2018	907 458 6794 (office) 907 371-6206 (cell)	TJA	DOT	Bill Giltner	message on
					Left message
5/9/2018	907 266-8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJN	Evan Veal	2:41, we set
					Evan called b
5/9/2018	907 266-8421	TJA	Hageland/RAVN/ERA/Frontier Flying Service, JJN	Evan Veal	asked if we c
5/10/2018	in person at 4700 old international airport road in anchorage	Scott and	Hageland/RAVN/ERA/Frontier Flying Service, JJN	Evan Veal	interview wit

# scussed

sk if Mike has set up an interview schedule for St. Mary's and te our efforts while on site. Mike has not had much luck interviews and planned on stopping by various entities while

ik to thank him for all the help during our field visit and to nes of his staff and the RAVN station manager

ed to let me know that Brandon Johnson, Director of has agreed to answer any further questions that we may C

th questions about schedule update for the meeting nd to ask hf he was available to join the meeting

about the last CIMP inspection in St. Mary's in July 2017.

ed his observations about field conditions and other needs in

eft a message with questions about schedule update for the lay

asked for Chief Pilot, Mark's name was confirmed. I left a sking that Mark call me back

for anumber to reach Mr. Johnson - left a message for Kayla eft voicemail for Evan

ndon with followup questions to the interview with Don

k if she could provide a copy of FAA inspection for St. Mary's, vas done by Gabriel Mann. Left Voicemail Penny, she will email the report and DOT&PF's response to

eft voicemail for Evan

asked for Chief Pilot, Mark's name was confirmed. I left a sking that Mark call me back

Don to help us facilitate a meeting next week.

ing for Tuesday May 8

to schedule us for 30 minutes on Wednesday the 9th curned calls and email by email, he will provide feed back on questions by end of this week.

poke of their operational needs at St. Mary's

about a contact for maintenance of FAA equipment. Left Cell phone.

e to follow up about a meeting today. Evan called back at t up a meeting for 4 pm

back again at 3:20 pm, he had to hop on a plane at 4 and could move meeting to tomorrow at 12:30 - 1:30

ith Evan Veal

Contact Log					
Date Contacted	Contact Method	Initials	Entity	Contact Name	Topics Di
5/10/2018	907 266 8306	ALT	Corvus	Harold Townsend	called to arr emailed to t
5/10/2018	email	TJA	Corvus	Harold Townsend	survey.
5/14/2018	907 266 8306	TJA	Corvus	Harold Townsend	called to arr
5/14/2018	email	TJA Mike	FAlaska Commercial	Rocky Frerichs	Set up meet
					Called to ta
					is unavalabl
5/15/2018	907 274 5600	IJA	Northern Economics	Michael Fisher	reach out to
					Called to se
					take off in a
					we confirme
5/15/2018	907 632 5166	ALI	Alaska Commercial	Jeff Cichosz	10:30 am
5/15/2018	907 266 8306	IJA	Corvus	Harold Townsend	Called to arr
5/15/2018	907 371 6206	TIA	DOT	Bill Giltner	with EAA
5/15/2018	307 371 0200	11A	001	bii dittiei	followed un
5/15/2018	email	TJA	NAC	Brandon Johnson	their answe
					Called to fo
5/15/2018	907 438 6200	TJA	DOT	Erik Weingrath	electrician t
					Called to co
5/15/2018	907 274 5600	ALT	Northern Economics	Michael Fisher	May 18th
					Called to sta
5/15/2018	907 227 9217	TJA	Northern Economics	Dick Tremain	schedule all
5/16/2018	907 266 8306	TJA	Corvus	Harold Townsend	Harold retu
5/17/2018	907 266 8306	ALT	Corvus	Harold Townsend	Harold calle
5/17/2018	907 266 8306	TJA	Corvus	Harold Townsend	Taled about
					Spoke with
					maintenanc
					airports he
					aids once ba
					One of the
					repair it. Wi
					regional flig
5/18/2018	907 438 6200	ALT	DOT	Erik Weingrath	staff.
					Dick set up
					working on
5/18/2018	email	ALT	Northern Economics	Dick Tremain	FishPeople
5/18/2018	email	TJA	KwikPak	Jack Schulteis	Jack confirn
F /4 0 /204 0	007 462 2270				James is mo
5/18/2018	907 403-2270	IJA	Coast Guard	James Helfinstin	get pointed

### iscussed

range survey and interview - left message follow up on voicemail and give project background and

range survey and interview - left message ting for Friday May 18

Ik about what we do since Rocky Frerichs Alaska Commercial le to meet all week. Time is slipping away so we decided to Jeff Cichosz and see if he can meet with us this week. e if he was available to meet this week, he was just about to plane and asked that I text him, which I did. Through texts ed a meeting on AC office in Anchorage on Friday May 18th at

range survey and interview - left message d my call from may 8th, refered to Erik Weingarth for contact

on the email from May 8, the executive team has provided er.

llow up on email from yesterday and to ask about FAA hat takes care of the Navaids and weather station onfirm that we have a meeting with Jeff Cichosz at 10:30 on

art planning our phone calls for fisheries next week. Dick will meetings.

rned my call, we set up a teleconference for May 17 at 1 pm ed to reschedule for 3:30 PM today

survey questions and issues identification

Erik about size of maintenance staff, Erik confirmed 3 e staff and one mechanic. Erik also gave the full list of manages (9 total). He will email FAA contact for nav and vis ack in the office. The NDB has been out for a few years now. Towers was damaged in a storm and FAA decided to not ith GPS few rely on the NDB it was mostly used by the ghts. Questions about the Glideslope are best directed to FAA

a teleconference with KwikPak for May 22 at 9:00 AM. Still setting up conference calls with Boreal Fisheries and

ned meeting for Tuesday at 9:00 AM

ore familiar with Bridges. The person to talk with, or at least in the right direction is Paul Webb 907 463-2253

Contact Log					
Date Contacted	Contact Method	Initials	Entity	Contact Name	Topics Di
					I called Paul
5/18/2018	907 463-2253	TJA	Coast Guard	Paul Webb	asking for a
5/18/2018	In Person	TJA Mike	FAlaska Commercial Company	Jeff Cichosz, John Li	ba Met at their
					Called and c
					David will re
5/18/2018	907 350-0402	TJA	NAC	David Squier, VP of	Op respond.
					Harold follo
5/18/2018	email	TJA	Corvus	Harold Townsend	he sent Isad
					Called front
					pilot and I w
5/21/2018	503 640 3711	TJA	Aero Air (Life med Jet service in AK)	Vince Hamblin	for my call a
5/22/2018	503 640 3711	ALT	Aero Air (Life med Jet service in AK)	Vince Hamblin	Left messag
5/22/2018	conference call 7127757031	TJA, Dick	1 KwikPak	Jack Schulteis	Conference
5/22/2018	conference call 7127757031	TJA, Dick	1 Boreal Fisheries	Randy Crawford	Conference
5/23/2018	503 640 3711	TJA	Aero Air (Life med Jet service in AK)	Vince Hamblin	Left messag
5/24/2018	conference call 7127757031	TJA, Dick	1Boreal Fisheries	Kip Baratof	Conference
					talked abou
5/29/2018	conference call 7127757031	TJA	Northern Economics	Mike Fisher and Dic	k T Fisheries, ar
6/11/2018	907 266 8306	TJA	Corvus	Harold Townsend	Left messag
6/11/2018	907 266-8421	TJA	Hageland/RAVN/ERA/Frontier Flying Servi	ice, JJN Evan Veal	Left messag

# scussed

- l Webb left a message explaining the reason for the call and call back.
- r office, see separate notes prepared
- discussed NAC's business plan going forward for St. Mary's.
- eview the notes form the meeting with Don Ruhoff and
- wed up with traffic information and forwarding of the email lora about impact of shortened runway
- desk, spoke with Dani she told me Vince Hamblin is chief
- vas transferred to his extension, left voice mail, giving reason
- and asked for a call back.
- ge asking for call back
- call to talk about KwikPak fisheries
- call to talk about Boreal fisheries
- ge asking for call back
- call to talk about FishPeople operations in St. Mary's
- ut our findings from our conference calls with KwikPak, Boreal nd FishPeople
- ge about ops manual for Dash 8
- ge about ops manual for Dash 8



	RECORD OF TELEPHONE CONVERSATION					
	Date:	4/23/2018	Project No:	17-037		
	Time:	1:23 PM	Telephone:	(907) 266-8421		
	Call to:	Tor Anderzen, P.E.	Call from:	Evan Veal, Hageland Aviation		
	RE:	Follow up on my message				
CIVIL ENGINEERING	Evan return	ed my call left on April 18, 2018.				
GEOTECHNICAL ENGINEERING	l informed h would like to	I informed him that we are working on an aviation activity forecast for St. Mary's and that we would like to send him a survey to better understand RAVN's operations and operational				
TRANSPORTATION ENGINEERING	needs at the	e St. Mary's Airport.				
ENVIRONMENTAL	Evan asked me to email him the survey.					
PLANNING	We also determined that an in person meeting would be beneficial to further discuss RAVN's operations. A meeting date has yet to be determined but will be scheduled via email in the upcoming weeks.					
SURVEYING & MAPPING						
CONSTRUCTION ADMINISTRATION						
MATERIAL TESTING						
RIGHT-OF-WAY SERVICES						
	H:\jobs\17-037 Involvement\S	7 St. Mary's Airport Planning (DOT-NR) surveys\Collected surveys\phone logs\2	02 - Condition and Nee 0180423 Telephone Re	ds Assessment\Public cord Evan Veal Hageland.docx		



	RECOR	D OF TELEPHONE CC	NVERSATION			
	Date:	4/23/2018	Project No:	17-037		
	Time:	2:03 PM	Telephone:	(907) 249-4118		
	Call to:	Tor Anderzen, P.E.	Call from:	Joe Bates, Lynden Air Cargo		
	RE:	Follow up on my message				
CIVIL ENGINEERING	Joe returne	d my call left on April 23, 2018	3.			
GEOTECHNICAL ENGINEERING	I informed h and that we	I informed him that we are working on an aviation activity forecast for the St. Mary's Airport and that we stopped by last week with an aviation survey. The survey was given to Adam. Joe confirmed he will reach out to Adam and make sure to complete the survey.				
TRANSPORTATION ENGINEERING	Joe confirm					
ENVIRONMENTAL SERVICES	we also spoke about Lynden's current operations and operational needs.					
PLANNING	destination flight. Lynden's main operations at St. Mary's involves flying out fish when NAC and Everts are at capacity.					
SURVEYING & MAPPING	Lynden wou dependent	uld like to increase their share on how much fish is caught ar	of the St. Mary's mandor if additional cap	rket but that is primarily acity is needed. Majority of		
CONSTRUCTION ADMINISTRATION	Lynden's operations are from Emmonak, from where they transport fish all summer. Joe says Lynden has capacity to grow in St. Mary's for a C130 with full load of fish, they need 5,000 feet of runway to take off.					
MATERIAL TESTING						
RIGHT-OF-WAY SERVICES						
	H:\library\Forn	ns and Letterhead\Templates\3335 A	arctic - HDL\Telephone Re	ecord.doc		



	RECORD OF TELEPHONE CONVERSATION						
	Date:	04/23/2018	Project No:	17-037			
	Time:	09:10 AM	Telephone:	(907) 712-4883			
	Call to:	Tad Fullerton, Life med Pilot	Call from:	Tor Anderzen			
	RE:	St. Mary's aviation activity fore	cast and survey				
CIVIL ENGINEERING	Telephone	call to Tad Fullerton, Beechcraft	1900 pilot for Life N	1ed.			
GEOTECHNICAL ENGINEERING	A brief proje at the St. M overall proje	ect background was provided an ary's Airport was being collected ect is to reconstruct airport surfa	d outlined that infor to prepare an avia ces.	mation about aviation activity tion activity forecast. The			
FRANSPORTATION ENGINEERING	We asked about Life Med's operations St. Mary's. Normally their operations are with King						
ENVIRONMENTAL SERVICES	why we hav 5,000 feet is	Air, they have Learjet capabilities and they could go in to St. Mary's, I ad said "I don't know why we have not used the Learjet for St. Mary's. 6,000 feet is certainly enough runway; 5,000 feet is what the Learjet needs, but in icy conditions it is good to know you have the					
PLANNING	additional 1	,000 feet. The optimal runway le	ngth for year-round	service is 6,000 feet.			
SURVEYING & MAPPING	For the King for year-rou	g Air, they can land and take off nd operations.	on as little as 2,400	feet. But 4,000feet is optimal			
CONSTRUCTION	It is also co	mmon that people take the "cara	van" to Bethel for tr	ansfer to life-med in Bethel.			
ADMINISTRATION MATERIAL	We asked to email the survey to Tad, he said he would be happy to help by taking the survey. He provided his email address and said he would try to complete the survey today. We followed up with an email to Tad, including the survey and thanking him for his participation.						
TESTING RIGHT-OF-WAY SERVICES							
	H:\jobs\17-037 Involvement\S	7 St. Mary's Airport Planning (DOT-NR) surveys\Collected surveys\phone logs\2	02 - Condition and Nee 0180423 Telephone Re	ds Assessment\Public cord Tad Fullerton.docx			



	RECOR	D OF TELEPHONE CON	VERSATION	
	Date:	4/23/2018	Project No:	17-037
	Time:	11:40 am	Telephone:	(907) 450-2345
	Call to:	Zachary Adams, Everts Air Cargo	Call from:	Tor Anderzen, P.E.
	RE:	St. Mary's aviation activity surv	ey	
CIVIL ENGINEERING	Called for Z	achary Adams to follow up on o	ur conversation and	survey.
GEOTECHNICAL ENGINEERING	Receptionis email.	at said he is out of the office for s	everal days and su	ggested that I send him an
TRANSPORTATION ENGINEERING				
ENVIRONMENTAL SERVICES				
PLANNING				
SURVEYING & MAPPING				
CONSTRUCTION ADMINISTRATION				
MATERIAL TESTING				
RIGHT-OF-WAY SERVICES				
		and Latterber - VT-mal-tV0005 Au		
		ns and Letternead Templates 3335 Arct		



	RECOR	D OF TELEPHONE CO	ONVERSATION			
	Date:	4/24/2018	Project No:	17-037		
	Time:	9:40 am	Telephone:	(907) 356-5520		
	Call to:	John Softich, Alaska Fire Service BLM	Call from:	Tor Anderzen, P.E.		
	RE:	St. Mary's aviation activity s	survey			
CIVIL ENGINEERING	On April 24	, 2018, Tod Anderzen with H	DL Engineering Const	ultants, reached out to John		
GEOTECHNICAL ENGINEERING	Sofitch with and ask if w complete th	Sofitch with Alaska Fire Service BLM, to talk about their operations at the St. Mary's Airport and ask if we can send him the survey. John gave me his email address and promised to complete the survey this week				
TRANSPORTATION ENGINEERING	John said the runways and taxiways at the St. Mary's Airport meet all their operational needs. They normally operate Cessna 208 and Casa 212-200 from St. Mary's.					
ENVIRONMENTAL SERVICES	The issue the	The issue they have is availability of fuel, some years they can buy fuel but other years no				
PLANNING	fuel is availa	able.				
SURVEYING & MAPPING						
CONSTRUCTION ADMINISTRATION						
MATERIAL TESTING						
RIGHT-OF-WAY SERVICES						
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#### MEMORANDUM

DATE: May 3, 2018

TO: File 17-037

FROM: Tor Anderzen P.E.

**RE:** Notes from Interview with RAVN station manager and lead pilot in St. Mary's

CIVIL

GEOTECHNICAL ENGINEERING

TRANSPORTATION ENGINEERING

ENVIRONMENTAL SERVICES

PLANNING

SURVEYING & MAPPING

CONSTRUCTION ADMINISTRATION

> MATERIAL TESTING

RIGHT-OF-WAY SERVICES On April 27, 2018, a field inspection was completed at St. Mary's Airport. Erik Weingarth, the Alaska Department of Transportation and Public Facilities (DOT&PF) Airport Manager for St. Mary's Airport, arranged for a part of the inspection team to meet with RAVN station manager Junior Reilly and RAVN lead pilot Mike Carpenter. Members of the inspection team included Christopher Johnston, DOT&PF; Michael Fisher, Northern Economics; and Tor Anderzen, HDL Engineering Consultants, LLC.

Erik started the meeting with thanking Junior and Mike for taking the time to meet with us, he then made introductions and gave a brief background to the project. Chris added that the aim of DOT&PF is to provide the runway and airport that is needed by the community. At this stage we are not considering a shortening of the runway which has been previously considered a few years ago. The purpose with our visit is to form a solid understanding of the airport users operations and operational needs at the St. Mary's Airport.

Jr. stated that a runway shortening is not likely to impact their operations. The Dash 8, which is the most demanding of their aircraft requires a runway length of about 4,000 feet, but can operate on as little as a 2,500 foot runway.

Chris observed that this is good information to have as we plan for construction. If we constructed a north and a south portion with a transition in the middle we would be able to provide enough runway for RAVN's operations.

Below is an outline of the comment from each individual at the meeting and the items discussed.

Jr.: The carriers that will notice a shortening of the runway are Northern Air Cargo (NAC) and Everts, as well as Lynden when they make their chartered trips to bring out fish. NAC has year round operations with their 737-200 which brings mail and cargo, they use RAVN's field personnel for ground operations. RAVN also act as an "in line" carrier to NAC. NAC shipments destined to other surrounding communities are reloaded onto smaller RAVN aircraft for continued transport to the final destination. This is how much of the groceries are brought to Mountain Village and Pilot Station.

Jr.: If the runway is shortened and the large cargo aircraft can no longer serve St. Mary's large cargo such as fridges or similar items cannot be loaded on the Dash 8 or B1900. This type of

#### *RE:* Notes from Interview with RAVN station manager and lead pilot in St. Mary's 5/3/2018 *Page 2 of 4*

cargo would in all likelihood have to be barged in to St. Mary's. Even more concerning regarding large cargo is the fish crates used for carrying fish. These crates do not fit in smaller cargo aircraft. Fish crates are a standard size and shipping in a smaller crate to get the catch out from St. Mary's would result in the need to re-load the fish in Anchorage.

Jr.: Our greatest concern at St. Mary's Airport is that FAA needs to update the AWOS. The existing AWOS has a lot of outdated equipment and is frequently out of service. When the AWOS is out of service, RAVN cannot give their pilots visual clearance to fly to St. Mary's even if it is a clear day. RAVN has lost hundreds of thousands of dollars in the last year alone to cancellations due to lack of certified weather. It is not only passengers that are delayed, freight and by-pass mail is delayed when the AWOS is down. Much of the consumables sold in the stores in St. Mary's, Mountain Village, and Pilot Station arrive as by-pass mail through St. Mary's Airport.

Jr.: The second concern for RAVN is that the MALSR is put back in service. While the MALSR in itself does not reduce approach minimums, it is a great resource for pilots in reduced visibility.

Jr.: RAVN uses the cross wind runway for operations with their Cessna 207s and 208s. The preferred runway is 17/35 and Jr. mentioned the following allowable crosswind components for operations. The Cessna 207 can operate with a crosswind of 20 knot (kn), the Caravan is fine with 30 kn. NAC will not land with more than 20 kn. For the Dash 8 the limit is 35 kn, with snow on the runway they reduce the permissible crosswind component to 15-18 kn for the Dash 8.

Jr.: The intersection of the runways have never been a problem, pilots are good at communicating with each other so that only one runway is used at a time.

Jr.: Would like to see the airport remain a gravel surface course. The airport was paved at one time, but asphalt was damaged by settlement and hard to maintain. Gravel is easier to maintain. If the runway paved the runway, where would we get sand for the runway anyway?

Erik: There are many things that goes with a paved runway, the Snow Removal Equipment we have is based on the needs to maintain a gravel runway. If we paved, we would need different plows and also brooms, which would also take more staff to operate.

Jr.: GA traffic is the greatest user of the cross-wind runway. The GA traffic picks up during the summer months, especially during the commercial fishing season.

Jr.: RAVN is expanding our service offering with added destinations such as Dillingham. For St. Mary's we have three based 207s and (two, soon three) based caravans. We have two cargo flights a day with the B1900 and one flight a day with the Dash 8, sometimes more often. In addition to the cargo traffic there is also the passenger traffic with service to surrounding villages and to Bethel. The schedule and size of operations for St. Mary's Airport is working well and we don't plan on any changes.

Jr.: DC6 have been the preferred cargo plane for Rural Alaska for a long time, when the DC6's stop flying, what aircraft will fill that void? NAC is retiring their 737-200 and there is no FAA



*RE:* Notes from Interview with RAVN station manager and lead pilot in St. Mary's 5/3/2018 Page 3 of 4

approved gravel package for the 737-300. The Gravel kit for the 200s does not fit the redesigned nose wheel assembly that the 300's have. Currently, there is no clear replacement for the DC6. We have seen Everts working on the DC6 engines before each flight out of St. Mary's - eventually it will not be economical to fly them any longer. The C130 is larger and can carry about twice the load of a DC6 but they need runway length to operate. We often see them barely clear the threshold lights when fully loaded with fish. When the DC6's are retiring, I think St. Mary's to get it flown out. The runway in Emmonak is not long enough to support cost effective loads with C130's.

Tor: I know that NAC evaluated ATR 72's as a replacement for the gravel service now performed with the 737-200. They could not get the idea to pencil out.

Michael and Tor: We wonder how freight cost would change with different aircraft use for freight

Jr. and Mike: discussed different aircraft and take off cargo loads (summarize in a table form below).

Carrier	Air craft	Max Cargo load (lbs.)
NAC	Boeing 737-200	25,600
Everts	McDonnel Douglas DC-6	24,500
RAVN	Beechcraft 1900	4,000
RAVN	Bombardier Dash 8	4,000
Lynden	Lockheed C130	55,000

During the commercial fishing season both NAC and Everts have daily flights, some days they also bring in Lynden to fly the whole catch out. Fish need to get to out within 24 hours of catch or they start to go soft and lose value. The fishing industry in St. Mary's is directly dependent on freight carriers to get their catch to market. To go downstream to Emmonak with boat is not an option the journey takes a whole day and there is no guarantee that the fish processors there have capacity to handle the additional catch.

Current backhaul rates with NAC are 25 cent per pound, with RAVN the backhaul rate is 29 cents per pound. Unsure what the backhaul rates are with Everts Air Cargo. To fly the fish with Lynden would require that you charter the plane, unless they can make a flag stop, that brings up the cost substantially. As a comparison, the cost to charter a Dash8 or B1900 is \$8,000 per flight.

Mike: The shorter RSA's have never been an issue here at St. Mary's, I would not want to see the reduction of any capability of this airport. The AWOS is a real problem for all operations here. I would really want to see the MALSR and NDB back in service, many pilots still navigate using the NDB's and rely on them. The MALSR back in service would improve visibility and safety. If RSA's are extended or thresholds moved, navaids will have to be moved as well – will they work after a relocation? We use the crosswind runway for both our 207 and 208 operations. There has never been an issue with the runway intersection, we pilots talk and keep track of each other.



*RE:* Notes from Interview with RAVN station manager and lead pilot in St. Mary's 5/3/2018 *Page 4 of 4* 

Mike: If I had my wish we would have windcones on both runway ends, good runway and taxiway lighting, approach lights back in service, and keep runway length.

Christopher: We have had conversations about the de-icing and consider to dedicate a paved portion of the apron for de-icing activities. In the upcoming project we will repave the paved part of the apron and are considering a paved dedicated de-icing area.

Mike: A paved de-icing area would be nice. We can do our de-icing on the paved part of the apron, it would not be that much trouble to move there. There used to be tie-downs on the main apron, are you going to put in new tie-downs? It would be nice to be able to tie down our aircraft especially when we have high wind forecasted.

Erik: The tie-downs were removed because they made snow removal and apron grading more complicated, we kept hitting them with the blade. But tenant tie-downs on your lease lot would be a matter for RAVN to decide.





	RECOR	D OF TELEPHONE COM	VERSATION		
	Date:	05/01/2018	Project No:	17-037	
	Time:	08:25	Telephone:	(907) 451-2242	
	Call to:	Shawn Crites	Call from:	Tor Anderzen	
	RE:	Comments from the 2017 CIM	IP inspection of St. N	Mary's Airport	
ENGINEERING	Shawn Crite Airport for th	es with DOT&PF, participated in the DOT&PF Capital Improvement	n the July 1, 2017 air ents and Maintenanc	port inspection of St. Mary's e Program (CIMP). Shawn	
GEOTECHNICAL ENGINEERING	stated that i operational	mprovements at the St. Mary's but it is a lot of work to maintain	Airport are in pretty in it.	good order. The airport is	
TRANSPORTATION ENGINEERING	Some of the significant c	e major issues identified in the in concern is surface quality of the	nspection are identifi airport runway and a	ied below. The most apron. The paved area of the	
ENVIRONMENTAL SERVICES	The existing runways are gravel and have had dust palliative applied. Gravel was added on crosswind but did not have enough fines so it did not bind well. The main runway had enough fine materials but jet action puts a lot of force on the runway during take-offs and it would almost make sense to pave a portion of the runway to protect it. Paved blast pad and				
PLANNING					
SURVEYING & MAPPING	in the RSA	nost likely rotation would be be by jet action.	neficial. Much of the	gravel has been pushed out	
CONSTRUCTION ADMINISTRATION	The second steel plate f	issue identified in the inspection oundation, the windcone and for	n is that a secondar undation should be	y windcone is installed on replaced.	
MATERIAL TESTING	The third issue identified is the need for a new dozer. The airport operations have a small dozer that is newer, but it is not large enough for all their needs. The large dozer they have is obsolete.				
RIGHT-OF-WAY					
	Drainage is dinged up p	sues along the runway and apro retty well.	on are okay, howeve	r one culvert on the road was	
	No commer	nts on the buildings, just follow (	up on fire protection	that it is current.	
	Electrical sy	vstems were not inspected.			
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	RECORD OF TELEPHONE CONVERSATION				
	Date:	May 8, 2018	Project No:	17-037	
	Time:	9:50 AM	Telephone:	(907) 249 0245	
	Call to:	Mark Greig, Lynden Air Cargo Chief Pilot	Call from:	Tor Anderzen	
	RE:	St. Mary's Operations and oper	ational needs		
CIVIL ENGINEERING	A phone cal chief pilot fo	I between Tor Anderzen, with HE r Lynden Cargo Air, took place o	DL Engineering Cor n May 8, 2018.The	nsultants and Mark Greig, the conversation with a brief	
GEOTECHNICAL ENGINEERING	update on the proposed propose	ne purpose of the call and inform oject is to reconstruct the runway project is to prepare an aviation	ation regarding the at the St. Mary's A activity forecast to	proposed project. The Airport. However, the first determine the critical aircraft	
TRANSPORTATION ENGINEERING	and facility r	requirements.			
ENVIRONMENTAL SERVICES	Lynden, provides scheduled air cargo services between Anchorage, Bethel, Nome, and Kotzebue with the ability to provide flag stops or charter service to other communities with a runway. Lynden provides these services with their fleet of Lockheed -382, also known as C130. Lynden does not have any scheduled flights to St. Mary's. They only fly occasional charters to St. Mary's, usually to carry fish out during the commercial fishing season. Even though every situation is different, Lynden will try to position their operations so that they would be available to pick up fish as a backhaul or flag stop during the commercial fishing season. Sometimes, they are chartered specifically to haul fish from St. Mary's.				
PLANNING SURVEYING					
& MAPPING					
CONSTRUCTION ADMINISTRATION	Lynden's aircraft need 5,000 feet of runway to haul a full load of fish from St. Mary's. A longer runway increases the safety margins but is not necessary to ensure full load of fish. Other parameters such as weather, runway conditions, and amount of fuel carried for the return journey are also taken into account for determining minimum runway length. The required 5,000 feet of runway is also what is needed in cold winter conditions. A runway of 6,000 feet allows Lynden to maximize the load with greater safety margins such as in situations when you lose an engine during departure, or need to return after take-off with a full load of fish.				
MATERIAL TESTING					
RIGHT-OF-WAY SERVICES					
	Comparing load of fish t Emmonak ir fish in the ca Depending runway is a available for	their operations at Emmonak with from Emmonak on their 4,600 for in their take-off considerations. Ly ase that a mechanical issue woul on where aircraft is when mechan viable alternative, however it is a the fish as Lynden's aircraft are	n St. Mary's. Lynde ot runway when usi inden can return to id necessitate the in nical issue arise St. Ilso important that t not refrigerated.	n is able to take off with full ng the overruns available at Emmonak with full load of mmediate return to ground. Mary's with its longer here are cooling/freezers	

May 8, 2018 Page 2 of 2

When it comes to time for construction, Lynden would prefer half-width construction, they can operate on 75 feet wide runway but not on half length. They need at least 4,800 feet to operate. Safety is the first consideration in their operations. Lynden aircraft also need space to turn around during construction and a lock-wheel turn would be very hard on the surface.

Lynden does not have any concerns with the current airfield configuration and capabilities. It is of concern that the approach lights (MALSR) are not operational, Lynden's approach minima goes up when the MALSR is not operational.

The weather reporting system at St. Mary's has not given them any problem so far, but reliable weather reporting is crucially important. Lynden has many operations in Emmonak during the commercial fishing season and the reliability of the weather reporting system there has caused them service interruptions. The same would be the case in St. Mary's if the weather was out of service when they had flights to St. Mary's.

We spoke about the fact that the Non-Directional Beacon (NDB) in St. Mary's is out of service. NDB still plays an important role in air navigation, when GPS is not available for some reason, Lynden and other carriers still rely in NDB's.



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### MEMORANDUM

DATE: May 10, 2018

TO: File 17-037

FROM: Tor Anderzen P.E.

**RE:** Meeting Notes - RAVN Director of Operations (DO) Evan Veal.

CIVIL

GEOTECHNICAL ENGINEERING

TRANSPORTATION ENGINEERING

ENVIRONMENTAL SERVICES

PLANNING

SURVEYING & MAPPING

CONSTRUCTION ADMINISTRATION

MATERIAL TESTING

RIGHT-OF-WAY SERVICES These notes are from a meeting with Hageland Aviation (RAVN) director of operations Evan Veal. The meeting was held on May 10, 2018 at RAVN headquarters on Old Anchorage International Road. Tor Anderzen and Scott Hattenburg were present. A brief background to the project was given. Tor and Scott explained the importance of the aviation activity forecast in determining the critical aircraft and ultimately the facility requirements for the airport. Tor added that the aim of this DOT&PF project is to provide airport facilities that serve the community and anticipated fleet. At this stage, DOT&PF does not wish to shorten the runway. Historically, shortening the runway has been considered to correct the substandard safety area length on the primary runway.

Evan Veal, director of operations with RAVN, stated that shortening the runway is not likely to impact RAVN's operations. The Dash 8-100 is the most demanding aircraft in their fleet. The RAVN operational specifications (op specs) stipulate RAVN must add an additional 60% to planned runway lengths required. According to the op specs, RAVN can operate Dash 8-100s with 5,000 feet of runway length without any operational impacts at St. Mary's Airport. Evan stated that 5,500 feet would be preferred because of the added safety margins. Evan also stated that St. Mary's has always been a pretty good airport. RAVN operates at St. Mary's under both Part 121 and Part 135 certification. Part 121 operations consist of regional, scheduled flights with more than nine passengers. The Dash 8-100 flights are operated under the company Corvus. They have two variants of the Dash 8. The passenger version takes 39 passengers with belly freight. The "combi" version has seating for 27 passengers as well as a dedicated cargo area that is large enough to fit palletized cargo.

It is important that the runway supports operational needs of the Dash-8 during construction. RAVN does not have smaller aircraft under the 121 certificate that could readily be used to replace this aircraft. Dash-8 has wide gear that needs to be considered in construction phasing particularly if half-width runways are to be used.

Part 135 operations are commuter and charter operations with up to 7,500 pounds of freight or up to nine passengers. These flights are conducted under the company Hageland, which operates Cessna 207s, Cessna 208s, and Beechcraft 1900s. Although the 1900s can seat 19 passengers, only nine passengers can travel on each flight operated under Part 135.

RE: Meeting Notes - RAVN DO Evan Veal Page 2 of 2

RAVN has daily cargo flights from Anchorage to St. Mary's with B1900s. In the past they have to put in a second flight to meet the cargo demand. RAVN also has a daily Dash-8 passenger flight to St. Mary's from Anchorage and also offers several scheduled daily flights to surrounding villages using their Cessna 207s and 208s. RAVN hopes to increase their operations in St. Mary's.

Evan stated that the crosswind at St. Mary's is a concern. RAVN uses the crosswind runway with their Cessna 207 and 208 operations. Due to the short cross wind runway (1,520 feet) pilots need a minimum of 100 hours in the aircraft before they are authorized to use of the crosswind runway.

Frontier Airlines, operated two Sherpa's before they were acquired by RAVN. These aircraft have high operating and maintenance costs which result in diminishing returns. RAVN will still use the Sherpa's occasionally when mail is backed up. RAVN is looking at replacing these with a newer cargo aircraft to use for charters and to supplement their mail runs.

RAVN would like to see the runway paved. The gravel runways are hard on tires and propellers. RAVN would also like to see that the DOT&PF and the FAA maintain the services that are available in St. Mary's. When the MALSR is out of service approach minima goes up. The weather reporting system is adequate, although outages are the concern. Evan stated that as a pilot, even with GPS navigation, having the Non-Directional Beacon NDB is still a comfort. RAVN also experiences frequent jamming of the GPS during military exercises. When the GPS is jammed, pilots have to fall back on the NDB and VHF Omnidirectional Range (VOR) ground based navigational aids.

When looking at future operations at St. Mary's Airport, RAVN is not planning any large changes in fleet. The Cessna 208s and 207s will eventually be replaced with newer generation Cessnas. RAVN is also looking to upgrade some of the Dash-8-100s with Dash-8-300s and 400s. St. Mary's would not likely see the 400s as the seating capacity is up to 90 passengers and not warranted at St. Mary's.

The cargo operators with larger aircraft are ACE, RAVN, Everts, NAC, and Lynden. If NAC's jet service to gravel runways is terminated, the traffic would be picked up by a combination of these carriers. The same would happen once the Everts DC-6s cease operation.

Evan noted that the by-pass mail is a big part of RAVN's operations in St. Mary's. RAVN transports mail, as well as NAC and Everts. All mail flown to St. Mary's with a further destination is carried by RAVN through St. Mary's. All by-pass mail carriers have three days to deliver the mail.

Essential Air Service (EAS) is used as a means of subsidizing air travel to many rural communities. There are no EAS subsidies for travel to St. Mary's.

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	RECORD OF TELEPHONE CONVERSATION					
	Date:	May 17, 2018	Project No:	17-037		
	Time:	3:05 PM	Telephone:	(907) 266-8306		
	Call to:	Harold Townsend Director of Operations, Corvus	Call from:	Tor Anderzen P.E.		
CIVIL ENGINEERING	RE:	Corvus operations at St. Mary's	3			
GEOTECHNICAL ENGINEERING	Evan Veal, Director of Operations for Hageland Aviation (RAVN's Part 135 operations) recommended that we also interview Harold Townsend Director of Operations for Corvus (RAVN's Part 121 operations)					
TRANSPORTATION ENGINEERING	Corvus serve St. Mary's (KSM) with Dash 8-100. In summer conditions the Dash 8 can handle a 36 knot crosswind. When the runway is contaminated the allowable crosswind goes down to 14 knot. With a 6,000 feet long runway Corvus can operate without any restrictions or load reductions, if the runway is shortened to 5,000 feet operations can continue without load reductions. In packed snow conditions the 6,000 feet long runway works well, if the runway is shortened to 5,000 feet operations may be necessary depending on weather or other load parameters.					
ENVIRONMENTAL SERVICES						
PLANNING						
SURVEYING & MAPPING						
CONSTRUCTION ADMINISTRATION						
MATERIAL TESTING	A Dash 8 can land and take off on a runway that is 4,000 feet long, but the capacity need to be reduced by 30% for operations on runways that short.					
RIGHT-OF-WAY	A paved runway would be very beneficial in the summer.					
SERVICES	Corvus have not experienced any issues with runway length or width, the preference is a longer runway with RSA that are too short. The runway surface is more useful for their operations. The runway orientation is fair, there are many times that the crosswind runway alignment fits the wind conditions better. The Dash 8 require at a minimum a 60 foot radius to turn around in perfect conditions. 75 foot turning radius works really well. The apron surfaces tend to get muddy when wet. The distance from the RAVN hangar to the paved portion of the apron makes it operationally difficult to park aircraft on the pavement and route passengers across the apron between the terminal and the aircraft.					

May 17, 2018 RE Corvus operations at St. Mary's Airport Page 2 of 2

Bypass mail has a significant impact on making the RAVN flights between Anchorage and KSM cost effective. Without bypass mail ticket prices would need to be increased significantly,

Corvus operate one daily flight to KSM, occasionally more frequent to keep up with the bypass mail volumes.

Corvus is looking at upgrading their Dash 8-100 fleet, and have evaluated Dash 8 200s, 300s, and Q400s. KSM does not have ARFF capabilities so Part 121 operations are limited to less than 30 passengers which means that if upgraded Dash 8's will be used for service to KSM it will likely be with Dash 8-200. The 300s and Q400 have much higher passenger capacity that would be un-utilized in traffic to KSM. There are currently no plans to change Corvus fleet serving KSM. If anything Corvus hope to increase their number of flights per week.

Runway and taxiway lighting works well, Corvus has not experienced issues with outages of the VASI's or REIL's. The MALSR outage result in a decreased success rate of approaches.

Supplemental windcone on Runway 17 would be a good addition to the field but is not absolutely necessary.

That the NDB is out of service, is only an issue when GPS is jammed.

The AWOS had many service interruptions the last three to four years, but has become much more reliable in the last six months.



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	RECORD OF TELEPHONE CONVERSATION					
	Date:	May 18, 2018	Project No:	17-037		
	Time:	3:05 PM	Telephone:	(907) 350-0402		
	Call to:	David Squier, NAS VP of Operations	Call from:	Tor Anderzen, P.E.		
	RE:	NAC Operations at St. Mary's				
CIVIL ENGINEERING	I called David to follow up on an email exchange. David is the Vice President of Operations for Norther Aviation Services, the parent company of Norther Air Cargo (NAC).					
GEOTECHNICAL ENGINEERING	Brandon Jo David to ma	hnson, Director of Operations hanks a sure that the company's exe	ad passed on the re cutive level was the	view of our meeting notes to involved in providing		
TRANSPORTATION ENGINEERING	information	regarding NAC operations at the	e St. Mary's Airport.			
ENVIRONMENTAL SERVICES	David said that the reason why they are pulling out of St. Mary's (KSM) is that they can no longer operate on Runway 17/35 with a gravel surface course. If the runway is paved they would not hesitate to continue operations.					
PLANNING	Additionally, if NAC pulls out of KSM they are no longer a preferred carrier and would not qualify as a bypass mail carrier even if they had an arrangement with a second line carrier. As a main line carrier they have to fly directly to the hub.					
SURVEYING & MAPPING						
CONSTRUCTION ADMINISTRATION	NAC could continue to offer cargo services to and from KSM, but it would be through a second line carrier such as Ryan Air or RAVN. It would then be up to the second line carrier's agreement to be able to offer cargo service. This type of an arrangement would not					
MATERIAL TESTING	provide the capacity or shipping rates that would make flying fish with NAC a cost effective alternative for shipping fish products from St. Mary's.					
RIGHT-OF-WAY	As long as runway 17/35 is unpaved NAC will not be able to serve KSM.					
SERVICES	David will review the meeting notes and make sure that they are representing the busines reasons why NAC is pulling out of St Mary's					
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Mr. Anderzen,

See the email below regarding the Dash 8 limitations if the runway in St. Marty's is shorten.

Also see the summary data from our commercial department.

		CORVUS			
		A/C Type	2017	2016	2015
No. of Passenger	Outbound	DH8	6,501	5,861	6,124
		BE1900D		79	608
	Inbound	DH8	7,418	6,662	6,750
		BE1900D		82	565
		Total	13,919	12,684	14,047
Freight lbs		DH8	204,834	167,080	114,163
		BE1900D		1,122	2,808
		Total	204,834	168,202	116,971
Mail Lbs		DH8	334,464	288,259	175,162
		BE1900D			2,638
		Total	334,464	288,259	177,800

Harold Townsend VP Operations Corvus Airlines 4700 Old International Airport Road Anchorage, Alaska 99502

(907) 266-8306 Office (907) 632-0374 Mobile harold.townsend@flyravn.com



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From: Harold Townsend Sent: Friday, March 17, 2017 10:21 AM **To:** isadora.fanning@alaska.gov **Subject:** Saint Mary's Airport Improvement Comments

Dear Isadora Fanning,

In response to your request for comments on shortening the Saint Mary's (KSM) runway from 6,000 ft. to 4,000 ft., Ravn would like to make you aware of the significant impact that would have on our ability to provide air transportation to the community of St. Mary's.

If the KSM runway is shorten to 4,000 ft., at all temperatures, our payload on departure will be reduced by 30%. This is effectively 10 less passengers that can be transported from the community. The airport is already restrictive with a gravel runway, and becomes even further restricted when contaminated in the winter. Reducing the length to 4,000 ft. will significantly reduce the air travel capacity for the community of St. Mary's.

The proposed width reduction of taxiways A and B to 50 feet wide are not restrictive to our operations.

Thank you for allowing us to comment on this proposal. Please give me a call for further discussion.

Harold Townsend VP Operations Corvus Airlines (907) 266-8306 Office (907) 632-0374 Mobile harold.townsend@flyravn.com



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### MEMORANDUM

DATE: May 18, 2018

TO: File 17-037

FROM: Tor Anderzen P.E.

**RE:** Meeting Notes – AC Co. Director, sales and Operations Jeff Cichosz and Freight Coordinator John Libal.

CIVIL ENGINEERING

GEOTECHNICAL ENGINEERING

TRANSPORTATION ENGINEERING

ENVIRONMENTAL SERVICES

PLANNING

SURVEYING & MAPPING

CONSTRUCTION ADMINISTRATION

> MATERIAL TESTING

RIGHT-OF-WAY SERVICES Tor Anderzen from HDL Engineering Consultants LLC and Michael Fisher from Northern Economics represented the planning team in this meeting. A brief background to the project was given. Tor and Mike explained that there are two components to our project. One component is to prepare an aviation activity forecast to determine the critical aircraft. The second component is a socio-economic study to evaluate the economic impact the airport has on the St. Mary's community, and surrounding villages that rely on St. Mary's as a hub for passenger, mail and cargo operations, and to gauge the socio economic impact of changes at the airport.

The function of an airport as a regional hub has a great impact on cargo shipment costs. For example Togiak was recently made a hub that resulted in Everts Air Cargo adding Togiak as a flag stop on their flights from Anchorage after a very active community effort. The driving factor for the community was to bring shipping costs down.

A large factor in cargo shipment costs is runway length. When an air carrier has to reduce payload due to runway length the cost per pound of freight increases.

Alaska Commercial Company (AC Co.) deliver their store inventory using both bypass mail and all-cargo freight carriers. Freight shipments are used for perishable items and many other products that must be shipped on all-cargo flights such as propane cans, any aerosol driven product, products that are oxidizing such as hair coloring products - the list is long. Shipping as freight is more costly than by-pass mail.

The perishable nature of much of AC Co.'s cargo means that we rely heavily on freight carriers to get our products delivered to AC Co's remote stores. Timing is easier to control, some products like strawberries or ice cream cannot sit on the tarmac for any period of time without spoiling. If it was shipped as bypass mail the shipping would cost less but there is a high risk that the products arrive to the store only to be thrown out, wasting AC Co and USPS resources.

AC Co. has over ten different freight rates all depending on the type of freight that is being shipped. Spanning from 75 cents per pound for vendor delivered palletized products such as soda pop to about \$1.30 per pound for deliveries of four-wheelers. Furniture usually ships at about \$1.10 per pound. The price vary with the specifics of the aircraft.

#### RE: Meeting Notes AC Co. Director, sales and Operations Jeff Cichosz and Freight Coordinator John Libal. Page 2 of 3

A vendor delivery means that the vendor delivers directly to the freight carrier, Northern Air Cargo (NAC) in the case of St. Mary's. The products are then either picked up at the airport by AC Co. personnel or delivered directly to the store.

FedEx is a good example of the use of bypass mail. Their freight to rural parts of the state are flown to Anchorage with their own fleet and converted to bypass mail for the final legs of the shipment.

By comparison, bypass mail cost 36 cents per pound regardless of destination in respective zone. There are three mail rate zones in Alaska, most of Alaska bypass mail is shipped within zone 1. Nome and Kotzebue are the exceptions being located in zone 3 with a slightly higher shipping rate.

Bypass mail must be equitable tendered by all bypass carriers to a mainline destination. Currently there are three by-pass carriers to St. Marys, Northern Air Cargo (NAC), RAVN, and Everts which all carry about one third of all bypass mail. If one carrier pulls out the mail will be split 50-50 between the two remaining carriers. The three carriers are very different, NAC and Everts both can carry about 25,000 pounds palletized where-as RAVN can carry up to 7,500 pounds of cargo on their Dash 8-100 combi's. However that number is often reduced by passenger's bags. RAVN cannot carry palletized bypass mail. So if NAC pulls out half of all bypass mail to St. Mary's will be dependent on availability of payload capacity on RAVN's flights.

For the bush destinations the share between bypass mail carriers is different, carriers that also provide passenger traffic will receive the larger share of mail. There are two carriers that provide bypass mail service between St. Mary's and Mountain Village: RAVN and Ryan Air. RAVN who provide passenger service receive 75% of the bypass mail whereas RYAN Air only carry 25% of the bypass mail.

If NAC pulls out from St. Mary's consequences will also be felt in other communities, such as those relying on bypass mail deliveries through St. Mary's as well as other flag stops on these flights. Bypass mail shipments to Aniak will no longer be able to lean on volume to St. Mary's for frequency to their airport which would reduce the level of service to their community unless NAC could find another flag stop on the route to make up for the difference.

Everts Air provides service to St. Mary's and Emmonak on the same route from Anchorage. They are the only bypass mail carrier to Emmonak. So Emmonak relies solely on Everts Air to receive their bypass mail.

There are also other large shippers of products to St. Mary's, sending materials to schools, such as Cisco and FSA that rely on bypass mail to get food products to the schools in St. Mary's.

Each month, the BTS Office of Airline Information collects market data from air carriers providing Part 121 or Part 135 cargo and passenger service – both scheduled and chartered. BTS T100 data contains each flight's segment origin and destination, carrier, aircraft, number of operations, number of passengers, and weight of mail and freight. The T100 data includes all cargo and bypass shipments to St. Mary's



RE: Meeting Notes AC Co. Director, sales and Operations Jeff Cichosz and Freight Coordinator John Libal. Page 3 of 3

Bypass mail is surrounded by many rules, John gave a general overview but these citations are from USPS "Handbook PO-508 – Intra-Alaska Mail Service by Air":

- Bypass mail can only be originated in Anchorage or Fairbanks
- Individual pieces (not palletized) may not exceed 108 inches (combined length and girth) or weight more than 70 pounds
- Authorized shippers must prepare palletized loads based on the following:
  - o All pallets must conform to DMM regulations
  - Pallets must be uniform in size with max dimensions 40 in. x 48 in. x 72 in. (width x length x height)
  - The weight on a pallet should be evenly distributed, with denser products on the bottom. Max weight of a pallet load is 2,500 pounds (in effect 2,400 pounds of payload as the pallet weighs 70 lbs).
  - Shipper must secure the mail to the pallet by shrink wrap so that it will be secure, stable and able to maintain unit integrity during transit.
- An order to a single addressee must weigh a minimum of 1,000 pounds. Order may consist of one or more pallets.
- An individual order may not exceed 50,000 pounds.
- Bypass mail process does not accept any of the following
  - HAZMAT as defined by USPS, FAA or DOT
  - o Building and Construction materials
- Freeze and Chill items are accepted on shipper's risk. USPS does not provide, nor does it require carriers to provide, freezers or coolers.





	RECORD OF TELEPHONE CONVERSATION				
	Date:	May 18, 2018	Project No:	17-037	
	Time:	9:10 AM	Telephone:	(907) 854-0068	
	Call to:	Jeffrey Moss, FAA Technical Operations	Call from:	Tor Anderzen P.E.	
CIVIL ENGINEERING	RE:	Nav and Vis aids at St. Mary's			
GEOTECHNICAL ENGINEERING	A brief discuant and visual a	ussion with Jeff, from FAA Techr hids at the St. Mary's Airport were	ical Operations, too e discussed.	ok place. The navigational	
TRANSPORTATION ENGINEERING	The Visual Approach Slope Indicators (VASI) for Runways 17 and 35 typically work well. The issues over the last couple of years were related to air to ground controls, also known as pilot controls				
ENVIRONMENTAL SERVICES	Runway End Identifier Lights (REIL) for Runway 35 have had the same operational issues as the VASI.				
SURVEYING & MAPPING CONSTRUCTION ADMINISTRATION	The Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) for Runway 17 have not been in operation the last few years for two reasons. The first reason is the presence of an artesian well in one of the cans, so the MALSR had to be turned off due to the risk of electrocution. The second reason is that as ground has settled around the foundations the frangible couplings are too high above the ground, no longer meeting frangibility requirements for objects located in object free areas (OFA). In general, the whole MALSR system is in bad shape and FAA has an active design project to replace and upgrade the MALSR, Jeff is not sure where in the process the project is now, but it would be a great opportunity to coordinate with FAA design as this project progresses.				
MATERIAL TESTING					
RIGHT-OF-WAY SERVICES	The glide slope tower for Runway 17 was removed a long time ago. Only a portion of the tower remains adjacent to the weather station.				
	The existing Distance Measuring Equipment (DME) is old and there are many problems with it. A new DME is ordered and has been delivered to Anchorage. Jeff is currently coordinating with construction crews and anticipated installing the new DME this summer. This discussion led to the power supply issues for the localizer. During brushing operations a cable to the localizer was damaged which shut down the DME, VASIs, and REILs. The existing power circuit is a bit peculiar in St. Mary's. All the FAA-owned navaids and visual aids on the field are powered on the same circuit, so when a single cable is damaged it also cuts power to other navigational and visual aid equipment.				

May 18, 2018 RE Navaids and visual aids at St. Mary's Airport Page 2 of 2

The existing localizer platform is old and in poor shape. Jeff is currently working on securing funding for a new localizer platform. The localizer is usually pretty reliable with exception for the power supply. There have been a few incidents where moisture has gotten into the antenna array resulting in interior ice buildup and service interruptions. We discussed the localizer covers that are used in some coastal locations with high humidity and how these such covers could also protect the St. Mary's localizer antenna array at a low cost compared to replacement cost.

The Non-Directional Beacon (NDB) was relocated to its current location a few years ago. During a particularly bad winter storm one of the towers was damaged and fell over. The NDB has been out of service since then. Jeff has tried to get it decommissioned. FAA decided to not decommission the NDB, however there are no plans for repairs.

The Automated Weather Observation Station (AWOS) has been a point of frustration in recent years. Equipment has been updated in the last year. The last service interruption this spring lasted over a week and was caused by a faulty UHF radio. The UHF radio provides a line of site radio link between the AWOS and FAA's building at the airfield. The observations are then relayed from there to the Aviation Weather Center that publishes the weather observations in the METAR format. The AWOS was in operation and collected weather observations during the outage, but was unable to relay the information. This impacted all Instrument Flight Rule (IFR) operations to St. Mary's. There are currently no particular plans to update the AWOS since the components are new and the UHF radio link is operational again.







	RECORD OF TELEPHONE CONVERSATION					
	Date:	May 22, 2018	Project No:	17-037		
	Time:	11:05 AM – 12:30 PM	Telephone:	(712) 775-7031		
	Call to:	Randy Crawford, Boreal Fisheries	Call from:	Dick Tremain, NEI, Tor Anderzen, HDL		
	RE:	Boreal Fisheries in St. Mary's				
CIVIL ENGINEERING	Dick and To	or gave brief introduction of the p	roject.			
GEOTECHNICAL ENGINEERING	Randy start	ed with a brief background on B arted operations in St. Marv's in	oreal Fisheries oper 1974. They have wo	ations at ST. Mary's. Boreal orked with several carriers		
TRANSPORTATION ENGINEERING	over the yea Cargo. At pe	ars. Currently they work primarily eak production Boreal have sen pounds of fish per month. Local	with Northern Air C as much as 7 DC6	Cargo (NAC) and Everts Air loads per day and as much paid to fishermen for their		
ENVIRONMENTAL SERVICES	catch) has to relatively hig	catch) has been as much as \$3M annually, this year it could be as much as \$5M due to relatively high prices for Yukon Salmon and the abundance of fish. The money made in the				
PLANNING	mattresses	etc. When fishery goes down, so	does the disposab	le income for many people.		
SURVEYING & MAPPING	Boreal Fishe to sell their	Boreal Fisheries did not operate in St. Mary's in 2017 but have found new market partners to sell their product to and are moving forward with operations for 2018. Without barging				
CONSTRUCTION ADMINISTRATION	Capabilities, Boreal rely completely on air lift for their business model to work. Boreal was for a long time the only fish buyer in Yukon River District two and buy fish from about 195 commercial fishing permit holders. About 60% of the volume bought come from fishermen in St. Mary's, the remaining volume is bought from fishermen from Pitka's Point, Pilot Station, Marshal, Holy Cross, Mountain Village and Russian Mission.					
MATERIAL TESTING						
REAL ESTATE SERVICES	K Danaharaa					
	1982. Short has the long source of in about 60 pe supports tak will result in is of big con shipping wit load. Boreal compared to	calls correctly, the runway paven ening the runway would cut the gest runway in the lower Yukon. come. Apart from all people invo- cople locally during the fishing se ce-offs with large cargo aircraft. a heavier reliance on Lynden A acern for Boreal, what will happe h Lynden the cost of charter is t I usually pays \$34,000 for each of the shipping cost with NAC an	nent was removed in industry that drive the Commercial fishing lived in the commer- eason, that is only per- NAC is replacing the replacing th	h the early 1980s, possibly in he local economy. St. Mary's is the community's one cial fishing, Boreal employ ossible if the runway length eir fleet with 737-300's which eet of Lockheed C130's. This onger available. When of how much fish is in the this cost is double the cost are faster and cheaper to		

May 22, 2018 Page 2 of 2

operate. NAC charges about \$0.40 per pound for freight to Anchorage, Everts is similar. Backhaul rates with NAC are less than \$0.30 per pound.

When local residents have less disposable income due to low fish harvest, they also have less freight coming in to St. Mary's resulting in fewer backhaul opportunities, which result in higher cost to ship fish to market.

At takeoff 90% of the freight weight is fish, some is the weight of the shipping crates, and some is ice. Boreal aims to load the crates such that the ice has melted and the water drained from the crates prior to loading on the aircraft. Fish shipped by Boreal is headed and gutted, but they also have capacity to fillet the fish to keep the shipping cost down. Each shipping crate/tote weighs about 1,200 pounds loaded. The weight of the crate is 135 pounds, the crates also need to be flown back to St. Mary's.

Boreal Fisheries have land leases at the airport and rely on the airport to get the product out. They have been an airport tenant since 1975. Fish and Game are predicting a great return run, and we will need the lift capacity of 5-6 737's each fishing day. The commercial fishing industry brings in new money to the state, the money comes from the open market and the money is spent locally and regionally on boat engines and snow machines ordered from Anchorage. There is no manufacturing in St. Mary's, all other income comes from the service industry. Flying out the product from the local commercial fish industry on aircraft that cost more due to the gravel runway hurts the local economy. Boreal Fisheries would like to see the runway paved, it would be a great boost to the local economy. The industry has moved to using dip-nets to support the conservation efforts of especially Chinook salmon. The Board of Fish and Game allows the local fishermen to sell their bycatch of Chinook salmon once the conservation goals are met. Chinook used to sell for about \$5/pound. Twelve years ago the Chinook escapement was about 27,000 fish. Conservation efforts have improved to a run of 290,000 Chinook in 2017. The bycatch alone could be a \$7M industry.

The expected 2018 run of commercially available Chum is about 25 million pounds, our plant can handle all the fish we can fly out. The wall is aircraft, even C130' are hard to get. Lynden have added two more C130's for this year which should make more lift capacity available.

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	RECORD OF TELEPHONE CONVERSATION						
	Date:	5/22/2018	Project No:	17-037			
	Time:	9:00-10:25 AM	Telephone:	(712) 775-7031			
	Call to:	Ragnar Alstrom and Jack Schulteis, KwikPak	Call from:	Dick Tremain, NEI, Tor Anderzen, HDL			
	RE:	KwikPak operations					
CIVIL ENGINEERING	Dick and To We started	or gave brief introduction to ou our conversation around the g	project. Jestion of how muc	h KwikPak relv on St. Marv's			
GEOTECHNICAL ENGINEERING	Airport (KS to 5,000 fee	M) and what the impact would et.	be to their operation	ns if the runway was shortened			
TRANSPORTATION ENGINEERING	DC6 and C reduction in	If the runway at St. Mary's was shortened it would limit the aircraft that can haul fish from to DC6 and C130. St. Mary's and Emmonak would be in direct competition for lift capacity. A reduction in runway length limits the volume that can be hauled. Lynden who operate the					
ENVIRONMENTAL SERVICES	C130's do not have a regular stop at Emmonak or St. Mary's, with no jet service in St. Mary's only Everts Air Cargo would be able to maintain a schedule for both airports. RAVN who provide by-pass service for St. Mary's does not have the aircraft or lift capacity to pick						
PLANNING	in cargo as	up loads of fish. By-pass mail has priority over other freight which frequently result in delays in cargo as it is not. People in Emmonak that buy a snow machine of four wheeler for delivery are told to expect a delay of about two weeks					
SURVEYING & MAPPING							
CONSTRUCTION ADMINISTRATION	Everts Air 0 runways bu on their del	Everts Air Cargo are operating a limited number of DC6 for cargo to airports with gravel runways but they are moving their fleet to jet aircraft including MD80's. Everts are far behind on their deliveries to gravel strips due to limited cargo capacity, bypass mail has priority.					
MATERIAL TESTING	NAC has one 737-200 with gravel kit, but it is being sold to Canada in September. With the loss of this aircraft there is no more jet powered lift capacity for gravel runways in Alaska.						
RIGHT-OF-WAY SERVICES	are still flying vintage WWII aircraft to service the lower Yukon communities. A runway length reduction at St. Mary's would really doom the area.						
	<ul> <li>KwikPak would really like to see St. Mary's runway paved. If it was paved it would also benefit Emmonak, we would have year round access to large freight for all villages in the Lower Yukon. There have been several emergency landings in St. Mary's by larger jet aircraft. A paved runway would ensure there is a safe emergency landing spot in the lower Yukon area.</li> <li>There used to be jet passenger service provided out of St. Mary's, Wien Air and Mark Air both had Jet service at one point.</li> <li>Scheduled freight service to Emmonak is currently through Everts only with some availability for smaller goods to ship with RAVN. RAVN has limited cargo space on their aircraft and much of that space is reserved for passenger's baggage and bypass mail</li> </ul>						
	An	chorage 3335 Arctic Boulevar	d, Suite 100, Anchor	age 99503 907.564.2120			

May 22, 2018 Page 2 of 3

KwikPak is the fish buyer in Yukon District 1 and will also operate district 2 buying stations in Pilot Station and Mountain Village. , they send part of fish bought in district 2 to Emmonak for processing, but also rely on shipping from KSM.

KwikPak reduced the amount of fish they bought out of district 2, when FishPeople moved in as a fish buyer in St. Mary's last season. In 2017 there was an estimated 27 million pounds of fish available for commercial fishing in the lower Yukon, between districts 1 and 2 only about seven million pounds were taken. Several companies are looking at adding infrastructure in ST. Mary's to harvest more of the excess. What constricts growth is lift capacity by air. KwikPak vacuum packs salmon fillets which reduces the weight that is shipped to market. They no longer maintain barge infrastructure. Yukon River is shallow, and barge draft is limited. To get fish to market with barge, they have to barge the fish down to Dutch Harbor, which cost about 75 cents per pound. From Dutch Harbor to Seattle the barge cost is 25 cents per pound. Barging fish is not a cost effective way for KwikPak to get their product to market, it cost 25 cent less per pound to send product by chartered aircraft than it cost to barge to Seattle. Since the 2016 season all fresh and frozen fish has been shipped by air. KwikPak has an exclusive contract with Lynden, they also fill Everts backhaul capacity from Emmonak. The backhaul cost from Emmonak to Anchorage is 35 cents per pound. Barging dynamics have changed, there is no infrastructure to barge from Emmonak, and barging to market cannot compete with fish from Bristol Bay.

The surplus of fish in district 2 means that someone will establish in St. Mary's. When there is no buyer in district 2 KwikPak buys heavily from there. When FishPeople came in last season KwikPak backed off. 2017 was the least amount of fish bought in district 2 in many years. FishPeople will buy at least 2 million pounds in 2018 but it depends on how much they can fly out. KwikPak also keep hearing that Boreal Fisheries will be back in operation in 2018. Kip with FishPeople is already in St. Mary's, his cell phone is 907 310 6269.

Passenger service to Emmonak is provided from KSM, improved runway at KSM would also improve for passengers to Emmonak, and often people are waiting up to two weeks to get out of Emmonak or back, due to the limited seating capacity to Emmonak. Groceries are brought to Emmonak by Everts as direct by-pass mail from Anchorage three times per week, in summer their schedule is six days per week, sometimes even two operations per day. Everts does a good job, but flying 50+ year old aircraft is increasingly difficult. It gets harder to find parts and skilled mechanics that can work on the DC6.

There are 440 commercial fishermen in Yukon River District 1 and 2 combined, KwikPak's regional payroll is about \$4M annually. KwikPak hires locally and only brings in skill mechanics.

If KSM loose jet service fish buyers in St. Mary's will rely on the same fleet as Emmonak and will be in direct competition for lift capacity. There is a need for a Jet runway in the lower Yukon area, it is hard for local people to travel here. Many families have permits in both Yukon District 1 and 2. The whole family works together on each permit, mom or dad operating the boat with kids and grandkids handling the nets. It used to be on average three people per boat. Dip net fishing is more labor intensive but it eliminates the by-catch, it is common that there are 4 nets in a boat so there may be 5 or 6 people per fishing boat. The 2018 fishing season will be dip nets only until the King conservation goal is met, after that fishermen can start using drift nets and are allowed to sell the by-catch of Kings. With



May 22, 2018 Page 3 of 3

400 boats there are 1,200 people or more working hard to make as much money as they can. The Cultural structure is that fishing is a family operation – money made goes to subsistence activities and other family needs.

KwikPak has capacity to freeze 600,000 pounds of processed fish, available lift capacity limits their production. They head and gut 74% of the fish, remaining fish is typically shipped as vacuum packed or frozen fillets. In 2017 KwikPak had to shorten or cancel commercial fishing openers due to lacking lift capacity to bring product out. For the 2018 season, KwikPak has reserved Lynden's and Everts full capacity.

Fish buyers in St. Mary's will have limited lift capacity to haul fish out. KwikPak would like to increase their production rates, they have good relationships with the Copper River Seafoods and could augment their limited supply. One of KwikPak's goals is to increase the filleted portion of their shipments. By shipping fillets instead of headed and gutted fish they reduce the amount of waste that is shipped.

KwikPak strongly favors maintaining the runway length. "When infrastructure is reduced such as by reducing, it takes a bad situation and make it worse. We need to maintain and improve our infrastructure."

The Emmonak area has the highest population growth rate in the state, many are young, 60% of population is under 30 years of age. Emmonak has been recognized by the Department of Labor and Workforce Development as having the best youth employment program in the state. The key to this program is the commercial fishery.



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	RECORD OF TELEPHONE CONVERSATION					
	Date:	5/24/2018	Project No:	17-037		
	Time:	9:00-AM	Telephone:	(712) 775-7031		
	Call to:	Kip Baratoff, FishPeople	Call from:	Dick Tremain, NEI, Tor Anderzen, HDL		
	RE:	FishPeople operations in St	. Mary's			
CIVIL ENGINEERING	Dick and To	or gave brief introduction rega	rding the proposed S	t. Marv's Airport (KSM)		
GEOTECHNICAL ENGINEERING	project. (The term lit used to ship	ft or lift capacity is used for th o fish product from St. Mary's	e payload of fish that Airport.)	can be carried on the aircraft		
TRANSPORTATION ENGINEERING	Fish People	Fish People mainly use NAC but also Lynden to transport their freight. Back haul 10C per				
ENVIRONMENTAL SERVICES	very tied up	very tied up with other routes and it is hard to get a flagstop by Lynden in St. Mary's.				
PLANNING	Flights with NAC gets complicated. While they have had to make their own business decisions, their upgrades has resulted in them leaving KSM after the commercial fishing season this year. Currently, there is no carrier that can provide the fleet to maintain current lift capacity out of KSM. FishPeople does not know who will pick up and provide that lift capacity.					
SURVEYING & MAPPING						
CONSTRUCTION ADMINISTRATION	If the runway is shortened it will reduce available lift even more and add to the problems with getting product out of KSM. It would likely make it impossible to buy in district two, get					
MATERIAL TESTING	product to market, and still sell at a competitive price.					
RIGHT-OF-WAY SERVICES	Last year FishPeople bought about 2 million pounds of fish in St. Mary's, this equals to \$1.5 to \$2 million dollars that was paid to local fishermen. That figure does not include the cost to handle and ship fish from KSM. They bought fish from about 60 permit holders, but the permits holders are not individuals, they are whole families that work together. There are usually 2 people operating each boat. 4-6 fish handlers are also employed locally through the whole season. In addition to buying fish and employing local labor FishPeople also spent \$150-\$200 thousand dollars on lodging and food during the season.					
	FishPeople include a co 750,000 to transportatio employ up t rather than	has a five year business plar ouple million dollar investmen 1,000,000 pounds. Their plan on as lift capacity allows. This o 30 people locally for handlin fish crates, which reduces tar	n that as implemented ts in storage and free is to process and free business plan includ ng. This year the plar re weight and the nee	d over the next few years will zing capacity for about eze product for later les growing their operations to n is to ship in fiber containers ed to ship empty crates back.		

May 24, 2018 Page 2 of 2

With local freezing and storage capacity FishPeople can increase the amount of fish they buy. Without freezing capacity, the amount they buy now is limited by lift capacity to get the product out to market. They ship the fish round (whole) and on ice. The fish need to ship within 24 hours. Currently they can get two NAC flights regularly and occasionally three flights to carry fish out. The capacity of each flight is about 22,000-23,000 pounds of fish. Occasionally they also use Lyndens Air Cargo, but they usually don't have flagstop or backhaul capacity available for KSM. FishPeople does not use Everts very often because their schedule is less frequent to KSM and only have three flights a week available for back haul.

In effect, the lift capacity from KSM limits the amount of fish that can be bought each commercial opener to about 45,000-67,000 pounds. The market demand for Yukon Salmon, the amount of fish available in the river, and the capacity of local fishermen to catch the fish are all available to increase the local fishery, the limiting factor is the lift capacity. When FishPeople ship their product on back haul with NAC they pay 10c per pound as compared to about \$1.00 per pound when flying the product on chartered flights with NAC or Lynden.

District 2 needs the same level of infrastructure that KwikPak has in District 1. Even with more dock and handling capacity in St. Mary's it still comes back to the limited lift capacity from KSM. FishPeoples business model is to provide social and environmental sustainability in the communities where they work by paying good wages and investing in the communities. The plan is to remain in St. Mary's for the whole season from early June until after the fall fishery for Coho closes in mid-September.

There is also a rumor that Boreal Fisheries will be back in operation this season, and will be interesting to see how will that impacts FishPeople. Currently FishPeople is waiting to see if that really happens, but the number of buyers in St. Mary's will not change anything for the community as they rely on the same lift capacity to bring the product to market. Ultimately if the industry is going to grow more lift capacity is needed.

If the runway was paved KSM would be opened up to NAC's whole fleet rather than one 737-200. On a paved runway jet aircraft could be used to provide additional lift capacity from KSM. It would open up the airport to Alaska Airlines and the jets in Everts fleet. With more lift capacity the commercial fishing industry could grow in St. Mary's. All necessary components for growth are there except lift capacity.

We know that Chinook (King) runs are recovering and when King's are available for catch again there will be an increased interest in fish from district 2. King salmon are the money fish which sell for many times the price of Chum. Opening to King harvest again would also increase the economic activity in St. Mary's, unless limited by lift capacity.

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Appendix D: Air Carrier/Airport User Survey Responses



100

## St. Mary's Airport Improvements

Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

DOT&PF operates all programs without regard to race, religion, color, gender, age, marital status, ability, or national origin. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi\_statement.shtml. To file a complaint, go to: dot.alaska.gov/cvlrts/titlevi.shtml.

The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

St Mary's Alaska

- 2. Do you live there year-round? Yes No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Rersonal travel
  - Business travel
  - Ordering goods and items
  - Shipping out goods and items
  - & Other: pick up family Exionds traveling

5. How often do you use the St. Mary's airport? Please explain.

when needed to travel

- 6. How many adults (18 years old and older) live in your household? 4 adults
- 7. How many children (under 18 years old) live in your household?  $\underline{-}$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	X	X	A	R			X	X	X	A	X
Adult 2				Д								
Adult 3	×	Ø	X	×.	Ø.	X	\$	Ø.	X	X	A	太
Child 1												
All others				D								

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	X	R.
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

15\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

<u>Ð</u> %

(Continue on next page)

1...

12	What months each year do you and	l other members of your household
	participate in subsistence activities?	(Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	X	X	A	X	A	X	X	X	X	Ø	A
Adult 2	X	Ø	Ø.	B	X	X	ß	R	X	X	K	X
Adult 3	X	X	Ø	A	X	R.	X	×-	凶	Ø	Ø	R
Child 1	A	R	A	S.	X	A	$\boxtimes$	B	1×	A	区	X
All others	X	A	Ø	₽×-	Ø	Ø	ß	×	Ø.	R.	Ø.	×.

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_

· ·



Project Number: Z605630000

#### Please complete this survey if you are a business owner or manager who uses the St. Mary's Airport.

Complete online at https://bit.ly/2Gn5oHt (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

Brenda Brown 1. Your name \_\_\_\_\_ 2. Your title General Manager 3. Your phone number \_\_\_\_\_ (907) 591-2527 4. Your email address (only if you would like to be added to the project email list for notifications) bbrown@azachorok.com 5. Business name Azachorok, Incompose ted 6. Physical address Reynolds Avenue Mta Village, Alaska State Street Zip P.O. Box 32213 Mtw. VITLAGE, ALASKA City Street State Zip

- 8. How many pounds of cargo do you ship annually through St. Mary's Airport? Inbound: <u>1200</u> pounds Outbound: <u>havely</u> pounds
- How frequently do you have shipments? (weekly, 2-3 per month, monthly, etc.)
  Inbound: <u>2-3 per numb</u> Outbound: \_\_\_\_\_\_
- 10. How do your shipments vary by season at this location? Please describe. We order upbricumt crel ammunition and Hadware products monthly.
- 11. Do the shipment amounts vary or are they usually similar in size? Please describe. Yes it depends on what we order.
- 12. How dependent are your shipments on the aircraft that currently serve the St. Mary's Airport? For example, are there size or weight requirements that require a particular size of aircraft?

13. If the size of aircraft serving St. Mary's Airport were to change, how would that impact your movement of cargo?

14. On average, what cost per pound do you currently pay for your shipments through St. Mary's Airport?

Inbound: \$\_\_\_\_\_\_ per pound Outbound: \$\_\_\_\_\_\_ per pound

15. If a change were to occur to aircraft type, aircraft size, frequency of service, or another factor, how would that affect your operation?

En rural Alaska, weather is always on issue so if we had to so through Bettel, it would take much lunger and cost more. 16. If you were to see a change in the cost of moving cargo, how would your business respond? Would you pass costs on to consumers, work to maintain costs, or approach it a different way?

45- The price of morchandise would go up. marking The struggle morse for oup people, especially the fact that were the poorst region in the state + country. 17. What are your businesses' annual revenues at this location?

\$1.2 Millimper year

- N

18. How many people do you employ at this location?

Full-time, year-round basis (32-40 hours per week): <u> </u>	
Part-time, year-round basis (less than 32 hours per week):	6
Seasonal (please describe when they are employed):2	

Temporary (please describe when they are employed): \_\_\_\_\_6

19. How has your business changed over the last few years at this location? Have you grown in revenues or number of employees, have you seen a decline in revenues or number of employees, or have your operations been unchanged?

we've some with more norkers employed, which has expanded on some to one whyes,

20. Do you have any other thoughts, ideas, or opinions you would like to share about the role of the St. Mary's Airport in your business?

yes, please do not shorten the Runway?

Initial

Initial

21. Would you like to tell the team anything else that may assist with the project?

were willing to write litters of support or pass a usolution.

We need the state to regularly maintain the AWAICS system. \_\_\_\_\_

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

1.5



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

Samt Marys

- 2. Do you live there year-round? (Yes,
- If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - Business travel
  - 🔊 Ordering goods and items
  - Shipping out goods and items
  - 🖞 Other:

5. How often do you use the St. Mary's airport? Please explain.

often as my needs require. t personal or required to reach ide entities for health needs.

- 6. How many adults (18 years old and older) live in your household? 8 adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You												
Adult 2												
Adult 3												
Child 1												
All others	T	-	-1-	- []	- F	T	-11-	-11-	- 8-	-11-	-	-0-

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	T	F
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

10000000

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
You	H	-0-	-		-0-	-0-							X
Adult 2													- ( )
Adult 3	-	-	-8	-0-	-	-	-0-	-8-	-0-	-0-	-	-0	-X
Child 1						D					Ú.		
All others	-		-	-0-	-0-	- 0-	-0-		D	-	E	-8-	-X

13. Would you like to tell the team anything else that may assist with the project?

All entities require air transport to meet the needs of the Communities.

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

51.1

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - X Business travel
  - X Ordering goods and items
  - X Shipping out goods and items
  - X Other:

5. How often do you use the St. Mary's airport? Please explain.

FOR HEALTH LHECK-UPS AND DENTEL

- 6. How many adults (18 years old and older) live in your household? / adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You					X	X	X	X				
Adult 2												
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	X	X
\$30,000-\$49,999	í i	Ū
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

10 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

19 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You				X	X	X		X	X	X		
Adult 2		D									Ó	
Adult 3											Ū.	
Child 1	Ū.						- 0					Ē
All others		П				E						

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_\_ The

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_



et († 1

### St. Mary's Airport Improvements

Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

MomUNIAge

- 2. Do you live there year-round? (Yes No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - 🕱 Business travel
  - X Ordering goods and items
  - & Shipping out goods and items
  - VOther: family remains after autopsy

5. How often do you use the St. Mary's airport? Please explain.

even day to expect mail & supplies

6. How many adults (18 years old and older) live in your household? L/ adults

U. Apr

- 7. How many children (under 18 years old) live in your household? \_\_\_\_ children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	R	A	A	T	1	1	1	1	A	-	-	Đ
Adult 2												
Adult 3												
Child 1												
All others	Ē					Π		Ē				

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		D
\$50,000-\$74,999		X
\$75,000-\$99,999		
\$100,000 or more	E	

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%

12. What months each year do you and	other members of your household
participate in subsistence activities?	(Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You							D				Ũ	
Adult 2										Û		Ô
Adult 3			P	Z	X	R	Z	R	P			
Child 1												
All others		П	18		,E	E		Ð				I

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system. \_\_\_\_\_

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

Initial

Brown 14. Your name (optional) Esther A.

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) 591-6280

Q. A.



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

Inth. Village

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - X Ordering goods and items
  - □ Shipping out goods and items
  - Other: \_\_\_\_\_\_

- 5. How often do you use the St. Mary's airport? Please explain.
  - Couple times a yr.
- 6. How many adults (18 years old and older) live in your household?  $\underline{-4}$  adults
- 7. How many children (under 18 years old) live in your household? 5 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You												
Adult 2												
Adult 3	- D					Ē.						
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	R	X
\$30,000-\$49,999	D	
\$50,000-\$74,999	口	
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

\_\_\_\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		,0	X	X	X	Ø	X	X				
Adult 2		Ē			D					L		
Adult 3						Ô				Ē		
Child 1												
All others											Ē	

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.	
	Initial
We do not want the Saint Mary's runway to be shortened,	
because it will help eliminate economic activities.	Initial

14. Your name (optional) \_\_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)



Project Number: Z605630000

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1. In what city or village do you primarily live?

Mitn. Village

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - XPersonal travel
  - ¥Business travel
  - Ordering goods and items
  - □ Shipping out goods and items
  - Other: \_\_\_\_\_

5. How often do you use the St. Mary's airport? Please explain.

Not much

- 6. How many adults (18 years old and older) live in your household?  $\underline{6}$  adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	t	×	Z	×	×	内	ø	×	Ø	Ø	K
Adult 2		D		E		D.						
Adult 3				Ξ			E					
Child 1									П			
All others												U

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	E	P
\$30,000-\$49,999		
\$50,000-\$74,999		Ц
\$75,000-\$99,999		
\$100,000 or more	B	Π

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

0 %

12	What months each year do	o you and	other members	of your	household
	participate in subsistence	activities?	(Check all that a	apply)	

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You						X	K	X	X			
Adult 2	TX	(X)	¢X	承	X	X	X	X	Æ	X	X	R
Adult 3				D								
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.  $\underline{W \not{} }$ 

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

W & &

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

4 7 

ч×.,



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live? \_\_\_\_\_\_\_\_

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

Primarly here A7 MM.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Ordering goods and items
  - ✓Shipping out goods and items
  - Other:

5. How often do you use the St. Mary's airport? Please explain.

6. How many adults (18 years old and older) live in your household? 3 adults

11.4.1

- 7. How many children (under 18 years old) live in your household? 2 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		Ó				P	4	4	-	Û		
Adult 2			1	X								
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		4
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

160 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

80 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	-B	-0-	-0				-8-		0		-6-	-
Adult 2												
Adult 3										D		
Child 1												
All others			D									

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

Initial

14. Your name (optional) peck

15. Your email address (only if you would like to be added to the project email list for notifications)

32036 Vit, Uillar At 99635 x1×

16. Your phone number (optional) XXXX

0.3



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

MUNTAL

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

- 2. Do you live there year-round? (Ye
  - Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

live in Nountain Village but use the saint Sur range auport for a lot of things, using the t makes it a lot easier to marel living in our airport makes remole area.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - X Ordering goods and items
  - X Shipping out goods and items
  - Other: \_

5. How often do you use the St. Mary's airport? Please explain. I think an Community used the amport on a daily pasis, lets Very amportant that we keep the angost the way it is.

- 6. How many adults (18 years old and older) live in your household? 4 adults
- 7. How many children (under 18 years old) live in your household? 2 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	6	V	b	V	10	V	V	6	D	N	0	6
Adult 2	K	12	D	Þ	D	T	0	6	i	t	0	4
Adult 3						D						
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	X	Π
\$30,000-\$49,999		X
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

\_\_\_\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%
12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	<u> </u>	-8-	- 8-		Ð							
Adult 2	-8-	- []-			- 11-	- 1	-6-	-0-		1	6	-8-
Adult 3	4	- 🗇	0	- 0	-8	-0-	1					
Child 1	0	-8-	- 8-	-0-		-	-0-	0	-0-	-0-	0-	-8-
All others	0	E.		- 8	-8-	-8-	1	0	-0	1	- Ĝ-	-8-

13. Would you like to tell the team anything else that may assist with the project? Leave the KSM auport the Way it is there is nothing wrong with

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

· ·



Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

2. Do you live there year-round? Yes

MTN Villigen

If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Ordering goods and items
  - Z Shipping out goods and items
  - Other: \_\_\_\_\_

I use it For Travel and Pick up products.

- 6. How many adults (18 years old and older) live in your household? <u>H</u> adults
- 7. How many children (under 18 years old) live in your household? 3 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	P	B	Y	B	P	V		Y	V	V	P	P
Adult 2												
Adult 3												
Child 1					1							
All others						□.						

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		Ø
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

3%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

2%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		٥						V	V			
Adult 2						Ē.						
Adult 3												
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project? Malka it work put on Led Roads Lights

We need the state to regularly maintain the AWAICS system.

Initial

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

14. Your name (optional)

15. Your email address (only if you would like to be added to the project email list for notifications)

Serv 72 Waskey a) Gmail. com

16. Your phone number (optional) 545 7236



Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

- 1. In what city or village do you primarily live?
- Mountain Village
- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - X Business travel
  - X Ordering goods and items
  - X Shipping out goods and items
  - Other: \_\_\_\_\_

A few times a year. I travel for work personal our Fraight is Shipped our fish from Summer connerval Fish are shipped out From prese.

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? 3 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	¥	K	K	A	X	K	X	X	X	×	X	R
Adult 2	×	X	×	×	×	X	x	X	X	x	x	x
Adult 3						×	X	X				
Child 1						X	X	X				Ð
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999	X	×
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

10090%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

10 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		¥	×	X	x	X	X	X	X			
Adult 2		X	X	X	×	X	X	X	X			
Adult 3			X	X	X	X	X	×	A			
Child 1		×	X	x	X	×	X	x	X			
All others			X	×	×	×	x	×	X			

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities. ) Initial

14. Your name (optional)

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)



Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

(rHn. VI)

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - R Personal travel
  - Business travel
  - 😪 Ordering goods and items
  - R Shipping out goods and items
  - Other: \_

Everytime I travel. Freight. Almost

- 6. How many adults (18 years old and older) live in your household?  $\leq$  adults
- 7. How many children (under 18 years old) live in your household? A children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	8	18	R	R								
Adult 2	K	X	R	D	N	D/	X	X	D	Ø	1	X.
Adult 3	8	X	8	×	V			R	R		<i>S</i>	R
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

\_\_\_\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%

(Continue on next page)

6 TM

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

11204

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You					Ē	K	R	×		Ï		
Adult 2	x	X	Ø	X	æ	8	DX-	R	×	×	Ø.	R
Adult 3						X	D.	Ø				
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.	
	Initial
We do not want the Saint Mary's runway to be shortened,	OB
because it will help eliminate economic activities.	Initial

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

\*



Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

Yes

- 1. In what city or village do you primarily live?
- Mountain Vi Uage
- 2. Do you live there year-round?

3. If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - C Personal travel
  - A Business travel
  - ✓ Ordering goods and items
  - X Shipping out goods and items
  - & Other: My immediate family + whole town uses it.

Aix times a year with business, health related, & personal travel. I use the preight airling @ least twice a year to order greight - I CAN NOT Afford extra frig. 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults

- 7. How many children (under 18 years old) live in your household? O children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	Ŧ	X	X	R	R	A	X	x	02	x	x	x
Adult 2	X	×			R	ØC.	x	V	R			
Adult 3												
Child 1												
All others										Ê		

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	A	· 🔀
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

00 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

0 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	×	×	Ŕ	×	×	x	凤	×	X	x	X
Adult 2	X	A	×	A	x	R	X	X	R	X	x	V
Adult 3		Ц		E								
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

Why in the world would anyone attempt to take away our means of traveland living, with all the inflation, none of use would be able to afford to trave or pay more for travel. This affect, our olders and children the most. We need the state to regularly maintain the AWAICS system. Initial We do not want the Saint Mary's runway to be shortened,

because it will help eliminate economic activities.

Initial

14. Your name (optional) Lorraine Long

 Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) <u>190759</u> 6501



Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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1. In what city or village do you primarily live?

Mountain Village

- 2. Do you live there year-round? Yes No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - Business travel
  - Ordering goods and items
  - □ Shipping out goods and items
  - Other: \_\_\_\_\_

for medical Reasons of for personal About Every Month 9304ž

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	-=-		П			-0-	-0-	0-	0	-		-0-
Adult 2												
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	Ø	K
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		Ū.
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)



11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

0 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

1 2 2

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	V	-8-	-0	-8-	B	-8-	- 8-	-8-	-0-	-0-		-8-
Adult 2									- 0			
Adult 3		۵										Ő
Child 1		Ð										Ē
All others								E				E

13. Would you like to tell the team anything else that may assist with the project?

Make it bigger for the surrounding usuages

We need the state to regularly maintain the AWAICS system.

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities. Initial Initial

14. Your name (optional) \_\_\_\_\_ Mt J Russ Len Y

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

ł.



Project Number: Z605630000

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1. In what city or village do you primarily live?

Mountain Village, AK

- 2. Do you live there year-round?
- 3. If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - ☐ Business travel
  - Drdering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	V	V	V	2	P	Ø	R	P	V	Q.	Ē-	Er.
Adult 2	V	P-	2	Ø		V	R	Y	E.	P	4	V
Adult 3	V	R	D	P	V	P	V	D	Dr.	E/		V
Child 1												
All others	Ð											

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	X	X
\$50,000-\$74,999		Ū
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

\_\_\_\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing? Ma

\_\_\_\_%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	X	X	X	X	X	X	X	X	X	×	X
Adult 2	×	X	X	X	X	X	X	×	X	X	×	×
Adult 3	X	X	X	X	X	X	X	X	X	X	X	X
Child 1		0.										
All others		Π.	П									

13. Would you like to tell the team anything else that may assist with the project?

We depend on St. Many's airport because Without bigger planes, exctour village isn't very far like 17-20 miles up the toad. And the airfur prices are very high and we can't afford going this better and or any other traveling site. So please look a the best interest of our community to we need the state to regularly maintain the AWAICS system. EP

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

Initial

Initial

14. Your name (optional)

 Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_

ly . . - a



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### St. Mary's Airport Improvements

Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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1. In what city or village do you primarily live?

2. Do you live there year-round?

Yes No

If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - 🔀 Business travel
  - Section Ordering goods and items
  - Shipping out goods and items

& Other: commercially lought Selmon

use st. Marges for Medical, business mectings sending out Fish, getting Fit from Auch

- 6. How many adults (18 years old and older) live in your household?  $\underline{5}$  adults
- 7. How many children (under 18 years old) live in your household? <u>2</u> children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	8	×	×	A	Ş.	X	₿×	X	X		
Adult 2	×	Ø	R	Ø	×	R	×	×	×	R		×
Adult 3	X	图	54		X	R.	X	×	R	$\overline{\mathbf{x}}$		
Child 1	×	×	×	X					X	×		N
All others		Ő										

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		X
\$30,000-\$49,999		×
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

> 50 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	A	8	A	A	×	8	A	×	¥	Ø		
Adult 2		Ξ										
Adult 3											Ū.	
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

at times	large cargos may need to b	P
flown in	IE housing putarials	

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

Initial

Washey sr 14. Your name (optional)/

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_ c 6904

·



Project Number: Z605630000

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1. In what city or village do you primarily live?

LOUNTAUN V

- 2. Do you live there year-round? Yes No
- 3. If not, please describe the places you live and what times of the year you are in each place.

(I DALY LIVE IN MOUNTAIN, BUT I ( WG ) DO TRAVEL TO THE OTHER I DALY LIVE IN MOUNTAN, BOI I L. ... VILLALES (ST. MARYS, PITKAS POINT, PILOT STATION, MARSHELL (FOOWA LENDE) TO DO SHOPPING AND MEDICAL (KSN). MEDICAL STRVICE DO RELY ON FREIBULT CARRIERS TOO, SOTHAT WILL IMPACT THE MEDICAL IN DUSTRUTO.)

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - R Ordering goods and items
  - Shipping out goods and items
  - Other:

AT LEAST THREE TIMES A YEAR

- 6. How many adults (18 years old and older) live in your household? 5 adults
- 7. How many children (under 18 years old) live in your household? 5 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
YOU RETIN	200											
Adult 2	×	R		×	D.				X		×	×
Adult 3	R	N	×	×	X							
Child 1												
All others								Π				

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	5	R
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

%

(Continue on next page)

e 157

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		N	×	×	R	R	×	X	N	×	X	
Adult 2					N	R	×	X	X	x		
Adult 3					×	×	X	×	×	×		
Child 1												
All others					R	X	×	×	×	2		

13. Would you like to tell the team anything else that may assist with the project?

AIR FRENCHT SERVICE IS OUR LIFE BLOOD, AND WE WILL NOT GET OUR SUSTAINANCE THAT IS REQUIRED, BY GOUDWINCTH FINDINGS. YES WE'VE GOT SUDSISTENCE, BUT WE CAN NOT LIVE OF IT, BECAUSE WE WILL HAVE TO REVENT TO THE OLD WAYS OF WILLER WE ALL DON'T HAVE THE KNILLEDGE. OUR WAYS WILL BE COMPLETELY GONE, BECAUSE WE WONT BE ABLE TO OUN MACHINES We need the state to regularly maintain the AWAICS system. We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

14. Your name (optional) FRED BEANS

 Your email address (only if you would like to be added to the project email list for notifications)

AVUK\_BIYUK@ YAHOU. COM (LINER CASE)

16. Your phone number (optional) 9675912948



Project Number: Z605630000

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1. In what city or village do you primarily live?

2. Do you live there year-round? Yes

Mtn. Village Ak.

If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - ∠ Business travel
  - ✗ Ordering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

When In traveling Shipping Freight to Anchorage or other places Receiving Freight such as Groceries, Honder, Snow Machine

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? 2 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You												
Adult 2							D				П	
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017? Refired

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more	Π	

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?
12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		Ξ.			衣	这	杰	X	X	×	×	Π.
Adult 2					×	X	X	X	X	×	X	
Adult 3	Π					D					D	
Child 1					X	x	×	X	X	×	X	
All others						D						

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

Initial

14. Your name (optional)

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_



Project Number: Z605630000

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1. In what city or village do you primarily live?

Mountain Village

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - 🕱 Business travel
  - Cordering goods and items
  - X Shipping out goods and items
  - Other: \_

I order items that need to be brought of with a cargo plaine at least 3 or 4 times a year.

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	R	R	Ø	X	X	X	Z	N	R	0L	Å	A
Adult 2	R	Æ	R	R	R	B	×	R	x	ØC	ø	X
Adult 3								Q				Ô
Child 1							K	R	×			
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999	X	×
\$75,000-\$99,999		Û.
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

?\_%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	K	X	X	X	X	x	st	×	x	R	x
Adult 2	D.		X	X		X	X	X	X			
Adult 3	A	R	K	×	K	×	R	×	x	A	×	R
Child 1					æ	K	X	×	×	×		
All others												

13. Would you like to tell the team anything else that may assist with the project?

we need a long run way for eargo /very impritant to the community.

14. Your name (optional)

 Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

Ad ... m



Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

Mountain Village

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel

  - Ordering goods and items
  - □ Shipping out goods and items
  - Other: \_\_\_\_\_

Business travel, frieght

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? 2 children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	V	V	V	V	2	9	P	4	4	4	-	P
Adult 2	P	R-	F	-	a	Đ	P	4	-	V	E	V
Adult 3	Ē.											
Child 1												
All others									Ē.			

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	Ø	
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more	D	

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

(00 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

0 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You						V	V	Z				
Adult 2						V	R	V	$+\Box$			
Adult 3												
Child 1												
All others			<u> </u>				Ξ			Ð	D.	

13. Would you like to tell the team anything else that may assist with the project?

There's many Villages who travels to Anchoroge that goes through St. Mary's sight citter for Medical Or for business. Shortwing the nunway May cause problems down the road on the airplanes from taking off fustor and landing immediately.

We need the state to regularly maintain the AWAICS system.

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

ag Initial

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)



Project Number: Z605630000

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1. In what city or village do you primarily live?

Mtn. Village

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - ℁ Business travel
  - Ørdering goods and items
  - 🛛 Shipping out goods and items
  - Other: \_\_\_\_\_

Personally, ow family household members travel to and from St. Mary's airport to other destinations, usually each member travels between 2-4 times annually via KSM airport. We depend on this hub airport to meet our travel nuds and delivery of personal freight items

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? 2 children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	V	V	V	V	V	V	Y	V	R	R	W	V
Adult 2	R	R	Y	V	P	V	R	V	Y	V	R	V
Adult 3		V	V			F	Y	Ø				
Child 1			Ū.			I		P	Ð			
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	Y	Y
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 90 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

90 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	V	V	P	V	4	Y	Y	V	R	Y	V	B
Adult 2		1	V	V	Y			W	V	U.	B	1
Adult 3	V	V	R	Y	V	V	P	D	V	7	P	
Child 1	D	П	V		V	P	P	V	V			P
All others	3	Y	V	F		V	P	P	P			9

13. Would you like to tell the team anything else that may assist with the project?

We do not want the Saint Mary's runway to be shortened, <u>MD</u> because it will help eliminate economic activities. Initial

14, Your name (optional) Melanie Dela Rosa

15. Your email address (only if you would like to be added to the project email list for notifications)

delmel 20022002@ ychoo. Com

16. Your phone number (optional) \_\_\_\_\_\_

di manda



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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1. In what city or village do you primarily live?

MAIN VILLA

- 2. Do you live there year-round? Yes No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - OX Personal travel
  - Business travel
  - Cordering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

- 6. How many adults (18 years old and older) live in your household? (a adults
- 7. How many children (under 18 years old) live in your household? 5\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You												
Adult 2												
Adult 3												
Child 1												
All others	Ū											

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%

12. What months each year do you and	other members of your household
participate in subsistence activities?	(Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	X	Ø.	X	CSK.	A.	A)	K	QX.	ØS.	12	×	X
Adult 2	Ø	R	\$	2×	X	ð	风	dr.	-	A	a.	80
Adult 3	X	Ø	A	(X)	R	-	A	8	R	Dr	Ŕ	0
Child 1					.0				0			
All others								D	Ц	D		Д

13. Would you like to tell the team anything else that may assist with the project?

We need the state to regularly maintain the AWAICS system.

Initial

We do not want the Saint Mary's runway to be shortened, because it will help eliminate economic activities.

EH

14. Your name (optional) Esther Hunter

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)



Project Number: Z605630000

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1. In what city or village do you primarily live?

2. Do you live there year-round? Ye

(Yes) No

3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - Business travel
  - Dirdering goods and items
  - Shipping out goods and items

XOther: \_\_\_\_\_

- 6. How many adults (18 years old and older) live in your household? <u> a</u>dults
  - 7. How many children (under 18 years old) live in your household? 5\_ children
  - 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	Z	Z	X	Z	A	Ø	R	R	X	Z	Z	X
Adult 2					Ø	Z	Z	Z	X	Z		
Adult 3					Z	Z	Z			۵.		
Child 1						Ø	Z					
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	X	X
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

15 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

5 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You						Z	Ø	Ø	Z			
Adult 2	Ø	$\not$	4	₽⁄	Ø	Z	Z	Z	Z	Z	Ø	1
Adult 3			Ó	Ó		Ø	D	Ø	力			
Child 1						Ø	Д	¥	Ø			
All others	A	Ø	A		Á	7	Ø	Z	¥	X	X	力

13. Would you like to tell the team anything else that may assist with the project?

Would help the Surrounding Village's our store the busness stuff that needs to help with the whole community needs even summer time work with Fish, Jobs for people that are able to only work summer time.

14. Your name (optional) Agnes Ange

15. Your email address (only if you would like to be added to the project email list for notifications)

a-george1993 & yahoo. com

16. Your phone number (optional) (907) 438-6732





Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

ST Mary's ATT

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Rersonal travel
  - Business travel
  - I Ordering goods and items
  - ☑ Shipping out goods and items
  - Dother: Medical Transportation

5. How often do you use the St. Mary's airport? Please explain. LT depends on medical / Hopital needs funeral's and events in other communities I would say frequently.

- 6. How many adults (18 years old and older) live in your household? 2 adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You					R	x	X	R				
Adult 2											D	
Adult 3	Ē											
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	×	X
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more	Ū	

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

10 %

(Continue on next page)

1.17

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		D										
Adult 2	R	R	A	X	R	X	R	N	R	X	X	×
Adult 3									0		Q	
Child 1											Q	
All others												

13. Would you like to tell the team anything else that may assist with the project?

Everything That has To do with Aviation is vital in all aspects in order live rural Alaska - Any and All improvements are Needed and welcome

14. Your name (optional) Louis George JR

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) (907) 438- 2850

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Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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1. In what city or village do you primarily live?

St. Mar

2. Do you live there year-round? Ne

Yes) No

3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - ☑ Ordering goods and items
  - Shipping out goods and items
  - Other:

when five got to travel for training

- 6. How many adults (18 years old and older) live in your household? <u>2</u> adults
- 7. How many children (under 18 years old) live in your household?  $\cancel{0}$  children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	(1)	-0-			0		0	-8-	Ū		0	(II)
Adult 2	-											
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	Ø	Ø
\$30,000-\$49,999		D
\$50,000-\$74,999	0	
\$75,000-\$99,999	Ö	
\$100,000 or more		0

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

75 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

<u>¢</u>%

(Continue on next page)

柄,

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	D	0	-0-		0	-0-	0	-0-	0-	-8-	-0	0
Adult 2												
Adult 3												
Child 1										Ð		
All others					E.	Ē	П	Ū.		Ū.	Ð	

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)





Project Number: Z605630000

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1. In what city or village do you primarily live?

St. Mary's Heska

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - ☑ Ordering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

Almost every menth Escorting finiends or family to medical Appl.

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	M	V	V	V	M	V	V	Y	I	V	Ø	Ø
Adult 2	R	Y	V	V	1			3	V	Í	r	
Adult 3						Y	ď	$\square$	V	V	12	
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

50 %

12	.What months	each year	do you	and ot	ther n	nembers	of your	household
	participate in	subsistence	e activiti	ies? (C	Check	all that a	apply)	

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec ,
You	V	9	P	B	T	r	0r	ď	P	F	e	E
Adult 2					9	V	P	D	F		<u> </u>	
Adult 3	R				9	P	P	V	9			P
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) Augusta Westdahl

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) (907) 438-6370

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Project Number: Z605630000

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- 1. In what city or village do you primarily live?
- 2. Do you live there year-round?

Yes No

If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel Business travel Ordering goods and items Shipping out goods and items Other:

- 5. How often do you use the St. Mary's airport? Please explain.
- Traveling out & Kom to Anch / Rethel Janiak
- 6. How many adults (18 years old and older) live in your household? 2 adults
- 7. How many children (under 18 years old) live in your household? <u>children</u>
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You				-0-								
Adult 2												
Adult 3											_	
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999	e	-t
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

2 % No permit for fishing
12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

210

	Jan	Feb	Mar(	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You				X			b					
Adult 2				6			þ	þ			Ū.	
Adult 3							þ	¢				
Child 1				D'			0	d				
All others				X								

13. Would you like to tell the team anything else that may assist with the project?

Shortening the airport (if even) will impack on many bush areas.

14. Your name (optional)

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

· · A

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Project Number: Z605630000

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1. In what city or village do you primarily live?

ST Mary 5

- 2. Do you live there year-round? (Yes) No
- If not, please describe the places you live and what times of the year you are in each place.

4. In what ways do use the St. Mary's Airport?

Rersonal travel
Business travel
Ordering goods and items
Shipping out goods and items
Other: \_\_\_\_\_\_

Seven Joys & week

- 6. How many adults (18 years old and older) live in your household? 3 adults
- 7. How many children (under 18 years old) live in your household? <u>Children</u>
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	8	×	\$	5×	A	×			K	X	X	X
Adult 2	A	X	X	R	\$	R	X	K	×	×	×	X
Adult 3												
Child 1			E									
All others			Ē									

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		0
\$50,000-\$74,999		
\$75,000-\$99,999	R.	×
\$100,000 or more	13	

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

5\_%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		Π			X	8	×	×	X	D.		
Adult 2										D		
Adult 3		0	0								Ð	
Child 1			D								D.	
All others	D		D									

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) fr, 11am Riley ( Rown

15. Your email address (only if you would like to be added to the project email list for notifications)

w Riley & Ayronn i com

16. Your phone number (optional) 438-6124

Y . . . .



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

P. + Ka's Point

- 2. Do you live there year-round? (Yes)
- If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - X Business travel
  - X Ordering goods and items
  - Shipping out goods and items
  - 🗆 Other: \_\_\_\_\_

when ever I need to get some where there is No other road system, or to ship out big equipment

- 6. How many adults (18 years old and older) live in your household? 1 adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	x	K	K	K	×	×	X	×	K	×	×	\$
Adult 2												
Adult 3										Ŭ	Q	
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	X	×
\$30,000-\$49,999		0
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

75 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	x	x	K	K	x	R	R	k	X	K	K	R
Adult 2												
Adult 3												
Child 1												
All others							Ď					

13. Would you like to tell the team anything else that may assist with the project? Do not shorten the st. Mary's Airport runway. If we ever had a evironmental disat dissaster of any Kind that used need the teg Larger Carriers to come an bring gend emergency equipment Like such as oil Clean up Kits or some thing that my concause a Natural dissister. We'l have a good long runnway to expect it the emergency equipment to get here fast. (ASAP) This is one of the bigget biggest Landing Strips In Mile's & Mile's In the higer elavation its on with Connecting road systeme to a Barge Dock.

 Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) (957) 438-2953 is my Mative Corporation Ph#



Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

1		
11	Maulie	
SI	MAND	

2. Do you live there year-round?

es) No

3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Ordering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

I use the airport many times of the Year. Either traveling or picking up Freight from the major airlines.

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You		V	e			Y	Z	P				
Adult 2												
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	9	
\$30,000-\$49,999	D	
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

50 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

20 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept,	Oct	Nov	Dec
You	V					V	Y	e	r			V
Adult 2						0			Ū			Π
Adult 3											Û	
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

Vate of the project.

14. Your name (optional) Misa Beaus

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) <u>907-438-6354</u>

···· A



Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

2. Do you live there year-round? Yes No

3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - ☑ Ordering goods and items
  - Shipping out goods and items
  - POther: medecal

I have multiple medical problems that can apply be addressed in arch.

- 6. How many adults (18 years old and older) live in your household? 4 adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_ children
- What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	disc	ipla	d									
Adult 2					9	I	Y	P	Y			
Adult 3	Y	Y	Y	ľ	M				5	V	Y	D/
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999	I	
\$30,000-\$49,999		V
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

50 %

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	8	N	M	V	U	V	N	Q	V	V	V	N
Adult 2	V	P	V		V		V	ľ	P	P	P	B
Adult 3	P	Br	D/		$\overline{\mathbf{v}}$	N	EV.	DV		5	i.	N
Child 1											à	
All others								C	۵.			

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_

A7 ...



Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

ST MARYS

- 2. Do you live there year-round? (
- If not, please describe the places you live and what times of the year you are in each place.

No

- 4. In what ways do use the St. Mary's Airport?
  - ≯ Personal travel
  - Business travel
  - Ordering goods and items
  - □ Shipping out goods and items
  - Other: \_

12-20 Times a yr. Mostly medical travel between KSM-ANC/KSM-BETHER. Also with the tribal entity for government to government relationships meeting the

- 6. How many adults (18 years old and older) live in your household?  $\underline{\Psi}$  adults
- 7. How many children (under 18 years old) live in your household? / children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

		Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	<sup>-</sup> Dec
You				Ξ		X	×	×	X	X			
Adult 2	124	×	×	×	×	X	X	X	×	×	×	×	X
Adult 3	0									D			
Child 1							×	X	×				
All others	5	X	×	×	×	×	×	×	×	×	×	X	×

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	×	×
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

10 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

%

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
You													)
Adult 2													all
Adult 3	Ξ		Ô	- 0								07	all /
Child 1													
All others													

13. Would you like to tell the team anything else that may assist with the project?

The upkeep & improvements on the existing running To nessecony for all aspects of the bussinesses, medice & personal travel to and from St Mary. & fully Train maintainence crew would be a big plas to ensurette proper care for all functions of the auport. On a final noto: CAA needs to upgrade the Awos, variands etc. along with all the proposed imposvents. There has been too much hardship imposed on the Traveling public this year due to malefunctions causing cancellate

- 14. Your name (optional)
- Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional)

\* • •



Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

- 1. In what city or village do you primarily live? ST Mary 5, AK
- Yes No 2. Do you live there year-round?
- 3. If not, please describe the places you live and what times of the year you are in each place.

9 months in St. Mary's 3 months in Oreyon/Idaho

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Ordering goods and items
  - □ Shipping out goods and items
  - Other:

X: month for 9 months, aug - may

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? \_\_\_\_\_ children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	R	Z	P	R	P	F	F	P	A	F	-12-	H
Adult 2		V	P	P	4	X	X	H	R	P	P	H
Adult 3												
Child 1												
All others					D							

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		
\$50,000-\$74,999		
\$75,000-\$99,999	Ø	Þ
\$100,000 or more		0

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

100 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

\_\_\_\_%

12. What months each year do you and o	other members of your household
participate in subsistence activities? (	(Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You												
Adult 2								1	1			
Adult 3												
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project? AWDS - System needs to in working condition ALL the time. When it is down we can't Sly in or owd. This causes missed DR. appointments which Can impact many people's health from this community and many other Villages because ST. Mary's airport is the hab. When Awos is down it also assaiss Please do Not shorten the run way. Is shortened the medivac planes, This would be a his include and the heavy freight planes could not come in. This would be a big impact on the economy. Our prices for groceries here are already high and this would make - Also our community is very reliant on commercial fishing IS the bigger them even higher. planes dont come in or oud the fishing Industry would not be able to contine as the fish could not be send out. St. Mary's is the airport hub for many villages. The airport is our

14. Your name (optional) Nikki 4 Cletus Case

Your email address (only if you would like to be added to the project email list for notifications)

nikkircase@yahoo.com

16. Your phone number (optional)

liseline to the outside world. We have to fly, there are no roads to Anchorage Alaska or all villages except one. Our airport must be well mainted for our communitys ecomomy and health,

Mail delivery. Mail is very important as medicine, checks, and other important document and Packages. Currice from the airplance services.

HE DARPLE Christopher Jonston, Project Manages 2301 Peger Rd APR 2 8 2018 SILVA Fuirbanks AK 99709 33703\$5315 0065 **Cletus Case** P0 Box 251 Saint Marys, AK 99658



Project Number: Z605630000

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1. In what city or village do you primarily live?

St. Marys

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - Business travel
  - X Ordering goods and items
  - Shipping out goods and items
  - □ Other:

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You					X	X	X	X	X			
Adult 2												
Adult 3												
Child 1												
All others											Ê	

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_



Project Number: Z605630000

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live? St. Mary 5,

- 2. Do you live there year-round? Yes No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Ordering goods and items
  - Shipping out goods and items
  - □ Other:

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You					1	1	1	1	4			
Adult 2												
Adult 3												
Child 1						D						
All others	Ó											

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

13. Would you like to tell the team anything else that may assist with the project?

14. Your name (optional) \_\_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

\_\_\_\_\_

16. Your phone number (optional) \_\_\_\_\_\_



Project Number: Z605630000

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1. In what city or village do you primarily live?

St. Mary's, AK

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - R Business travel
  - 🗷 Ordering goods and items
  - ✗ Shipping out goods and items
  - Other:

- 6. How many adults (18 years old and older) live in your household?  $\underline{2}$  adults
- 7. How many children (under 18 years old) live in your household?  $\_O$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	20	X	X	×	X			X	$\mathbf{\lambda}$	×	λ	X
Adult 2	X	Ŕ	$\mathbf{x}$	×.	×	×	×	$\mathbf{k}$	×	×	X	×
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	·,	
\$50,000-\$74,999		
\$75,000-\$99,999	X	×
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

<u> (10 %</u>

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

- Feb Mar Sept Oct Nov Dec Jan April May June July Aug You  $\mathbf{X}$  $\lambda$  $\mathbf{A}$ X X X X  $\mathcal{X}$ ∕∕⊡ X 赵 Adult 2  $\mathbf{X}$  $\mathbf{X}$ X  $\mathcal{N}$ XT.  $\mathbf{X}$  $\lambda$ X X ХŪ X<sup>†</sup> Adult 3 ŀ Child 1 Π  $\square$ All others Π  $\square$  $\square$
- 12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

13. Would you like to tell the team anything else that may assist with the project?

Needless to say the St. Many's aurport is our only mode of transportation to access the greater part of Anaska and beyond. We rely on it for mail, freight and most travel. We need larger anicrofts to have in freight and by passand have out salmon in the summer and fail months. If enages were to Occur, we need to have a full legth cross-wiels monway to improve accessibility.

14. Your name (optional) <u>Teresa</u> Pankan

15. Your email address (only if you would like to be added to the project email list for notifications)

tpaukan @ gmail.com

16. Your phone number (optional)


## St. Mary's Airport Improvements

Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

2. Do you live there year-round?

Yes No

St. Mary's, Alaska

If not, please describe the places you live and what times of the year you are in each place.

4. In what ways do use the St. Mary's Airport?
X Personal travel
X Business travel
X Ordering goods and items
X Shipping out goods and items
Other: \_\_\_\_\_

5. How often do you use the St. Mary's airport? Please explain. Daily mail, weekly freight, monthly travel

- 6. How many adults (18 years old and older) live in your household? 2 adults
- 7. How many children (under 18 years old) live in your household?  $\underline{O}$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	×	×	×	X	X	×	×	入	x	<b>X</b>	X
Adult 2	X	Þ	×	X	K			X	×	X	×	X
Adult 3												
Child 1												
All others	Π	Π	Π	Π	Π		Π					

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		×
\$50,000-\$74,999	X	
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

80\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

<u>\_20\_%</u>

(Continue on next page)

partic	ipate in	Subsi	stence	activit				. арріу	)			
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	X	X	×	X	X	X	×	X	×	R	入
Adult 2	ħ	X	¥	X	×	X	X	<b>X</b> -	×	X	X	×
Adult 3		Π	Π		П			Π	Π		Π	

 $\square$ 

 $\square$ 

 $\square$ 

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

 $\square$ 

Π

 $\square$ 

Child 1

All others

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

13. Would you like to tell the team anything else that may assist with the project?

The St. Mary's Airport cannot be shortened because we keed the Northern Air Grao, TET and Everetts DE-6 cargo planes for mail freight and summer commercial fishing fish hauls The community of St. Mary's and the whole Yukon Delta region will be devasted and all the work done by the people to make this a hub will be for nothing. Rawn will be amonoply in this region and the price of all goods and travel will skynocket. We will go backwards on progress. 6000 foot crosswind runway We need a 14. Your name (optional) Francis C. 16 Aans

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

15. Your email address (only if you would like to be added to the project email list for notifications)

francis, chunky, beans@qmcil.com

16. Your phone number (optional) 907-438-6160

Francis Beans Po Box 325 St. Many's At 99658 2301 Peger Road Christopher Johnston, Project Manager Fairbanks, Alaska 99709 3300 3153250755 APR 3



## St. Mary's Airport Improvements

Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

DOT&PF operates all programs without regard to race, religion, color, gender, age, marital status, ability, or national origin. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi\_statement.shtml. To file a complaint, go to: dot.alaska.gov/cvlrts/titlevi.shtml.

The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

St Mary's Alaska

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - Business travel
  - Cordering goods and items
  - Shipping out goods and items
  - Other: \_\_\_\_\_

5. How often do you use the St. Mary's airport? Please explain.

Atleast 2 times a Month for travel or shipping goods

- 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults
- 7. How many children (under 18 years old) live in your household? 2 children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You				0								
Adult 2	Ø	X	1X	X	×			×	X	X	X	×
Adult 3	X	×	×	×	X	×	×	X	X	×	K	×
Child 1						È						
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	×	×
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more	D	0

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

9006 %

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

0% %

(Continue on next page)

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	A	X	1×	×	A	X	×	×	X	×	X
Adult 2					X	×	A	X	B			
Adult 3	×	A	A	X	A	A	X	R	K	K	X	×
Child 1												
All others												

13. Would you like to tell the team anything else that may assist with the project?

Continue with the project but do NOT Shorten Runway To Important for the Area

14. Your name (optional) Churs upher Beans

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_\_ 438 2102

Christopher Johnston, Project Manager 3301 Reger Road Fairbanks, Alaska 99709 1000 97052078 1000000 Christopher Beans Bux 313 St.Many's, AIC 99658



## St. Mary's Airport Improvements

Project Number: Z605630000

#### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live? <u>St. Man</u>

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - Personal travel
  - Business travel
  - Cordering goods and items
  - Shipping out goods and items
  - 🗆 Other: \_\_\_\_\_

5. How often do you use the St. Mary's airport? Please explain.

On business travel whenever Freed to, medical travel hand to stay when we need medical travel. I order my household & first supply out cf Anchorage just about every 2 weeks and sometimes need to shep by Freight. 6. How many adults (18 years old and older) live in your household? \_\_\_\_\_ adults

- 7. How many children (under 18 years old) live in your household?  $\underline{3}$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	Ż	$\mathbf{v}$	<u>ک</u>	V	٦¥	$\mathcal{V}$	V	X	X	X	$\mathbf{X}$	心
Adult 2	Ь	E	$'\Box$	6		$\gamma_{\Box}$						
Adult 3												
Child 1						X	V	R				
All others						۲ <mark>۵</mark>	$\overline{\varphi}$	×				

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	∑Ø'	X
\$50,000-\$74,999		
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

11/10\_\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

%

(Continue on next page)

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You			X	¥		۲¥	χØ	Ŷ	×			
Adult 2								` 🗌	<b>I</b>			
Adult 3												
Child 1			X	K		Ŕ	$\mathbf{V}$	Ŕ	¥			
All others			Y	P		¥	$\mathcal{P}$	$\mathbf{A}$	Ý			

13. Would you like to tell the team anything else that may assist with the project?

If project gots thru it will raise all prices and as it is now people will not be able to live in what they have now and not very many people have jobs.

14. Your name (optional) \_\_\_\_

15. Your email address (only if you would like to be added to the project email list for notifications)

16. Your phone number (optional) \_\_\_\_\_





# St. Mary's Airport Improvements

Project Number: Z605630000

Please complete this survey if you are an air carrier, lease holder, or pilot **who uses the St. Mary's Airport.** 

Complete online at https://bit.ly/2pSWpXq (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

- Your name <u>Steve Melchert</u>
   Your title <u>Senior Director of Cargo and Facilities</u>
- 3. Your phone number \_\_\_\_\_ (907) 240-9508
- 4. Your email address (only if you would like to be added to the project email list for notifications)
- 5. Company name <u>ACE Air Cargo</u>
- 6. Physical address

5901 Lockheed Ave.	Anchorage,	AK	99502
Street	City	State	Zip

7. Mailing address X Same as physical

Street City	State	Zip
-------------	-------	-----

- 8. Do you use the St. Mary's Airport? x Yes No
- 9. What services do you provide at the St. Mary's Airport?
  - ✗ Passenger
    ✗ Mail/cargo
    □ Private use only
    □ Other \_\_\_\_\_\_

10. How many total aircraft do you have based at the St. Mary's Air	port? <u>0</u>
---	----------------

Passenger Service Section

Fill out this section if you operate passenger service. If not, skip to the next section.

11. What types of aircraft do you currently use for passenger service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations
Beech Aircraft Co.	Beech 1900	

12. What is your estimated annual number of passengers?

Scheduled:	2017:	0	_2016:	0	2015:	0	
Chartarad	2017.	unknown	2017.	unknown	2015.		

Chartered: 2017: <u>unknown</u> 2016: <u>unknown</u> 2015: <u>unknown</u>

13. What is your estimated annual number of operations?
Scheduled: 2017: <u>0</u> 2016: <u>0</u> 2015: <u>0</u>
Chartered: 2017: <u>unknown</u> 2016: <u>4</u> 2015: <u>0</u>
14. When is your peak time of year?
15. What is your summer schedule? Charter only
16. What is your winter schedule? Charter only
<ul> <li>17. Have your number of operations changed in the past 5 years?</li> <li>Increased</li> <li>No change</li> <li>Decreased</li> <li>Other</li> </ul>
18. Please estimate the percentage change. <u>0</u> %
<ul> <li>19. How do you anticipate your services will change in the next 5 years?</li> <li>Increase</li> <li>No change</li> <li>Decrease</li> <li>Other</li> </ul>
20. Do you provide nighttime Medivac services? Yes x No
21. If yes, what type of aircraft do you use?
22. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

If some of the big carriers stop servicing St. Mary's, we may pick up some of their passenger traffic.

### Mail/Cargo Service

Fill out this section if you operate mail and/or cargo service. If not, skip to the next section.

23. What types of aircraft do you currently fly for mail/cargo service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations
Beech Aircraft Co.	Beech 1900	2

24. What is your estimated weight in pounds of mail at St. Mary's airport?

Inbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>
Outbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>

25. What is your estimated weight in pounds of cargo?

Inbound:	2017: <u>0</u>	2016: <u>2,312</u>	2015: <u>0</u>
Outbound:	2017: <u>0</u>	2016: <u>1,800</u>	2015: <u>0</u>

26. What is your estimated annual number of operations?

Mail:	2017: <u>0</u>	2016: <u>2</u>	2015: <u>0</u>
Cargo	: 2017: <u>0</u>	2016: <u>2</u>	2015: <u>0</u>

27. Estimate your total annual weight of fish products.
Inbound: <u>0</u> pounds
28. Estimate your total annual weight of fuel shipments.
Inbound:0 pounds
29. Estimate your total annual weight of another special cargo, if applicable.
Inbound: pounds Outbound: pounds
30. When is your peak time of year?
31. What is your summer schedule? Charter Only
32. What is your winter schedule? Charter Only
<ul> <li>33. Have your number of operations changed in the past 5 years?</li> <li>Increased</li> <li>X No change</li> <li>Decreased</li> <li>Other</li> </ul>
34. Please estimate the percentage change. <u>0</u> %
<ul> <li>35. How do you anticipate your services will change in the next 5 years?</li> <li>Increase</li> <li>No change</li> <li>Decrease</li> <li>Other</li> </ul>
36. Do you provide nighttime Medivac services? Yes X No
37. If yes, what type of aircraft do you use?
38. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

If some of the big carriers stop servicing St. Mary's, we may pick up bypass mail services and have a stronger presence in the village.

### Private Use Section

Fill out this section if you operate at the St. Mary's Airport for private purposes. If not, skip to the next section.

39. What types of aircraft do you currently fly? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

40. When is your peak time of year? \_\_\_\_\_

- 41. Have your number of operations changed in the past 5 years?
  - □ Increased
  - □ No change

  - □ Other \_\_\_\_\_

42. Please estimate the percentage change. \_\_\_\_%

- 43. How do you anticipate your services will change in the next 5 years?
  - □ Increase
  - □ No change
  - □ Decrease
  - □ Other \_\_\_\_\_

#### **Runways Section**

The St. Mary's Airport runway 17/35 is 6,008 feet long and 150 feet wide, with a gravel surface. The crosswind runway 6/24 is 1,520 feet long and 60 feet wide, with a gravel surface.

44. What is the minimum runway length you need to operate your current fleet of aircraft?

Manufacturer	Model	Minimum Runway Length (feet)
Beech Aircraft Co.	Beechcraft 1900	3000

45. If the length of runway 17/35 was reduced by any amount would you still be able to serve St. Mary's Airport?

X Yes No

At 3000 ft. there is a reduction in payload. 4000 ft. supports a full payload. We could also refuel in Bethel.

46. What is the minimum runway length that you need without having a negative impact on your current operations?

\_\_\_\_\_feet

- 47. Would you/could you switch to different aircraft to serve St. Mary's? Please explain.
- 48. What is the minimum runway length you need to operate your future fleet of aircraft?

\_\_\_\_\_ feet

49. Do you use the crosswind runway? Yes No Unsure

50. Is the crosswind runway sufficient for your needs? Please explain.

51. Runway 17 has published RNAV and LOC/DME approaches. Runway 35 has a published RNAV approach. Would an additional instrument approach be beneficial to your business?

Yes X No Maybe

52. If yes, what type? \_\_\_\_\_\_

53. What percentage of your operations are VFR versus IFR?

VFR: \_\_\_\_% IFR: \_\_\_\_%

- 54. Are there any obstruction hazards during approach, taxiing, or take-off that the team should know about?
- 55. Are there any runway conditions (visibility, constraints, roughness, etc.) that the team should know about?
- 56. What improvements do you think are needed (lighting, apron, taxiway, facilities, pavement, etc.)?
- 57. How often is this airport unusable due to soft or rough surface conditions? Please explain.
- 58. Do you experience congestion in using the runway, taxiway, or apron areas? Please explain.
- 59. Would you like to tell the team anything else that may assist with the project?



# St. Mary's Airport Improvements

Project Number: Z605630000

Please complete this survey if you are an air carrier, lease holder, or pilot **who uses the St. Mary's Airport.** 

Complete online at https://bit.ly/2pSWpXq (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1.	Your nameJe	ff Munro		
2.	Your title <u>Ca</u>	argo Operations Manager		
3.	Your phone numbe	er(907) 266-7801		
4.	Your email address for notifications)	only if you would like to be added to t	he project	email list
5.	Company name	Alaska Airlines		
6.	Physical address			
	4100 Old Internation	onal Airport Rd. Anchorage	AK	99502
	Street	City	State	Zip
7.	Mailing address	X Same as physical		
	Street	City	State	Zip

- 8. Do you use the St. Mary's Airport? Yes <sup>X</sup> No
- 9. What services do you provide at the St. Mary's Airport?

  - □ Mail/cargo
  - □ Private use only
  - Other \_\_\_\_\_

10. How many total aircraft do you have based at the St. Mary's Airport? \_\_\_\_0\_\_\_\_

Passenger Service Section

Fill out this section if you operate passenger service. If not, skip to the next section.

11. What types of aircraft do you currently use for passenger service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

12. What is your estimated annual number of passengers?

 Scheduled:
 2017:
 0
 2016:
 0
 2015:
 0

 Chartered:
 2017:
 0
 2016:
 0
 2015:
 0

13.	What is your	estimated	annual n	umber of o	peratior	is?		
	Scheduled:	2017:	0	_2016:	0	2015:	0	
	Chartered:	2017:	0	_2016:	0	2015:	0	
14.	When is you	r peak time	e of year?					
15.	What is your	summer s	chedule?					
16.	What is your	winter sch	nedule?					
17.	Have your nu □ Incr ⊠ No o □ Dec □ Othe	umber of o reased change reased er	perations	changed ir	the par	st 5 years?		
18.	Please estima	ate the per	rcentage	change. <u>(</u>	<u>)</u> %			
19.	How do you Incr No o Dec Othe	anticipate rease change rease er	your serv	ices will cha	ange in T	the next 5 y	ears?	
20.	Do you provi	de nighttin	ne Mediva	ac services?	Yes	x No		
21.	If yes, what	type of air	craft do y	ou use?				
22	Briefly descri	ibe vour lo	na-range	business pl	an (i e	10-20 vears	) as it relates t	<u>o</u>

22. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

We do not currently have any plans to enter St. Mary's, but may consider if it is paved. We used to fly in pre 9/11 when it was paved, but our current fleet type cannot land there. We retired our gravel kits in 2007. We serve 19 rural communities, and are looking to expand. We just entered Unalakleet.

### Mail/Cargo Service

Fill out this section if you operate mail and/or cargo service. If not, skip to the next section.

23. What types of aircraft do you currently fly for mail/cargo service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

24. What is your estimated weight in pounds of mail at St. Mary's airport?

Inbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>
Outbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>

25. What is your estimated weight in pounds of cargo?

Inbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>
Outbound:	2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>

26. What is your estimated annual number of operations?

Mail: 2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>
Cargo: 2017: <u>0</u>	2016: <u>0</u>	2015: <u>0</u>

27. Estimate your total annual weight of hish produ	27. Estim	t of fish prod	ucts.
---	-----------	----------------	-------

Inbound: <u>0</u> pounds

28. Estimate your total annual weight of fuel shipments.

Inbound: <u>0</u> pounds

29. Estimate your total annual weight of another special cargo, if applicable.

Inbound: \_\_\_\_\_ pounds Outbound: \_\_\_\_\_ pounds

30. When is your peak time of year? \_\_\_\_\_\_

- 31. What is your summer schedule?
- 32. What is your winter schedule?
- 33. Have your number of operations changed in the past 5 years?
  - Increased
     No change
  - □ Decreased
  - □ Other \_\_\_\_\_

34. Please estimate the percentage change. <u>0</u>%

35. How do you anticipate your services will change in the next 5 years?

36. Do you provide nighttime Medivac services? Yes X No

37. If yes, what type of aircraft do you use? \_\_\_\_\_

38. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

We do not currently have any plans to enter St. Mary's, but may consider if it is paved. We used to fly in pre 9/11 when it was paved, but our current fleet type cannot land there. We retired our gravel kits in 2007. We serve 19 rural communities, and are looking to expand. We just entered Unalakleet.

### Private Use Section

Fill out this section if you operate at the St. Mary's Airport for private purposes. If not, skip to the next section.

39. What types of aircraft do you currently fly? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

40. When is your peak time of year? \_\_\_\_\_

- 41. Have your number of operations changed in the past 5 years?
  - □ Increased
  - □ No change
  - □ Decreased
  - Other \_\_\_\_\_

42. Please estimate the percentage change. \_\_\_\_%

- 43. How do you anticipate your services will change in the next 5 years?
  - □ Increase
  - □ No change
  - □ Decrease
  - □ Other \_\_\_\_\_

#### **Runways Section**

The St. Mary's Airport runway 17/35 is 6,008 feet long and 150 feet wide, with a gravel surface. The crosswind runway 6/24 is 1,520 feet long and 60 feet wide, with a gravel surface.

44. What is the minimum runway length you need to operate your current fleet of aircraft?

Manufacturer	Model	Minimum Runway Length (feet)
Boeing	Boeing 737-700	5000

45. If the length of runway 17/35 was reduced by any amount would you be able to serve St. Mary's Airport?

Yes x No

46. What is the minimum runway length that you need without having a negative impact on your current operations?

47. Would you/could you switch to different aircraft to serve St. Mary's? Please explain.

No, not economically viable.

48. What is the minimum runway length you need to operate your future fleet of aircraft?

<u> 5000 </u>feet

- 49. Do you use the crosswind runway? Yes X No
- 50. Is the crosswind runway sufficient for your needs? Please explain. Too short
- 51. Runway 17 has published RNAV and LOC/DME approaches. Runway 35 has a published RNAV approach. Would an additional instrument approach be beneficial to your business?

Yes No Maybe

- 52. If yes, what type? \_\_\_\_\_
- 53. What percentage of your operations are VFR versus IFR?

VFR: \_\_\_\_% IFR: <u>100</u>%

- 54. Are there any obstruction hazards during approach, taxiing, or take-off that the team should know about?
- 55. Are there any runway conditions (visibility, constraints, roughness, etc.) that the team should know about?
- 56. What improvements do you think are needed (lighting, apron, taxiway, facilities, pavement, etc.)?
- 57. How often is this airport unusable due to soft or rough surface conditions? Please explain.
- 58. Do you experience congestion in using the runway, taxiway, or apron areas? Please explain.
- 59. Would you like to tell the team anything else that may assist with the project?



# **St. Mary's Airport Improvements**

Project Number: Z605630000

Please complete this survey if you are an air carrier, lease holder, or pilot **who uses the St. Mary's Airport.** 

Complete online at https://bit.ly/2pSWpXq (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1.	Your name <u>Zachary Adams</u>	<u> </u>		
2.	Your titleDirector of Op	erations		
3.	Your phone number(9	07) 450-2345		
4.	Your email address (only if you for notifications)	would like to be added to	the project e	email list
5.	Company name <u>Everts A</u>	\ir		
6.	Physical address			
	5525 Airport Industrial Road	Fairbanks,	AK	99709
	Street	City	State	Zip
7.	Mailing address X Same as	physical		
	Street	City	State	Zip

- 8. Do you use the St. Mary's Airport? x Yes No
- 9. What services do you provide at the St. Mary's Airport?
  - A Passenger
    Mail/cargo
    Private use only
    Other \_\_\_\_\_\_

10. How many total aircraft do you have based at the St. Mary's Airport? \_\_\_\_0\_\_\_\_

Passenger Service Section

Fill out this section if you operate passenger service. If not, skip to the next section.

11. What types of aircraft do you currently use for passenger service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations
Pilatus Aircraft	PC-12	22
Cessna	208	4

12. What is your estimated annual number of passengers?

Scheduled:	2017:	0	_2016:	0	2015:	0
Chartered:	2017: <u> </u>	Inknown	2016:	unknown	2015:	unknown

13.W	13. What is your estimated annual number of operations?						
S	cheduled:	2017: <u>-</u>	0	_2016:	0	2015:	0
C	hartered:	2017: _	unknown	2016:	4	_2015:	0
14.W	/hen is your	<sup>.</sup> peak ti	me of year?	late spr	ing		
15.W C	/hat is your harter only	summe	r schedule?				
16.W C	/hat is your harter only	winters	schedule?				
<ul> <li>17. Have your number of operations changed in the past 5 years?</li> <li>Increased</li> <li>No change</li> <li>Decreased</li> <li>Other</li> </ul>							
18. Pl	lease estima	ate the p	percentage c	hange. <u>(</u>	)%		
<ul> <li>19. How do you anticipate your services will change in the next 5 years?</li> <li>Increase</li> <li>X No change</li> <li>Decrease</li> <li>Other</li> </ul>							
20. D	o you provi	de night	ttime Mediva	c services?	Yes	x No	
21. lf	yes, what t	type of a	aircraft do yo	ou use?			
					<i>.</i>		

22. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

-----

### Mail/Cargo Service

Fill out this section if you operate mail and/or cargo service. If not, skip to the next section.

23. What types of aircraft do you currently fly for mail/cargo service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations
Douglas Aircraft Co.	DC-6a	52
Embraer	EMB-120 Brasilia	8
Pilatus Aircraft	PC-12	6
Curtiss-Wright	C-46	6
Cessna	208	2

24. What is your estimated weight in pounds of mail at St. Mary's airport?

Inbound:	2017: <u>1,657,861</u>	2016: <u>1,501,032</u>	2015: <u>1,373,365</u>
Outbound:	2017: <u>292,672</u>	2016: <u>287,907</u>	2015: <u>297,396</u>

25. What is your estimated weight in pounds of cargo?

Inbound:	2017: <u>542,882</u>	2016: <u>559,099</u>	2015: <u>637,978</u>
Outbound:	2017: <u>191,125</u>	2016: <u>575,032</u>	2015: <u>282,916</u>

26. What is your estimated annual number of operations?

Mail: 2017: <u>54</u>	2016: <u>59</u>	2015: <u>62</u>
Cargo: 2017: <u>54</u>	2016: <u>59</u>	2015: <u>62</u>

27. Estimate your to	tal annual	weight of	fish (	products.
----------------------	------------	-----------	--------	-----------

Inbound: \_\_\_\_\_\_ pounds All charter, highly dependent on yearly brokers

28. Estimate your total annual weight of fuel shipments.

Inbound: \_\_\_\_\_\_ pounds Only deliver fuel occasionally, and under another service, not Everts Air Cargo

29. Estimate your total annual weight of another special cargo, if applicable.

Inbound: \_\_\_\_\_ pounds Outbound: \_\_\_\_\_ pounds

30. When is your peak time of year? \_\_\_\_\_ late spring\_\_\_\_\_\_

31. What is your summer schedule?

32. What is your winter schedule?

33. Have your number of operations changed in the past 5 years?

- IncreasedNo changeDecreased
- Other \_\_\_\_\_

34. Please estimate the percentage change. <u>0</u>%

35. How do you anticipate your services will change in the next 5 years?

- Increase
- X No change
- Decrease
- Other \_\_\_\_\_

36. Do you provide nighttime Medivac services? Yes X No

37. If yes, what type of aircraft do you use? \_\_\_\_\_\_

38. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

We plan on adding medium turbo prop planes at some point. Possibly ATR-72s or DHC8-100 DASH 8s.

### Private Use Section

Fill out this section if you operate at the St. Mary's Airport for private purposes. If not, skip to the next section.

39. What types of aircraft do you currently fly? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

40. When is your peak time of year? \_\_\_\_\_

- 41. Have your number of operations changed in the past 5 years?
  - □ Increased
  - □ No change
  - □ Decreased
  - Other \_\_\_\_\_\_

42. Please estimate the percentage change. \_\_\_\_%

- 43. How do you anticipate your services will change in the next 5 years?
  - □ Increase
  - □ No change
  - □ Decrease
  - □ Other \_\_\_\_\_

#### **Runways Section**

The St. Mary's Airport runway 17/35 is 6,008 feet long and 150 feet wide, with a gravel surface. The crosswind runway 6/24 is 1,520 feet long and 60 feet wide, with a gravel surface.

44. What is the minimum runway length you need to operate your current fleet of aircraft?

Manufacturer	Model	Minimum Runway Length (feet)
Douglas Aircraft Co.	DC-6a	4500
Curtiss-Wright	C-46	3800
Bombardier Aerospace	DHC8-100 DASH 8	3250
Embraer	EMB-120 Brasilia	4660

45. If the length of runway 17/35 was reduced by any amount would you still be able to serve St. Mary's Airport?

X Yes No

46. What is the minimum runway length that you need without having a negative impact on your current operations?

\_\_\_\_\_5000\_\_\_\_\_feet Anything under 4800 ft. will have a significant impact. I'd prefer at least 5000 for fish.

- 47. Would you/could you switch to different aircraft to serve St. Mary's? Please explain.
   If it drops below 5000, we can transfer our aircraft use to ones with shorter minimum runways.
- 48. What is the minimum runway length you need to operate your future fleet of aircraft?

<u>5000</u> feet

- 49. Do you use the crosswind runway? Yes X No Unsure, probably not
- 50. Is the crosswind runway sufficient for your needs? Please explain.

Too short

51. Runway 17 has published RNAV and LOC/DME approaches. Runway 35 has a published RNAV approach. Would an additional instrument approach be beneficial to your business?

Yes X No Maybe

52. If yes, what type? \_\_\_\_\_\_

53. What percentage of your operations are VFR versus IFR?

VFR: \_\_\_\_% IFR: \_\_\_\_% Seasonally variable. Winter is mostly IFR. summer is mostly VFR.

54. Are there any obstruction hazards during approach, taxiing, or take-off that the team should know about?

South of the airport and to the east there is a 684 ft. tower.

55. Are there any runway conditions (visibility, constraints, roughness, etc.) that the team should know about?

During thaw there's settlement. They have to evaluate the conditions before flying every year.

56. What improvements do you think are needed (lighting, apron, taxiway, facilities, pavement, etc.)?

Doesn't need to be paved, I don't really want it paved. The apron isn't oversized.

57. How often is this airport unusable due to soft or rough surface conditions? Please explain.

It's more likely that we cancel for lack of weather reporting. It's common for the AWOS to fail. We have a contrary procedure when this happens that hasn't received a special exemption yet.

58. Do you experience congestion in using the runway, taxiway, or apron areas? Please explain.

There isn't space for two planes on the apron at once. It can get congested during fishing season.

59. Would you like to tell the team anything else that may assist with the project?


# St. Mary's Airport Improvements

Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

DOT&PF operates all programs without regard to race, religion, color, gender, age, marital status, ability, or national origin. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi\_statement.shtml. To file a complaint, go to: dot.alaska.gov/cvlrts/titlevi.shtml.

The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

2. Do you live there year-round?

Yes No

St. Mary's, Alaska

If not, please describe the places you live and what times of the year you are in each place.

4. In what ways do use the St. Mary's Airport?
X Personal travel
X Business travel
X Ordering goods and items
X Shipping out goods and items
Other: \_\_\_\_\_

5. How often do you use the St. Mary's airport? Please explain. Daily mail, weekly freight, monthly travel

- 6. How many adults (18 years old and older) live in your household? 2 adults
- 7. How many children (under 18 years old) live in your household?  $\underline{O}$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	X	×	×	X	X	×	×	入	x	<b>X</b>	X
Adult 2	X	Þ	×	X	K			X	×	X	×	X
Adult 3												
Child 1												
All others	Π	Π	Π	Π	Π		Π					

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999		×
\$50,000-\$74,999	X	
\$75,000-\$99,999		
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

80\_%

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

<u>\_20\_%</u>

(Continue on next page)

partic	ipate in	Subsi	stence	activit				. арріу	)			
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	×	X	X	×	X	X	X	×	X	×	R	入
Adult 2	ħ	X	¥	X	×	X	X	<b>X</b> -	×	X	X	×
Adult 3		Π	Π		П			Π	Π		Π	

 $\square$ 

 $\square$ 

 $\square$ 

12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

 $\square$ 

Π

 $\square$ 

Child 1

All others

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

13. Would you like to tell the team anything else that may assist with the project?

The St. Mary's Airport cannot be shortened because we keed the Northern Air Grao, TET and Everetts DE-6 cargo planes for mail freight and summer commercial fishing fish hauls The community of St. Mary's and the whole Yukon Delta region will be devasted and all the work done by the people to make this a hub will be for nothing. Rawn will be amonoply in this region and the price of all goods and travel will skynocket. We will go backwards on progress. 6000 foot crosswind runway We need a 14. Your name (optional) Francis C. 16 Aans

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

 $\square$ 

15. Your email address (only if you would like to be added to the project email list for notifications)

francis, chunky, beans@qmcil.com

16. Your phone number (optional) 907-438-6160



# St. Mary's Airport Improvements

Project Number: Z605630000

### Please complete this survey if you are a traveler, resident, and/or elected official who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pTvRpb (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

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The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1. In what city or village do you primarily live?

St. Mary's, AK

- 2. Do you live there year-round? (Yes) No
- 3. If not, please describe the places you live and what times of the year you are in each place.

- 4. In what ways do use the St. Mary's Airport?
  - X Personal travel
  - R Business travel
  - 🗷 Ordering goods and items
  - ✗ Shipping out goods and items
  - Other:

5. How often do you use the St. Mary's airport? Please explain.

- 6. How many adults (18 years old and older) live in your household?  $\underline{2}$  adults
- 7. How many children (under 18 years old) live in your household?  $\_O$  children
- 8. What months each year do you and other members of your household work for income, in any job or self-employment? (Check all that apply)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
You	20	X	X	×	X			X	$\mathbf{\lambda}$	×	λ	X
Adult 2	X	Ŕ	$\mathbf{x}$	×.	×	×	×	$\mathbf{k}$	×	×	X	×
Adult 3												
Child 1												
All others												

9. What was your annual household income in 2016 and 2017?

	2016	2017
\$0-\$29,999		
\$30,000-\$49,999	·,	
\$50,000-\$74,999		
\$75,000-\$99,999	X	×
\$100,000 or more		

10. What percentage of your income in 2017 did you receive from public or private employment, other than commercial fishing or processing? (Full or part time, including employment with a tribal entity, Native Corporation, Yukon Kuskokwim Health Corporation, or the government)

<u> (10 %</u>

11. What percentage of your income in 2017 did you receive from commercial fishing or processing?

(Continue on next page)

- Feb Mar Sept Oct Nov Dec Jan April May June July Aug You  $\mathbf{X}$  $\lambda$  $\mathbf{A}$ X X X X  $\mathcal{X}$ ∕∕⊡ X 赵 Adult 2  $\mathbf{X}$  $\mathbf{X}$ X  $\mathcal{N}$ XT.  $\mathbf{X}$  $\lambda$ X X ХŪ X<sup>†</sup> Adult 3 ŀ Child 1 Π  $\square$ All others Π  $\square$  $\square$
- 12. What months each year do you and other members of your household participate in subsistence activities? (Check all that apply)

13. Would you like to tell the team anything else that may assist with the project?

Needless to say the St. Many's aurport is our only mode of transportation to access the greater part of Anaska and beyond. We rely on it for mail, freight and most travel. We need larger anicrofts to have in freight and by passand have out salmon in the summer and fail months. If enages were to Occur, we need to have a full legth cross-wiels monway to improve accessibility.

14. Your name (optional) <u>Teresa</u> Pankan

15. Your email address (only if you would like to be added to the project email list for notifications)

tpaukan @ gmail.com

16. Your phone number (optional)

Francis Beans Po Bux 325 St. Manujo Ak 99658 2301 Peger Road Christopher Johnston, Project Manager Fairbanks, Alaska 99709 3300 3153250755 APR 3

# St. Mary's Airport Improvements

Project Number: Z605630000

### Please complete this survey if you are an air carrier, lease holder, or pilot who uses the St. Mary's Airport.

Complete online at https://bit.ly/2pSWpXq (case sensitive) or return this form to: Christopher Johnston, Project Manager 2301 Peger Road Fairbanks, Alaska 99709 chris.johnston@alaska.gov (907) 451-2322

DOT&PF operates all programs without regard to race, religion, color, gender, age, marital status, ability, or national origin. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi\_statement.shtml. To file a complaint, go to: dot.alaska.gov/cvlrts/titlevi.shtml.

The purpose of this survey is to gather information for the airport condition and needs assessment. The survey closes on May 18, 2018.

1.	Your name	Don Ruhoff		
2.	Your title	Cargo Scheduler		
3.	Your phone num	ber(907) 249-5144		
4.	Your email addre for notifications)	ess (only if you would like to be added to	the project	email list
5.	Company name _	Northern Air Cargo (NAC)		
6.	Physical address			
	3900 Old Interna	tional Airport Rd. Anchorage,	AK	99502
	Street	City	State	Zip
7.	Mailing address	X Same as physical		
	Street	City	State	Zip

- 8. Do you use the St. Mary's Airport? x Yes No
- 9. What services do you provide at the St. Mary's Airport?

Passenger
 Mail/cargo
 Private use only
 x Other <u>We have offered passengers to fly with our cargo flights but</u> have not had any passengers flying with us in recent years.

10. How many total aircraft do you have based at the St. Mary's Airport? \_\_\_\_0\_\_\_

### **Passenger Service Section**

Fill out this section if you operate passenger service. If not, skip to the next section.

11. What types of aircraft do you currently use for passenger service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

12. What is your estimated annual number of passengers?

Scheduled: 2017: <u>0</u> 2016: <u>0</u> 2015: <u>0</u>

Chartered: 2017: <u>0</u> 2016: <u>0</u> 2015: <u>0</u>

13. What is your estimated annual number of operations?

14. Scheduled: 2017: <u>0</u> 2016: <u>0</u> 2015: <u>0</u>

15. Chartered: 2017: <u>0</u> 2016: <u>0</u> 2015: <u>0</u>

16. When is your peak time of year? \_\_\_\_\_

17. What is your summer schedule?

18. What is your winter schedule?

19. Have your number of operations changed in the past 5 years?

- Increased
- X No change
- Decreased

□ Other \_\_\_\_\_

20. Please estimate the percentage change. <u>0</u>%

21. How do you anticipate your services will change in the next 5 years?

- Increase
- X No change
- Decrease
- Other \_\_\_\_\_\_

22. Do you provide nighttime Medivac services? Yes x No

24. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

### Mail/Cargo Service

Fill out this section if you operate mail and/or cargo service. If not, skip to the next section.

25. What types of aircraft do you currently fly for mail/cargo service at the St. Mary's Airport? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations
Boeing	Boeing 737-200	190-220

26. What is your estimated weight in pounds of mail at St. Mary's airport?

Inbound:	2017: <u>1,118,329</u>	2016: <u>1,090,929</u>	2015: <u>1,146,682</u>
Outbound:	2017: <u>52,879</u>	2016: <u>30,778</u>	2015: <u>56,065</u>

27. What is your estimated weight in pounds of cargo?

Inbound:	2017: <u>355,952</u>	2016: <u>364,768</u>	2015: <u>500,490</u>
Outbound:	2017: <u>514,817</u>	2016: <u>570,694</u>	2015: <u>496,884</u>

28. What is your estimated annual number of operations?

Mail:	2017: <u>186</u>	2016: 196	2015: <u>212</u>
Cargo	: 2017:	2016:	2015:
Note:	Both Mail and Cargo carrie	ed on same flight	

29. Estimate your total annual weight of fish products.

Outbound: <u>450,000-530,000 over the last three years. For 2018 the fish</u> producer is forecasting an increase of shipping load to as much as 2.5 M lbs. total production.

30. Estimate your total annual weight of fuel shipments.

Inbound: <u>0</u> pounds

31. Estimate your total annual weight of another special cargo, if applicable.

Inbound: \_\_\_\_\_ pounds Outbound: \_\_\_\_\_ pounds

Note: Estimated 80% of cargo flown into St. Mary's is food items.

32. When is your peak time of year? \_\_\_\_\_\_ June-August \_\_\_\_\_\_

- 33. What is your summer schedule?3 days/week, Tues, Thurs, Sat. During fishing season, 6 planes/week
- 34. What is your winter schedule? 2 days/week, Wed, Sat
- 35. Have your number of operations changed in the past 5 years?
  - □ Increased
  - $\square$  No change
  - X Decreased
  - Other <u>a very slight decrease</u>

36. Please estimate the percentage change. \_\_slight (less construction)\_\_

- 37. How do you anticipate your services will change in the next 5 years?
  - M Increase Only if paved. Fish could increase to 2.5 mil. lbs/yr
  - □ No change
  - □ Decrease
  - Other \_\_\_\_\_

Note: The data in 2014 isn't perfect; the fish plant was set up late. Lynden had less cargo because they were focused on Emmonak that year.

38. Do you provide nighttime Medivac services? Yes X No

39. If yes, what type of aircraft do you use? \_\_\_\_\_\_

40. Briefly describe your long-range business plan (i.e. 10-20 years) as it relates to your continued use of St. Mary's Airport.

NAC is retiring its 737-200s, and have one left (the other retired last year). October 31, 2018 will be the last day of service with the 737-200. NAC's fleet is moving to 737-300s only, they are not equipped with gravel kits. NAC has reviewed a number of cargo aircraft, including ATR 72s, but the cost is prohibitive for us to continue flying gravel-compatible aircraft. If St. Mary's is paved, NAC may be able to provide jet cargo flag-stop service to St. Mary's with its Unalakleet/Bethel run, three times per week.

737 need pavement to avoid damage from gravel. During the last fishing season, NAC has several aircraft tires damaged while operating on the St. Mary's runway. Aircraft damage at St. Mary's makes operating there uneconomical.

NAC has observed that DC-6s across the market are being phased out. NAC no longer operate DC-6s.

### **Private Use Section**

Fill out this section if you operate at the St. Mary's Airport for private purposes. If not, skip to the next section.

41. What types of aircraft do you currently fly? Note: Each takeoff counts as one operation and each landing counts as one operation.

Manufacturer	Model	Operations

42. When is your peak time of year? \_\_\_\_\_

- 43. Have your number of operations changed in the past 5 years?

  - □ No change
  - Decreased
  - Other \_\_\_\_\_

44. Please estimate the percentage change. \_\_\_\_%

- 45. How do you anticipate your services will change in the next 5 years?
  - □ Increase
  - □ No change
  - □ Decrease
  - □ Other \_\_\_\_\_

### **Runways Section**

The St. Mary's Airport runway 17/35 is 6,008 feet long and 150 feet wide, with a gravel surface. The crosswind runway 6/24 is 1,520 feet long and 60 feet wide, with a gravel surface.

46. What is the minimum runway length you need to operate your current fleet of aircraft?

Manufacturer	Model	Minimum Runway Length (feet)
Boeing	737-200 (retiring)	5000
Boeing	737-300	5000

47. If the length of runway 17/35 was reduced by any amount would you still be able to serve St. Mary's Airport?

Yes X No

At 5000 ft. there is a reduction in payload. 6000 ft. supports a full payload.

48. What is the minimum runway length that you need without having a negative impact on your current operations?

\_\_\_\_6000 feet

49. Would you/could you switch to different aircraft to serve St. Mary's? Please explain.

We have evaluated acquiring different propeller aircraft, but determined that it is cost-prohibitive.

50. What is the minimum runway length you need to operate your future fleet of aircraft?

<u>\_\_\_6000</u> feet

- 51. Do you use the crosswind runway? Yes XNo
- 52. Is the crosswind runway sufficient for your needs? Please explain. Too short
- 53. Runway 17 has published RNAV and LOC/DME approaches. Runway 35 has a published RNAV approach. Would an additional instrument approach be beneficial to your business?
  - X Yes No Maybe
- 54. If yes, what type? We use the published approaches for St. Mary's all the time. Improved approaches are always helpful. LPV with lower minimums would be useful
- 55. What percentage of your operations are VFR versus IFR?

VFR: \_\_\_\_% IFR: <u>100</u>%

- 56. Are there any obstruction hazards during approach, taxiing, or take-off that the team should know about?
- 57. Are there any runway conditions (visibility, constraints, roughness, etc.) that the team should know about?NAC schedules flights for 3:00 PM, to avoid foggy conditions in the morning.
- 58. What improvements do you think are needed (lighting, apron, taxiway, facilities, pavement, etc.)?
  NAC needs a paved 6,000 runway to continue jet service to St. Mary's.
  NACs 737-300 do not have gravel kits.
  NAC anticipates that October 31, 2018 will be last day of operations at St. Mary's until the runway is paved.
- 59. How often is this airport unusable due to soft or rough surface conditions? Please explain.

The runway surface is often soft. Eric (Airport manager) does a good job of notifying air carries when it is inoperable due to weather. Water **doesn't drain** from the surface; it takes two days for the runway to dry after a heavy rain before planes can use the runway.

- 60. Do you experience congestion in using the runway, taxiway, or apron areas? If there's 2 aircraft it's a bit busy.
- 61. Would you like to tell the team anything else that may assist with the project? The crosswind is strong at KSM, similar to Unalakleet. The AWOS is down fairly often. Once, when it was down for a solid week NAC had to give cargo to Everts to get it into the community. It seems to be a statewide issue with reliable operations of weather stations and NAVAIDs.

Appendix E: Population and Socioeconomic Information

# St. Mary's Socioeconomic Profile and Preliminary Discussion of Impacts of Changes to Cargo Costs

Prepared for

# Alaska Department of Transportation & Public Facilities and HDL Engineering Consultants, LLC

August 2018

Prepared by

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# Contents

Section		Page
Abbrevia	ations	iv
1	Introduction	
1.1	Sources of Information	1
1.1.1	Community Surveys	1
2	Socioeconomic Profile	2
2.1	Population Characteristics	2
2.2	Population Projection	3
2.3	Housing	4
2.4	Employment and Businesses	5
2.4.1	Participation in Commercial Fishing	10
2.5	Income and Poverty Status	12
2.6	Subsistence Activities	15
2.7	Importance of Employment and Income to Residents	16
3	Regional Fishing and Processing Activity	
3.1	Fishermen	19
3.2	Commercial Harvest	20
3.3	Processors	23
3.4	Processed Fish Transportation	24
3.5	Fisheries Effects on Communities	25
3.6	Scenario Assumptions	25
3.7	Projected Fishery Harvests	29
3.8	Fishery Related Air Cargo Capacity	
3.9	Scenario Evaluations	
3.10	Summary	35
4	Preliminary Discussion of Impacts of Changes in Cargo Costs	
4.1	Importance of Seafood Exports on Overall Freight Volumes	
4.2	Costs of Living and Doing Business	
4.3	Employment and Population	
5	References	

Table	Page
Table 1. Estimated Population, Kusilvak Census Area and Study Area Cities, 2008–2017	2
Table 2. Age and Gender Groups, Kusilvak Census Area and Study Area Cities, 2010	2
Table 3. Race, Kusilvak Census Area and Study Area Cities, 2010	3
Table 4. Average Family and Household Size, Kusilvak Census Area and Study Area Cities, 2010.	5
Table 5. Housing Units and Occupancy Status, Kusilvak Census Area and Study Area Cities, 2010	05

Table 6. Labor Force Participation and Employment, Kusilvak Census Area and Study Area Cities,         2012, 2016
Zuiz-zuio
Table 9. Top Occupations, Rusilvar Census Area, 2010
Table 8. Top Occupations in St. Mary S, 2016
Table 9. Licensed Businesses in the Study Area
Table 10. Incorporated Businesses in the Study Area
Table 11. Professional Licensees in the Study Area       10         Table 10. File in David in the Study Area       10
Table 12. Fisheries Participation in Yukon River District 2 Communities, 2017
Table 13. Non-Confidential Landings and Earnings, Kusilvak Census Area and Study Area Cities,         2016
Table 14. Seasonality of Employment: Number of Residents Working, by Number of Months per         Vacr
Tedi
Table 15. Household and Individual Income, Ruslivak Census Area and Study Area Cities, 201612
Table 17. Responses by Household Income in 2017
Table 17. Responses by Household Income III 2017
2016
Table 19. Income from Employment, Non-Fisheries-Related and Fisheries-Related, 201714
Table 20. Poverty Status, Kusilvak Census Area and Study Area Cities, 201615
Table 21. Seasonality of Subsistence: Number of Residents Participating in Subsistence Activities, by Number of Months per Year
Table 22. Regression Results. Effect of Employment and Wages on Population in Kusilvak Census
Area16
Table 23. Number of Salmon Fishery Openings by District and Season, 2012–2017
Table 24. Date of Salmon Fishery Openings by District Gear Type, 2012-2017
Table 25. Subsistence Salmon Harvest in District 2, Yukon River, 2015
Table 26. Permit Ownership and Use in Yukon River District 2 Communities, 2015-201820
Table 27. Lower Yukon River Summer Chum Commercial Harvests, 2005–2017
Table 28. Lower Yukon River Summer Chinook Commercial Harvests, 2005–2017
Table 29. Lower Yukon River Fall Chum Commercial Harvests. 2005–2017
Table 30. Lower Yukon River Fall Coho Commercial Harvests, 2005–2017
Table 31. Total Commercial Salmon Harvest Value, Districts 1 and 2, 2005–2017
Table 32. Lower Yukon River Fall Chum and Coho Average Harvest Per Day in Pounds,      2012–2016
Table 33. Projected Lower Yukon River District 1 Salmon Openings, Harvest and Ex-Vessel Value 30
Table 34. Projected Lower Yukon River District 2 Salmon Openings, Harvest and Ex-Vessel Value 31
Table 35. Projected St. Mary's Weekly Scheduled and Available Charter Air Service by Scenario32
Table 36. Projected Lower Yukon River District 2 Weekly Salmon Cargo Volumes. Fleet
Composition, and Freight Costs Under Three Scenarios
Table 37. Freight Volumes at St. Mary's Airport, 2002-2017

Figure	Page
Figure 1. Responses by Primary Place of Residence	1
Figure 2. Estimated Historical and Projected Populations in Kusilvak Census Area, 2000–2060	4
Figure 3. Workers by Industry, Kusilvak Census Area, Percentage of Total, 2016	6
Figure 4. Workers by Industry, St. Mary's, Percentage of Total, 2016	7

# Abbreviations

ADCCED	Alaska Department of Commerce, Community, and Economic Development
ADF&G	Alaska Department of Fish and Game
ADOLWD	Alaska Department of Labor & Workforce Development
H&G	Headed and gutted
CDQ	Community Development Quota
CFEC	Alaska Commercial Fisheries Entry Commission
lb	pounds
NAC	Northern Air Cargo
YDFDA	Yukon Delta Fisheries Development Association

# 1 Introduction

This report presents a baseline socioeconomic profile for the Kusilvak Census Area (renamed from the Wade Hampton Census Area in 2015) and cities in the study area, consisting of Marshall, Mountain Village, Pilot Station, Russian Mission, and St. Mary's. Selected tables and figures also include Pitka's Point, a Census Designated Place located near to St. Mary's, since its residents use the St. Mary's Airport. It then discusses existing cargo activity and develops preliminary estimates of the economic and socioeconomic impacts of potential changes in air cargo shipping costs at the St. Mary's airport as a result of potential changes to the configuration of the St. Mary's airport and the aircraft that service the community. The purpose of the report is to provide a preliminary understanding of the implications of those changes to inform additional analysis.

### 1.1 Sources of Information

Information in this report came from a variety of sources, including published data from government agencies, a survey of residents announced at a public meeting in St. Mary's and on the project website, and interviews with stakeholders and key informants. Surveys of businesses and air carriers also informed the analysis, especially the discussion of potential effects of changes to the airport and types of aircraft, contained in Section 4: Preliminary Discussion of Impacts of Changes in Cargo Costs. The references section provides detail about the published sources and interviews used to develop this profile and estimate of impacts.

### 1.1.1 Community Surveys

The resident survey was administered online and in person. In total, there were 54 responses to the resident survey, 12 responses to the business survey, and 5 responses to the air carrier survey.

Of the resident surveys received, 59 percent of respondents reported St. Mary's as their place of residence, followed by 37 percent from Mountain Village (Figure 1). One person each reported Pitka's Point and Anchorage as their residence.



### Figure 1. Responses by Primary Place of Residence

Source: Resident survey and Northern Economics, Inc. analysis

# 2 Socioeconomic Profile

### 2.1 **Population Characteristics**

Over the last ten years, the Kusilvak Census Area and the five cities have grown in population. Though still above where it was in 2008, the population of Mountain Village experienced a 10 percent loss in population from 2015 to 2017. The five cities together accounted for more than one-third of the census area's population in 2017.

	Year									
Place	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Kusilvak Census Area	7,376	7,401	7,459	7,675	7,675	7,942	8,085	8,204	8,200	8,208
St. Mary's	529	548	507	531	518	538	552	563	582	566
Marshall	399	396	414	405	408	472	445	463	459	449
Mountain Village	783	806	813	841	827	861	859	902	860	811
Pilot Station	555	544	568	587	595	628	637	626	647	651
Pitka's Point	134	113	109	113	109	106	125	128	124	131
Russian Mission	319	314	312	301	312	311	326	334	330	331

Table 1. Estimated Population, Kusilvak Census Area and Study Area Cities, 2008–2017

Source: Alaska Department of Labor & Workforce Development (ADOLWD) (2016) and Northern Economics, Inc. archives

Table 2 shows the population by age group and gender for the census area and five cities. The age ranges roughly correspond to persons who are young and not working (under 18), working (18–64), and retired (65 and over). In general, these locations have Under 18 and 18–64 populations that are relatively close, with Under 18 representing a slightly smaller proportion of the total. The population of persons 65 and over is much smaller. The male-to-female ratio ranges from 1.05 to 1.14, and it is 1.11 in St. Mary's.

St. Mary's had the oldest population of the places shown, as measured by median age, with a median age of 26.3 years, 3 or more years higher than the census area and other cities. Pilot Station had the lowest median age at 21.2 years.

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	Popula	tion by Age	Range		Gender		
Place	Under 18	18–64	65 and Over	Median Age	Male	Female	
Kusilvak Census Area	3,101	3,954	404	21.9	3,944	3,515	
St. Mary's	195	278	34	26.3	267	240	
Marshall	185	212	17	21.3	218	196	
Mountain Village	321	442	50	22.6	417	396	
Pilot Station	235	301	32	21.2	295	273	
Russian Mission	127	177	8	21.8	166	146	

Source: U.S. Census Bureau (2010)

The population in the census area and five cities was primarily Alaska Native or American Indian in 2010, ranging from 92 percent to 98 percent of the total population.

	Race							
Place	White	American Indian/Alaska Native	Black/African American	Asian	Pacific Islander	Other	Two or More Races	
Kusilvak Census Area	199	7,082	1	17	0	3	151	
St. Mary's	19	464	0	0	0	0	24	
Marshall	10	392	0	1	0	0	10	
Mountain Village	34	745	0	6	0	0	26	
Pilot Station	10	557	0	0	0	0	1	
Russian Mission	10	299	0	0	0	0	3	

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Source: U.S. Census Bureau (2010)

The resident survey found that, for those who responded, the population did not vary seasonally. Of the 32 respondents who reside in St. Mary's, only three reported living elsewhere for part of the year. Two were gone during the summer months—one or possibly both are teachers—and one reported Anchorage as their residences during the winter.

### 2.2 **Population Projection**

Figure 2 presents historical population estimates for Kusilvak Census Area and the five cities in the study area. The chart was generated using ADOLWD (2018) estimates of population from 2000 through 2017 and ADOLWD (2016) projections for the census area for 2015 through 2045, with additional analysis to account for more recent population estimates and to extend the results to the five cities and additional years. All of the cities as well as the census area are expected to increase in population.

The ADOLWD projection is based on demographic factors, including births, deaths, and net migration. It does not account for changes in the local economy such as the availability of jobs, cost of living, or other factors. The projection is based at the census area level; the projections for the five cities shown assume that each retains the same proportion of the census area's population.



Figure 2. Estimated Historical and Projected Populations in Kusilvak Census Area, 2000–2060

Source: ADOLWD (2016), ADOLWD (2018), and Northern Economics, Inc. analysis

### 2.3 Housing

At the time of the 2010 Census, the Kusilvak Census Area averaged a family size of 3.28 persons and a household size of 4.27 persons. Each of the five cities had larger average family sizes, though many had smaller household sizes. In St. Mary's, the average family had 4.5 members. The overall average household size, including non-family households, was 3.34.

Place	Average Family Size	Average Household Size
Kusilvak Census Area	3.28	4.27
St. Mary's	4.51	3.34
Marshall	4.95	4.14
Mountain Village	4.23	4.42
Pilot Station	4.69	4.69
Russian Mission	5.47	4.27

Fable 4. Average Fa	mily and Household Size,	, Kusilvak Census Are	a and Study Area	<b>Cities, 2010</b>

Source: U.S. Census Bureau (2010)

There are nearly 2,200 housing units located in the Kusilvak Census Area, with 209 located in St. Mary's. Eighty percent of the housing units in the census area are occupied, compared to 72 percent in St. Mary's. A number of vacant housing units are used seasonally, however, accounting for one-third of the vacant units in St. Mary's and more than half of those in the census area. Two-third of the housing units in St. Mary's are owner occupied. Table 5 provides additional information about housing.

			Occupancy	Type of Occupant		
Place	Total Housing Units	Occupied Housing	Vacant Housing	Vacant Due to Seasonal Use	Owner	Renter
Kusilvak Census Area	2,183	1,745	438	243	1,247	498
St. Mary's	209	151	58	19	102	49
Marshall	108	100	8	1	63	37
Mountain Village	211	184	27	9	119	32
Pilot Station	137	121	16	4	95	26
Russian Mission	74	73	1	0	51	22

Table 5. Housing Units and Occupancy Status, Kusilvak Census Area and Study Area Cities, 2010

Source: U.S. Census Bureau (2010)

### 2.4 Employment and Businesses

The Kusilvak Census Area experiences a high rate of employment, in excess of one-quarter of the civilian labor force. Of those residents who are age 16 and over, the participation rate in the labor force, a measure of those individuals who are employed or seeking to be employed, is 57.6 percent. A small number of individuals are in the armed forces, but the vast majority are in the civilian labor force. More than 42 percent of those age 16 or over are not in the labor force, meaning that they are not seeking employment.

The unemployment rate in St. Mary's is the lowest of the five cities, though the rate is still more than 23 percent. More than 68 percent of those aged 16 and over are in the labor force, the highest participation rate in the study area. Details about the employment and labor force situation are shown in Table 6.

					Рори	lation 16	Years and O	/er	
				In Labor Force					Not in
Civilian			-		Armod				
Place	Labor Force	Unemployment Rate (%)	Total	Total (%)	Forces (%)	Total (%)	Employed (%)	Unemployed (%)	Force (%)
Kusilvak Census Area	2,929	26.4	5,099	57.6	0.2	57.4	42.3	15.2	42.4
St. Mary's	249	23.3	364	68.4	0.0	68.4	52.5	15.9	31.6
Marshall	132	28.8	219	60.3	0.0	60.3	42.9	17.4	39.7
Mountain Village	342	26.3	541	63.2	0.0	63.2	46.6	16.6	36.8
Pilot Station	218	33.9	365	59.7	0.0	59.7	39.5	20.3	40.3
Russian Mission	131	30.5	261	50.2	0.0	50.2	34.9	15.3	49.8

#### Table 6. Labor Force Participation and Employment, Kusilvak Census Area and Study Area Cities, 2012–2016

Source: U.S. Census Bureau (2016)

The largest industry in the Kusilvak Census Area, as measured by employment, is local government, with nearly one-half of the region's employment, as seen in Figure 3. This is followed by trade, transportation, and utilities, at 15 percent, which reflects the important role of logistics in the region.





Similar to the Kusilvak Census Area, St. Mary's largest two industries by employment are local government and trade, transportation, and utilities, as shown in Figure 4. Manufacturing, which equates to fish processing, provides 8 percent of the city's jobs. What is not captured, due to the way labor data are collected, is "employment" the commercial fishing industry<sup>1</sup>. As a result, employment in the overall fishing industry (harvesting and processing) is larger than 8 percent.



#### Figure 4. Workers by Industry, St. Mary's, Percentage of Total, 2016

The top two occupations in the Kusilvak Census Area are Teacher Assistants and Meat, Poultry, and Fish Cutters and Trimmers, as shown in Table 7. That latter category highlights the importance of the fishing industry, on the processing side. Again, the table omits commercial fishers due to the way the labor data are collected. It also separates the number of workers in fish processing into the fish cutters and trimmers occupation and overhead or managerial occupations. It is important to note that the number of workers is averaged for the year, so actual peak employment is higher.

Source: ADOLWD (2016)

<sup>&</sup>lt;sup>1</sup> ADOLWD data covers employees but not self-employed individuals. Since most, if not all, individuals involved in commercial fishing are self-employed, they are not captured in labor data.

Occupation	Number of Workers
Teacher Assistants	308
Meat, Poultry, and Fish Cutters and Trimmers	218
Construction Laborers	187
Office and Administrative Support Workers, All Other	155
Cashiers	149
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	119
Laborers and Freight, Stock, and Material Movers, Hand	113
Elementary School Teachers, Except Special Education	101
Stock Clerks and Order Fillers	79
Retail Salespersons	72
Gaming and Sports Book Writers and Runners	68
Cooks, All Other	61
Office Clerks, General	61
Security Guards	59
Preschool Teachers, Except Special Education	56
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	50
Carpenters	49
Receptionists and Information Clerks	47
Teachers and Instructors, All Other	46
Correctional Officers and Jailers	45
Police and Sheriff's Patrol Officers	42
Bookkeeping, Accounting, and Auditing Clerks	41
File Clerks	40
Medical Assistants	40
Water and Wastewater Treatment Plant and System Operators	40

#### Table 7. Top Occupations, Kusilvak Census Area, 2016

Source: ADOLWD (2016)

In St. Mary's, the largest occupation is Meat, Poultry, and Fish Cutters and Trimmers, with 21 workers and reflective of fish processing. The second largest occupation is Teachers Assistants, as seen in Table 8. Again, the number of workers is averaged for the year, so the peak employment is higher.

Occupation	Number of Workers
Meat, Poultry, and Fish Cutters and Trimmers	21
Teacher Assistants	20
Office and Administrative Support Workers, All Other	13
Gaming and Sports Book Writers and Runners	13
Cashiers	12
Cargo and Freight Agents	12
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	12
Reservation and Transportation Ticket Agents and Travel Clerks	10
Material Moving Workers, All Other	9
Food Preparation Workers	8
Elementary School Teachers, Except Special Education	8
Security Guards	7
Carpenters	7
Maintenance and Repair Workers, General	7
Police and Sheriff's Patrol Officers	6
General and Operations Managers	5
Medical Assistants	5
Stock Clerks and Order Fillers	5

### Table 8. Top Occupations in St. Mary's, 2016

Source: ADOLWD (2016)

A total of 32 businesses are licensed in the five cities and Pitka's Point. Table 9 summarizes the businesses by primary line of business and location. St. Mary's has 9 licensed businesses.

### Table 9. Licensed Businesses in the Study Area

	Location of Business						
Primary Line of Business	St. Mary's	Pitka's Point	Marshall	Mountain Village	Pilot Station	Russian Mission	
11 - Agriculture, Forestry, Fishing and Hunting			1				
23 - Construction	1						
42 - Trade	1	1	2	2	3	3	
48 - Transportation and Warehousing	1				1		
53 - Real Estate, Rental and Leasing	2		1	1	1		
55 - Management of companies and enterprises			1				
71 - Arts, Entertainment and Recreation	1				1		
72 - Accommodation and Food Services	1		3		1		
81 - Services	2					1	
Total Business Licenses by Location	9	1	8	3	7	4	

Source: Alaska Department of Commerce, Community, and Economic Development (ADCCED) (2018) and Northern Economics, Inc. analysis

The study area is likewise home to several incorporated businesses, as shown in Table 10. St. Mary's has 9 incorporated businesses.

	Location of Entity							
Type of Entity	St. Mary's	Pitka's Point	Marshall	Mountain Village	Pilot Station	Russian Mission		
Business Corporation	3	1	4	1	1	1		
Business Name Registration			1					
Limited Liability Company	4		1	1		1		
Nonprofit Corporation	2		1	1	1	1		
Total Corporations by Location	9	1	7	3	2	3		

#### Table 10. Incorporated Businesses in the Study Area

Source: ADCCED (2018) and Northern Economics, Inc. analysis

The number of individuals with professional licenses in the study area is shown in Table 11. St. Mary's has 6 individuals with professional licenses, five of whom are physician assistants.

#### Location of Licensed Professional Marshall **Pilot Station Licensing Program** St. Mary's Architects, Engineers and Land Surveyors 1 1 **Big Game Guides and Transporters** Nurse Aides 1 3 Nursing Physician Assistants 5 **Professional Counselors** 1 **Total Licensed Professionals** 6 5 1

#### Table 11. Professional Licensees in the Study Area

Source: ADCCED (2018) and Northern Economics, Inc. analysis

### 2.4.1 Participation in Commercial Fishing

Many residents of Kusilvak Census Area and the study area cities are actively involved in commercial fishing. Fisheries permit data for 2017, reported by the Commercial Fisheries Entry Commission, is shown in Table 12 for the Yukon River District 2 Communities. Residents of St. Mary's and Pitka's Point owned 77 permits, representing 11 percent of the population.
Place	Permits Owned	Permits Fished	Population	Permits Owned as Percent of Population
St. Mary's and Pitka's Point	77	72	697	11.0
Marshall	45	38	449	10.0
Mountain Village	71	64	811	8.8
Pilot Station	58	52	651	8.9

Table 12. Fisheries Participation in Yukon River District 2 Communities, 20
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Source: Alaska Commercial Fisheries Entry Commission (CFEC) (2017), ADOLWD (2018), and Northern Economics, Inc. analysis

Commercial landings and earnings data are confidential when there are too few participants to report data. This was the case for some of the study area's fisheries in 2016, and other fisheries had no participants. Table 13 shows the non-confidential landings and earnings data for those fisheries in which there was sufficient participation. In total, residents of the Kusilvak Census Area earned about \$5.1 million from commercial fishing in 2016, virtually all of which was from salmon caught in the Lower Yukon. St. Mary's residents earned \$930,000 from salmon, averaging \$14,084 per fisherman who fished. It is important to note that these earnings reflect commercial fishing activity but not processing. The data also do not include any fish taken by sport fishing, subsistence, or personal use fishers.

Place	Fishery	Total Pounds Landed	Estimated Gross Earnings (\$)
Kusilvak Consus Aroa	Salmon, gillnet, Lower Yukon	7,674,855	5,081,456
Rusilvak Census Alea	Fresh water fish, set gillnet, statewide	31,982	48,007
St. Mary's	Salmon, gillnet, Lower Yukon	1,365,726	929,547
Marshall	Salmon, gillnet, Lower Yukon	636,549	422,050
Mountain Village	Salmon, gillnet, Lower Yukon	1,021,609	709,764
Pilot Station	Salmon, gillnet, Lower Yukon	736,454	501,849
Russian Mission	Salmon, gillnet, Lower Yukon	139,825	92,965

#### Table 13. Non-Confidential Landings and Earnings, Kusilvak Census Area and Study Area Cities, 2016

Source: CFEC (2017) and Northern Economics, Inc. analysis

Employment is somewhat seasonal, as reported in the resident survey and summarized in Table 14. Most adults were reported as working either year-round or 10 months per year, with those working fewer than 12 months usually taking time off during the summer. Other adults work fewer months, with varying schedules. Of the 87 children reported by the survey, only 9 work, primary during the summer months.

	Nu	umber of Adult	Number of Resid	Children by lence		
Number of Months Worked Each Year	St. Mary's	Mountain Village	Pitka's Point	Anchorage	St. Mary's	Mountain Village
1	1					
2		1			1	
3		1			5	3
4	2	2				
5	3	2				
6	1	1				
7		1				
8	1					
9	1	1				
10	10	5				
12	40	20	1	1		
Total Number of Residents Reported	59	34	1	1	6	3
Average Months Worked Per Year	10.63	9.85	12.00	12.00	2.83	3.00

Table 14. Seasonality of Employment: Number of Residents Working, by Number of Months per Year

Source: Resident survey and Northern Economics, Inc. analysis

### 2.5 Income and Poverty Status

The Kusilvak Census Area is one of the poorest census areas (or equivalent) in the country. Overall, in 2016 inflation-adjusted dollars, 38 percent of households earned less than \$30,000 annually, and the median household income was \$38,160. Of the five cities in the study area, St. Mary's had the highest median household income, at over \$43,000, and a per capita income of nearly double that of the census area, at \$20,872. Household and individual incomes are shown in detail in Table 15.

	Number with Households with Annual Earnings of					Median	Per
Place	Up to \$29,999	\$30,000- \$49,999	\$50,000- \$74,999	\$75,000- \$99,999	\$100,000 or more	Income (2016 \$)	Capita Income (2016 \$)
Kusilvak Census Area	662	456	301	149	166	38,160	11,701
St. Mary's	38	51	34	15	9	43,125	20,872
Marshall	39	17	10	7	7	30,833	11,525
Mountain Village	64	52	27	22	9	37,813	13,332
Pilot Station	60	21	29	7	12	32,750	9,674
Russian Mission	27	21	9	9	8	35,000	8,911

Table 15. Household and Individual Income, Kusilvak Census Area and Study Area Cities, 2016

Source: U.S. Census Bureau (2016)

Note: These are 5-year estimates from 2012–2016 surveys, adjusted to 2016 dollars.

With a population of 582 in 2016 (see Table 1) and an estimated per capita income of \$20,872, St. Mary's combined community income is approximately \$12.1 million.

The resident survey asked residents to provide their household income in ranges similar to the Census data. Table 16 shows the responses for income in 2016 and Table 17 shows the 2017 income.

	Place of Residence						
	St. Mary's	Mountain Village	Pitka's Point	Anchorage			
2016 Income Range (\$)	Number of Households						
0 to 29,999	8	7	1				
30,000 to 49,999	9	5					
50,000 to 74,999	6	4		1			
75,000 to 99,999	4						
100,000 or more	3						
Total Responses	30	16	1	1			

#### Table 16. Responses by Household Income in 2016

Source: Resident survey and Northern Economics, Inc. analysis

#### Table 17. Responses by Household Income in 2017

	Place of Residence						
	St. Mary's	Mountain Village	Pitka's Point	Anchorage			
2017 Income Range (\$)		Number of H	ouseholds				
0 to 29,999	6	6	1				
30,000 to 49,999	11	7					
50,000 to 74,999	6	4					
75,000 to 99,999	4			1			
100,000 or more	3						
Total Responses	30	17	1	1			

Source: Resident survey and Northern Economics, Inc. analysis

As shown in Table 18, the Census data align well with survey responses from St. Mary's residents. The survey is slightly underweight in the \$30,000–\$74,999 income range, but close enough for survey results to be reasonably representative.

Number with Households with Annual Earning									
Source of Estimate	Up to \$29,999	\$30,000- \$49,999	\$50,000- \$74,999	\$75,000- \$99,999	\$100,000 or more				
Number of Responses									
2016 ACS 5-Year Estimate	38	51	34	15	9				
Resident Survey	8	9	6	4	3				
Percent of Total Responses									
2016 ACS 5-Year Estimate	26	35	23	10	6				
Resident Survey	27	30	20	13	10				

#### Table 18. Comparison of Income in St. Mary's, U.S. Census Bureau Estimates and Resident Survey, 2016

Source: U.S. Census Bureau (2016), resident survey, and Northern Economics, Inc. analysis Note: The ACS estimates are 5-year estimates from 2012–2016 surveys, adjusted to 2016 dollars.

The resident survey results from Mountain Village residents are not representative, according to the Census data, so analysis of employment and income in the remainder of this section is primarily focused on St. Mary's.

The resident survey asked about the percentage of employment that was received from non-fisheriesrelated employment and from commercial fishing and processing employment. Table 19 shows the results from that question.

		Average Percentage of Income From					
Place of Residence		Non-Fisheries-Related Employment (Public or Private)	Commercial Fishing and Processing				
St. Mary's	0 to 29,999	48	10				
	30,000 to 49,999	67	25				
	50,000 to 74,999	68	22				
	75,000 to 99,999	50	1				
	100,000 or more	83	7				
St. Mary's Averag	je (unweighted)	63	16				
Mountain Village	0 to 29,999	25	36				
	30,000 to 49,999	52	28				
	50,000 to 74,999	73	3				
Mountain Village	Average (unweighted)	48	24				
Pitka's Point	0 to 29,999	75	5				
Anchorage	75,000 to 99,999	10	0				

#### Table 19. Income from Employment, Non-Fisheries-Related and Fisheries-Related, 2017

Source: Resident survey and Northern Economics, Inc. analysis

Note: Rows do not total 100 percent because of additional sources of income. Some individual responses were edited to total 100 percent.

As shown in the table, all income ranges reported a substantial amount of income derived from non-fisheries-related employment, while fisheries-related income varied considerably. In St. Mary's, onequarter of income for those in the \$30,000-\$49,999 range came from commercial fishing and processing, but for households earning \$75,000 or more, that percentage dropped to less than 10 percent. The table provides an average across all responses by community, though it has not been weighted by income range. In St. Mary's, the average response was that fisheries-related income was 16 percent of the total for their household, and that percentage increased to 24 percent for those from Mountain Village.

The low income in the region translates into high rates of poverty, as seen in Table 20. One-third of families in the census area are below the poverty level. Due to its higher overall income, St. Mary's has the lowest poverty rate of the five cities, with 20 percent of families and 24 percent of all people below the poverty level.

	Percent Below the Poverty Level			
Place	Families	All People		
Kusilvak Census Area	33.1	36.0		
St. Mary's	20.0	23.6		
Marshall	29.2	29.9		
Mountain Village	35.3	34.1		
Pilot Station	39.8	43.9		
Russian Mission	34.7	37.4		

#### Table 20. Poverty Status, Kusilvak Census Area and Study Area Cities, 2016

Source: U.S. Census Bureau (2016)

### 2.6 Subsistence Activities

Many residents participate in subsistence activities in addition to or in lieu of paid employment. Reported subsistence activity from the resident survey is presented in Table 21. The survey found a majority of adults in St. Mary's participated in subsistence year-round, though several reported shorter periods, other during the summer or fall. On average, adults St. Mary's reported participating in subsistence activities almost 9 months each year, along with more than 6 months of average subsistence activity for children.

Number of Months	N	umber of Adult	Number of Children by Residence			
Spent on Subsistence Activities Each Year	St. Mary's	Mountain Village	Pitka's Point	Anchorage	St. Mary's	Mountain Village
1	1					
2	2	1				
3	4	7				2
4	5	1		1	1	
5	6					
6	6	6			6	6
7	2	4				1
8	1					1
9						1
10	1	2				
11	3				1	
12	36	25	1			4
Total Number of Residents Reported	67	46	1	1	8	15
Average Months of Subsistence Activity Per Year	8.96	8.93	12.00	4.00	6.38	7.60

# Table 21. Seasonality of Subsistence: Number of Residents Participating in Subsistence Activities, by Number of Months per Year

Source: Resident survey and Northern Economics, Inc. analysis

# 2.7 Importance of Employment and Income to Residents

Employment and income is an important factor in determining where people live. Lack of employment opportunities, low wages, and a high cost of living (which can be viewed as a reduction of income) can individually and collectively impact an individual's choice to live in a place. Other factors, including cultural and familial factors, play a role but are not quantifiable. To evaluate the importance of employment and wages to residents of the Kusilvak Census Area, the team conducted regressions to examine their role in predicting changes to population. A summary of the regression results is shown in Table 22. Wages had the greatest predictive power, with variations in total wages explaining 90 percent of changes in population, and those impacts reaching 72–130 people per million dollars of wages.

Table 22. Regression Results, Effect of Employment and Wages on Population in Kusilvak Census Area

	Total (Public	and Private)	Private Sector Only		
Result	Employment	Wages (Millions of \$)	Employment	Wages (Millions of \$)	
R Squared	0.660	0.904	0.725	0.811	
Coefficient	5.470	72.038	6.184	130.309	
P Value	0.004	0.000	0.002	0.000	
Significant at 95% Confidence Level	Yes	Yes	Yes	Yes	

Source: ADOLWD (2008-2018) and Northern Economics, Inc. analysis

# 3 Regional Fishing and Processing Activity

There are three different salmon species harvested in the St. Mary's area: chinook (king), chum (keta) and coho (silver). Salmon are anadromous. They spend the first part of their life in fresh water then travel downstream to the ocean to grow. When they are mature they return upriver to the drainage where they hatched to spawn and then die. The time spent as juveniles in fresh water and rearing in the ocean varies by species. The salmon travel up the Yukon River to their natal spawning grounds during the summer and fall and are available for harvest at any specific location only while they transit the region.

The returning run strength of each species varies by year and each has shown population swings over the past several decades (JTC 2018). The data show that returns for all species and seasonal runs are increasing or at stable, acceptable levels. The reasons for population decline, and increases, are not fully understood. Unlike fish stocks in much of North America, there are very few upriver negative impacts that are directly human related. At-sea survival of salmonids is not fully understood. For the past decade there has been a concerted effort to reduce salmon bycatch in large offshore fisheries in U.S. waters, which has coincided with increasing chinook returns. However, it is presumed that nondirectly human induced factors such as variations in water temperature, phytoplankton availability, diatom blooms, and natural predation play significant roles.

The Yukon River salmon fisheries in Alaska are managed by the Alaska Department of Fish and Game (ADF&G). There are different management objectives for each species and season run. In general, these focus on allowing sufficient escapement to meet spawning goals followed by subsistence needs and other uses. Since some of the salmon migrate as far as Canada, there are also international agreements affecting harvestable amounts. In addition, the summer and fall fisheries are managed by different offices in ADF&G the summer out of the Anchorage office and the fall out of Fairbanks. All of these considerations constrain what can be harvested in the lower river as well as the timing of fisheries to allow adequate escapement for the various upriver runs. The majority of commercial harvest for the entire drainage occurs in the lower Yukon River.

The lower Yukon River fishing region extends to a point about midway between the communities of Marshall and Russian Mission. This region is divided into 2 districts, north (downriver) of Mountain Village. The communities of Alakanuk, Emmonak, Kotlik and Nunam Iqua comprise all the communities in District 1. The communities of Mountain Village, St Mary's, Pitka Point, Pilot Station and Marshall comprise all the communities in District 2. Overall management of the region includes gear restrictions based on timing and run strength as well as district-specific openings based on salmon presence, processor availability, and other factors. Commercial harvests in Districts 1 and 2 are essentially managed overall as one unit focused on ensuring adequate upriver escapement and use surpluses available for commercial harvest. Each district is managed through multiple openings, gear restrictions, and timing of openings.

The summer fishery begins when there are sufficient numbers of salmon expected to arrive in each district. Gears are limited to dip nets and beach seines in order to reduce chinook bycatch. When sufficient escapement has occurred upriver, drift gill nets are permitted. The summer season ends by management practice on July 16, at which time the fall season begins. This season change roughly corresponds to a decrease in chum salmon availability in the lower river and anticipates the beginning of the change in stocks entering the river (Table 23).

	Summer Fall						
	District 1		Dist	rict 2			
Year	Dip Net/ Beach Seine	Drift Net	Dip Net/ Beach Seine	Drift Net	District 1	District 2	
2012	0	10	0	6	13	11	
2013	15	11	17	5	11	11	
2014	21	6	23	6	12	8	
2015	19	8	20	7	14	14	
2016	13	16	9	11	26	23	
2017	10	12	7	2	18	15	
Average 2013-2016	17	10	17	7	16	14	

Table 23. Number of Salmon Fishery Openings by District and Season, 2012–2017

Sources: ADF&G Summer and Fall Fishery Summaries, 2012–2017a and b

The average number of openings for the 2012–2016 period shows that District 1 typically has more openings than District 2. In 2017, far fewer openings were scheduled in District 2 due to a reduction in processing capacity (ADF&G 2012–2017a). Discussions with the fishery managers helped explain some of the differences (Carroll 2018, Estensen 2018). The Kwik'Pak processor in District 1 has freezing and value-added processing capabilities and therefore can both hold fish longer and require less lift capacity to ship a given volume of round fish. Because the District 2 summer fishery begins after that in District 1 due to fish availability, and both end July 16, there are fewer drift gillnet openings possible in District 2. While the fall fishing season occurs over a longer period than the summer season, managers allow only two fishing periods per week until sufficient escapement is verified. The main fall chum and coho runs do not appear until mid-August and they pulse relatively quickly, after which their presence in the lower river declines dramatically.

Over the past five years the first opening in District 1 has ranged from June 9 to June 18 while District 2 typically opens several days later. Likewise, the change in allowable gear to drift nets has occurred from June 23 to July 3 in District 1 and as late as July 11 in District 2. The average opening date for each gear opening by district is presented for the period 2013 to 2016 in Table 24.

#### Table 24. Date of Salmon Fishery Openings by District Gear Type, 2012-2017

Year	Dip Net/ Beach Seine	Drift Net	Dip Net/ Beach Seine	Drift Net	
2012	N/A	29-Jun	N/A	2-Jul	
2013	6/18	7/2	6/20	7/8	
2014	6/9	7/3	6/9	7/6	
2015	6/11	7/2	6/15	7/6	
2016	6/7	6/25	6/14	6/27	
2017	6/10	6/23	6/21	7/11	
Average 2013-2016	6/11	6/30	6/14	7/4	

Sources: ADF&G 2012-2017a and b

### 3.1 Fishermen

The people of the area have historically depended on subsistence salmon harvests for much of their protein needs. Even today, over half the households participate in subsistence salmon fishing (Table 25). Most of these families maintain fishing boats and gear in order to participate in this important activity. The average fishing household takes 110 salmon for subsistence purposes. These fish are shared with other, non-fishing households so that all in the community have access to subsistence salmon.

			Subsistence Harvest, Number of Salmon					
	Households				Chum			
Community	Total	Fishing	Chinook	Coho	Summer	Fall		
Mountain Village	170	104	370	723	6,063	1,398		
Pitka's Point	33	18	44	72	1,225	172		
St. Mary's	135	87	261	391	8,216	1,611		
Pilot Station	121	60	382	305	4,702	1,346		
Marshall	105	50	128	1,511	4,351	1,731		
Total	564	319	1,185	3,002	24,557	6,258		

Table 25.	Subsistence	Salmon	Harvest ir	District 2	, Yukon Riv	/er <i>.</i> 2015

Source: Jallen et al., 2017

The commercial fishery, while seasonal, is the largest single employer in each of the villages in the area. It is also, by far, the largest private sector source of employment in an area with very little manufacturing, services, or businesses.

Fishing is limited entry by transferable license permit. Fishing operations are typically composed of family units, often of three or more people. These include a permit holder and related family members, most often multi-generational. Therefore, the number of permits in a community is a conservative approximation of the number of households participating in the fishery and likely an undercount. A count of permits by community (Table 26) therefore represents about 45 percent of the households shown in Table 25 and 75 percent of the subsistence households.

		Permits					
Community	Year	Fished	Not Fished	Owned			
	2015	36	2	38			
Maraball	2016	36	2	38			
Marshall	2017	38	7	45			
	2018	-	-	39			
	2015	66	7	73			
Mountain Villago	2016	68	4	72			
Nountain village	2017	64	7	71			
	2018	-	-	66			
	2015	53	2	55			
Dilot Station	2016	52	3	55			
	2017	50	8	58			
	2018	-	-	58			
	2015	70	4	74			
St. Manula and Ditkola Daint	2016	72	4	76			
St. Mary's and Pitka's Point	2017	72	5	77			
	2018	-	-	76			
	2015	225	15	240			
Tatal	2016	228	13	241			
IUldi	2017	224	27	251			
	2018	-	-	239			

 Table 26. Permit Ownership and Use in Yukon River District 2 Communities, 2015-2018

Source: CFEC, 2018. Sorted by owner's zip code

Fishermen are on boats and therefore mobile. There is no restriction on which district they can fish in. Therefore, there is movement of boats between districts along the river. People boat downriver to District 2 from Russian Mission and Holy Cross. Fishermen from District 1 and 2 sometimes go into the other district based on fishery opening or processor availability.

During the beginning of the summer season, fishermen are restricted to beach seines or dip nets to conserve chinook salmon which are released alive. Boats often carry three or four dip netters during this season. Chums caught by dip net suffer no net marks and are of very high quality.

# 3.2 Commercial Harvest

Commercial harvests vary by year and species depending on run strength, processor availability, number of openings, and a variety of other factors. Commercial harvests from 2005 through 2017 are presented in Table 27 through Table 30.

	Permit	Holders	Harvest, Number of Fish		Fish	Total		Harvest	Average
Year	District 1	District 2	District 1	District 2	Total	Harvest, Ib	\$/Ib	Value	lb/Fish
2005	370	228	23,965	8,313	32,278	220,080	0.05	11,004	6.8
2006	379	214	21,816	25,543	47,359	477,240	0.05	23,862	10.1
2007	359	220	106,790	69,432	176,222	1,161,658	0.19	220,715	6.6
2008	266	181	67,459	58,139	125,598	817,325	0.40	326,930	6.5
2009	213	166	71,355	86,571	157,926	1,029,712	0.50	514,856	6.5
2010	264	181	102,267	80,948	183,215	1,173,114	0.70	821,180	6.4
2011	230	183	163,439	103,071	266,510	1,734,677	0.75	1,301,008	6.5
2012	242	178	150,800	57,049	207,849	1,306,041	0.75	979,531	6.3
2013	220	174	207,871	171,272	379,143	2,294,271	0.75	1,720,703	6.1
2014	231	183	198,240	229,107	427,347	2,748,110	0.60	1,648,866	6.4
2015	270	177	172,639	181,447	354,086	2,099,847	0.60	1,259,908	5.9
2016	245	198	293,576	228,267	521,843	3,172,483	0.60	1,903,490	6.1
2017	284	114	345,395	47,770	393,165	2,450,588	0.60	1,470,353	6.2
Average	harvest 2013	-2016		202,523					
Average	harvest, valu	e and \$/lb, 20	08–2017		301,668	1,882,617	0.63	1,194,683	6.2

 Table 27. Lower Yukon River Summer Chum Commercial Harvests, 2005–2017

Source: Northern Economics Analysis of data from ADF&G 2012–2017a

#### Table 28. Lower Yukon River Summer Chinook Commercial Harvests, 2005–2017

	Harve	Fish	Total		Harvest	Average			
Year	District 1	District 2	Total	Harvest, Ib	\$/lb	Value	lb/Fish		
2005	16,694	13,413	30,107	569,128	3.43	1,952,109	18.9		
2006	23,748	19,843	43,591	835,119	3.94	3,290,367	19.2		
2007	18,616	13,306	31,922	519,870	3.73	1,939,114	16.3		
2008	2,530	2,111	4,641	70,144	4.64	325,470	15.1		
2009	90	226	316	4,194	5.00	20,970	13.3		
2010	5,744	4,153	9,897	127,846	5.00	639,230	12.9		
2011–2017	2011–2017 No commercial chinook harvest allowed								

Source: Northern Economics Analysis of data from ADF&G 2012–2017a

	Permit H	lolders	Harve	est, Number o	of Fish	Total			
Year	District 1	District 2	District 1	District 2	Total	Harvest, Ib	\$/Ib	Harvest Value	Average lb/Fish
2005	177	0	130,525	0	130,525	989,681	0.32	316,698	7.6
2006	219	71	101,254	39,905	141,159	1,013,185	0.20	202,637	7.2
2007	181	122	38,852	35,826	74,678	534,281	0.27	144,256	7.2
2008	251	177	67,704	41,270	108,974	779,944	0.55	428,969	7.2
2009	165	30	11,911	12,072	23,983	155,397	0.70	108,778	6.5
2010	72	18	545	270	815	5,428	1.00	5,428	6.7
2011	234	169	127,735	100,731	228,466	1,627,575	1.00	1,627,575	7.1
2012	266	201	139,842	129,284	269,126	1,847,400	0.75	1,385,550	6.9
2013	251	197	106,588	106,274	212,862	1,538,937	0.75	1,154,203	7.2
2014	256	199	51,829	59,138	110,967	829,300	0.75	621,975	7.5
2015	266	184	100,562	74,214	174,776	1,270,237	0.60	762,142	7.3
2016	275	197	226,576	213,340	439,916	3,078,774	0.68	2,093,566	7.0
2017	318	144	328,410	134,668	463,078	3,397,053	0.60	2,038,232	7.3
Average ha	rvest 2011–201	17	154,506	116,807		1,941,325			7.2
Average harvest, value and \$/lb, 2008–2017 1,453,004 0.70 1,022,642									

Table 29. Lower Yukon River Fall Chum Commercial Harvests, 2005–2017

Source: Northern Economics Analysis of data from ADF&G 2012–2017b

Table 30. Lower Yukon River Fall Coho Commercial Harvests,	2005–2017
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	Harv	est, Number of I	Fish	Total		Harvest	Average
Year	District 1	District 2	Total	Harvest, lb	\$/lb	Value	lb/Fish
2005	36,533	0	36,533	261,853	0.32	83,793	7.2
2006	39,323	14,482	53,805	251,495	0.20	50,299	4.7
2007	21,720	21,487	43,207	327,869	0.39	127,869	7.6
2008	13,946	19,248	33,194	223,481	0.97	216,777	6.7
2009	5,992	1,577	7,569	52,176	1.00	52,176	6.9
2010	1,027	1,023	2,050	13,690	1.50	20,535	6.7
2011	45,335	24,184	69,519	472,168	1.00	472,168	6.8
2012	39,757	29,063	68,820	427,618	1.25	534,523	6.2
2013	27,304	31,456	58,760	412,725	1.10	453,998	7.0
2014	54,804	48,602	103,406	706,665	1.00	706,665	6.8
2015	66,029	54,860	120,889	880,881	0.70	616,617	7.3
2016	113,669	67,208	180,877	1,143,844	1.00	1,143,844	6.3
2017	95,982	33,277	129,259	814,580	1.00	814,580	6.3
Avg. harvest 2014–2016	78,167	56,890		910,463			
Avg. harvest, value and \$/lb, 2008-2017				514,783	0.98	503,188	

Source: Northern Economics Analysis of data from ADF&G 2012–2017b

Reported statistics do not provide a unique total for permit holder participation. However, a comparison of Table 26 with Table 27 through Table 30, shows that District 2 permit holders must be participating in District 1, as is especially obvious for 2017. Since each boat typically has three or four fishermen, the total participation is over 1,200 individuals, of whom almost all are local area residents.

Overall harvests have varied greatly from year to year. The significant decrease in harvest in 2017 is related to absence of the historic St. Mary's processor Boreal Fisheries. From at least 1977 through 2007, chinook salmon provided half or significantly more of the harvest value (ADF&G 2012–2017a). According to all processors, there are surplus fish available for harvest in addition to what is taken, particularly for summer chum. The given reasons for reduced harvests is lack of lift capacity.

Total price paid to fishermen for all salmon species from 2005 through 2017 is presented in Table 31. The overall value has varied tremendously during the period, with the nadir reached in 2009. That year Kwik'Pak seems to have been virtually the only purchaser in the combined lower river reporting salmon purchases of \$672,941, or 97 percent of reported purchases. All of this money is produced by the private sector and originates where the product is ultimately sold, outside the region and, most likely, outside the State of Alaska.

Year	Total Harvest Value (\$)	Year	Total Harvest Value (\$)
2005	2,363,604	2012	2,899,604
2006	3,567,165	2013	3,328,904
2007	2,431,954	2014	2,977,506
2008	1,298,146	2015	2,638,667
2009	696,780	2016	5,140,900
2010	1,486,373	2017	4,323,165
2011	3,400,751		

Table 31. Total Commercial Salmon Harvest Value, Districts 1 and 2, 2005–2017

Source: Northern Economics Analysis of data from ADF&G 2012, 2016 and 2017

# 3.3 Processors

At this time there are three processors operating on the lower Yukon River. Kwik'pak Fisheries is located in Emmonak and is the largest of the three. Boreal Fisheries and FishPeople both operate out of St. Mary's. Over the past 40 years, there have been more than 30 processors who have operated in the region. Many were there only when chinook harvests were allowed. The lack of sufficient infrastructure, high costs of transportation, and low profit margins inherent in the region have driven others out.

Kwik'pak is wholly owned by the Yukon Delta Fisheries Development Association (YDFDA). YDFDA is a Community Development Quota (CDQ) organization representing the four villages near the mouth of the Yukon as well as Mountain Village and Grayling. (Alstrom and Schultheis 2018) Its mission is to provide employment and sustainable economic and social benefits to the people of its six communities. Kwik'pak is the only processor operating in District 1. It can process salmon into fillet (including vacuum packing) and head and gut product forms. It has limited chilling and freezing capacity and can only hold 600,000 pounds (lb) of product. Company representatives state that Kwik'Pak was operating at capacity during 2017. During production, it employs 225 workers per day and in 2017 employed 603 unique workers. According to company representatives, 97 percent of these workers are from the region. The processor's payroll varies between \$4-5 million each year. When there is a lack of processing capacity in District 2, Kwik'pak has operated a buying station in Mountain Village. This was the case in 2017 when it was the only buyer during the summer fishery. Fish bought there are transported by boat to Emmonak for processing.

That Kwik'Pak is owned by a non-profit CDQ group is of great importance. YDFDA is dedicated to providing fishing opportunities and employment in its member villages. The six CDQ groups were created in 1992 to provide such opportunities to regions along the Bering Sea coast that lacked sufficient infrastructure and that had cost barriers that led to repeated private-sector fishing failures. To that end, all CDQ groups have shown that they will subsidize local fisheries in order to provide local income and jobs.

Boreal Fisheries has operated out of St. Mary's for 45 years although it was not operational in 2017 (Crawford 2018). It rents property from the airport for its processing facility. There it produces primarily head and gut product and has no freezing capacity. It ships all its product on ice. It also has the capacity to fillet the fish to keep shipping costs down. When operating it employs about 60 local residents. Its combined payroll and local purchase expense is about \$3 million per year.

FishPeople is a new processor to the area, operating for the first time in the fall of 2017. (Baratoff 2018) It has produced only round product, which is air shipped iced. During its first year, FishPeople operated off the dock in St. Mary's. It employed six local workers and spent \$160,000 locally on rent, equipment, lodging and food. Plans for 2018 include processing all season, an increased work force to about 25, and greatly increased fish purchases.

### 3.4 Processed Fish Transportation

All three processors stated clearly that the constraint to processing more fish is air lift capacity. There are three air carriers with large cargo load capacity, one of which operates a jet that will cease operations to St. Mary's in the fall of 2018. With the loss of jet service to St. Mary's there will be a reduction in lift capacity to haul fish, which will impact not only St. Mary's but also other communities in the region.

All fish products from all processors are shipped out of the region by air. The Yukon River experiences heavy shoaling in its lower stretches and only has 13' draft. This precludes large barges and vessels from entering the river. None of the barges traveling along the coast are capable of carrying refrigerated vans. The last time barge service with refrigerated vans was available, the cost was \$0.25 per pound more expensive than air shipment to the Seattle area, according to Kwik'Pak.

While a Boeing 737-200 jet with gravel kit (the only one in the State of Alaska) currently serves St. Mary's, the owner has arranged its sale out of the country in September of 2018. This means that the only planes currently or foreseeably available to service the region will be McDonnell Douglas DC6s and Lockheed C130s, all of which are aged.

Fish that are iced, including all fish shipped from St. Mary's, are preferably shipped in large totes, either plastic or fiber. The other option is smaller boxes, which cost more on a per-pound basis and require more labor to fill and load on planes. Smaller aircraft cannot accommodate totes through their doors so increased labor, packaging and turnaround time is involved in shipping on them.

There are two general air shipment options: back haul and charter flight. During the fishing season, all flights near the region that haul freight in are utilized for backhaul of fish. This typically costs \$0.35 plus applicable taxes per pound on the jet and \$0.45/lb on other planes. Charter flights vary in cost but are reported to be about \$1.00 per pound. When the jet backhaul disappears in 2019, all fish will be lifted at a higher average cost. Since all available backhaul space is currently utilized, the only options left will be increased numbers of charter flights.

All processors have stated that their transportation costs will increase dramatically if either the runway is shortened to preclude larger aircraft or when the gravel equipped jet no longer operates. FishPeople calculated that with current lift capacity, including the only remaining larger plane in the state with gravel landing capability, only about 50,000 product lb per day could be hauled from St. Mary's. This requires 40 full days to haul two million pounds of fish. If haul rates are assumed to increase by an average of \$0.35 per pound, the overall increase from St. Mary's would be at least \$700,000 per year to haul the same amount of fish. This does not include the increased cost of labor and packaging.

# 3.5 Fisheries Effects on Communities

The fisheries are the largest employer of labor in each community in the region. In addition, they are private-sector workers in a region where most employment is related to government entities and non-profits. This means that income from employment in the fisheries decreases tax payer payments and subsidies, and vice versa.

Changes that increase the cost of harvesting, processing or transporting fish directly decrease the amount that is paid to fishermen as ex-vessel value. Harvest payment to fishermen is both the beginning and end of the fishery profit chain. Fish harvested in the region compete on the world market. Increased cost at any level through the production/transportation/marketing chain that does not also affect competing salmon products produced elsewhere will not result in a higher selling price for Yukon River salmon. According to all sources, there is little profit being made in the fisheries now. Therefore, anything that increases cost of harvest, processing or transportation directly translates into lower prices to fishermen since it is virtually the only significant variable price.

Reduced income to fishermen leads to a decrease in spending in the region, a lower economic multiplier, and increased need for government expenditures. The high poverty rates combined with the high cost of goods in the region suggests that disposable income is relatively low. Therefore, by extension, any reduction directly and meaningfully reduces private sector income in the region and both reduces demand of goods and services and increases need for government transfers and subsidies to cover basic necessities. Reports from St. Mary's in 2018 suggest anecdotally that there is less spending in local stores and that the decrease is directly related to significantly lower fish purchases there in 2017.

Subsistence activities are negatively impacted by decreased commercial fishing income. Much of the equipment used in commercial fishing such as boats, motors, certain types of fishing gear, and much else is also used for subsistence fishing. There is a large overlap between those families that commercial fish and those that subsistence fish. Income from commercial fishing allows purchase and replacement of equipment used for subsistence fishing. It also provides additional income for the purchase of fuel and other supplies used in subsistence activities.

# 3.6 Scenario Assumptions

The calculations necessary to evaluate different runway treatment scenarios are complicated by changing current conditions, future salmon run projections, and fishermen's performance, among other factors. The following list lays out the specific assumptions going into these scenarios:

- All values are in 2018 dollars and no adjustment is made for inflation or discount rate. Discount rate is not applied since the value of relatively small amounts in a subsistence economy is not easily adjusted to net present value nor would most participants be willing to make such an adjustment.
- Conversion of round chum salmon to dressed:

- All salmon will be shipped as head and gutted product from St. Mary's (Alstrom and Schultheis 2018; Baratoff 2018; Crawford 2018)
- Chum weight conversion: round Headed and gutted (H&G) head off is 74 percent (Crapo et al. 2004)
- Given the abundance of summer chum and the continued presence of processors, it is assumed that processing capacity in District 2, especially in St. Mary's, will increase to satisfy available harvest amounts.
- Airplane capacity for salmon:
  - Shipments of salmon are constrained by packaging. The preferred method from St. Mary's is iced and in totes. Care is taken to cool the fish and drain water before shipment to reduce shipment of ice. Also, stacking of totes and boxes can limit use of full capacity. It is reported that C-130 can contain 88% of its rated capacity in salmon (Crawford 2018). This is the capacity percentage used in this analysis for all aircraft types.
- Future summer salmon harvestable volumes (Carroll 2018 and ADF&G 2012–2017a)
  - ADF&G's management strategy for the summer fishery is to ensure chinook passage with gear restrictions. When sufficient passage has been identified, commercial drift gill net fishing is permitted. Openings in Districts 1 and 2 are then related more to processor availability than other factors.
  - Fishing for chinook is considered to remain restricted and, if allowed, harvestable volume will not impact either scenario (simplifying assumption).
  - The chinook conservation measures will continue consisting of gear restricted to dip nets and beach seines for the beginning of the season.
  - Daily fishing harvest levels in the gear restricted fishery will be set to those in 2017 to reflect fishermen's growing experience.
  - During 2017 there were 1.5 million summer chum available for harvest and only about 0.5 million were taken system wide. This level of harvestable surplus is expected to continue for the foreseeable future.
- Future fall salmon harvestable volumes (Estensen 2018, ADF&G 2012-2017b):
  - ADF&G's management strategy for the fall season is to begin fishing with two openings per week and increase when fish are present in the river and escapement goals are realizable. In recent years this has meant approximately four weeks of two openings per week followed by two weeks in the end of August of four openings per week. Openings do occur into early September but catch rates are not reliable.
  - Coho typically do not appear in the river in appreciable numbers until mid-August. Their largest presence is during the last half of August. Fall chum fishing typically slows appreciably after the season change and then a large return appears in mid-August.
  - o A harvestable surplus of over 1 million chum is expected in the foreseeable future.
  - Coho returns will resemble the average of 2014–2017 for the foreseeable future.
- Maximum harvest
  - o District 1

- Based on all personal communications, harvest of salmon in District 2 in both the summer and fall seasons is constrained at least in part by current lift capacity. District 1 fish are processed in Emmonak as well as some fish from District 2 that are purchased at Mountain Village. In most cases is not possible to separate the salmon purchased in Mountain Village from other salmon purchased in District 2. However, during the summer season in 2017, there was no significant buyer in St. Mary's and therefore virtually all fish harvested in District 2 were sold in Mountain Village, processed by Kwik'Pak in Emmonak, and flown out from there. Kwik'Pak representatives have stated that in 2017 it was operating at capacity (Alstrom and Schultheis 2018). Therefore, for purposes of this analysis, the 2017 summer harvest of 2,451,000 lb in the combined District 1 under the paved scenario, or (2) processed and flown out of Emmonak under the gravel scenario.
- The average weight of a summer chum salmon is 6.2 lb, the average for 2008–2017 (Table 27 and Table 28).
- The daily summer chum harvest for each gear type:
  - Dip nets and beach seines 55,500 lb of chum salmon based on 2017 catch rate (ADF&G 2012-2017a).
  - Drift gill nets 90,100 lb of chum salmon based on average 2013–2017 harvest rates (ADF&G 2012-2017a).
- The total daily harvest for District 1 in the fall season is set at the 2012–2016 average weight (see Table 32 below) of 57,900 lb of fall chum and 25,900 lb of coho per opening.
- o District 2
  - The daily harvest for each gear type:
    - Dip nets and beach seines 61,900 lb of chum salmon based on 2016 catch rate (ADF&G, 2013–2016). There was no buyer in St. Mary's during the 2017 summer season.
    - Drift gill nets 65,300 lb of chum salmon based on average 2013-2016 harvest rates (ADF&G 2012–2017a).
  - Fishing openings during the summer season will not be constrained by fish abundance up to double of the average 2013-2016 harvest level of 202,500 fish or 1,255,500 lb (Table 27 and Table 28). Therefore, the seasonal limit is 2,511,000 lb.
  - The total harvest for District 2 in the fall season is set at the 2012-2016 average weight (Table 32) of 61,800 lb of fall chum and 25,000 lb of coho per opening.
- Fishery start and end dates:
  - o The average summer season start dates for 2013-2016 by gear type (Table 24) will apply to future years.
  - Fall fishing will begin on July 17.

- Fall fishing will be assumed to end on September 3 based on a review of past ending dates.
- Number of openings:
  - The average number of openings from 2013-2016 by district (Table 23) will apply as a guide to the summer fishery.
  - The fall fishery will have 20 openings in each district on the following schedule:
    - 2 days per week for the first four weeks (July 17-August 14)
    - 5 days per week for the next two weeks (August 15-August 29)
    - 2 additional openings.
  - The total number of openings for any district or gear type will be restricted by the start dates and restricted to maximum of 6 days per week. This results in the following maximum number of openings:
    - District 1:
      - Summer restricted gear 17 openings
      - Summer drift gear 15 openings
      - Fall season 20 openings
    - District 2:
      - Summer restricted gear 17 openings
      - Summer drift gear 12 openings
      - Fall season 20 openings
- Gravel scenario specific assumptions:
  - Fishing in District 2 will be limited by air lift capacity out of St. Mary's without regard to equipment or weather constraints. Fish can be held on ice through the day after harvest (Alstrom and Schultheis 2018; Baratoff 2018; Crawford 2018).
- Paved scenario specific assumptions:
  - Fishing in District 2 will occur six days per week during the summer season until July 17 based on occasional processor equipment breakdowns, weather delays for air lift, and fishermen fatigue (assumption based on all personal communications and author's personal knowledge).
- Prices for salmon:
  - Ex-vessel prices for summer chum are set at the average 2008-2017 price of \$0.63/lb round weight (Table 27 and Table 28).
  - Ex-vessel prices for fall chum salmon are set at the average 2008-2017 price of \$0.70 (Table 29 and Table 30). The period begins in 2008 since that is when prices reached current levels.
  - Ex-vessel prices for coho salmon, which are caught in the fall season, are set at the average 2008-2017 price of \$0.98 (Table 29 and Table 30). The period begins in 2008 since that is when prices reached current levels.

		Fall ope	Fall openings		Caught	Average Ib per Opening	
Fishery	Year	District 1	District 2	District 1	District 2	District 1	District 2
	2012	13	11	959,937	887,463	73,841	80,678
	2013	11	11	770,604	768,334	70,055	69,849
Fall Chum	2014	12	8	387,338	441,962	32,278	55,245
	2015	14	14	730,864	539,372	52,205	38,527
	2016	26	23	1,585,703	1,493,070	60,989	64,916
	Average	2012-2016				57,874	61,843
	2012	13	11	247,033	180,585	19,003	16,417
	2013	11	11	191,781	220,944	17,435	20,086
Caba	2014	12	8	374,524	332,141	31,210	41,518
Cono	2015	14	14	481,133	399,748	34,367	28,553
	2016	26	23	718,829	425,015	27,647	18,479
	Average	2012-2016				25,932	25,011

Table 32. Lower Yukon River Fall Chum and Coho Average Harvest Per Day in Pounds, 2012–2016

Source: Northern Economics Analysis

# 3.7 Projected Fishery Harvests

Projected future fishery openings, harvests and value are presented for both District 1 and 2 in Table 33 and Table 34 on the following pages. In each case the data are projected by fishing week beginning from the average beginning date for that district. There are 13 such weekly periods in each scenario.

Weekly harvest rates in District 1 are projected to vary from 83,800 lb during the final week of the fall season to 540,600 lb during the two weeks of drift gill net fishing during the summer season. Adjusting for processing to H&G, the required weekly lift capacity varies from 62,012 lb to 400,044 lb. Throughout the season, a total of 3,971,000 lb of salmon are expected to be harvested with a total lift out of Emmonak of 2,938,540 lb. Based on average ex-vessel prices paid to fishermen, the direct local gross income to fishermen is expected to be \$2,764,090.

The same projections for District 2 show similar volumes and prices. Harvests vary from 86,000 lb to 391,800 lb during the same periods as in District 1. Weekly lift capacity required similarly varies from 64,232 lb to 289,932 lb. Total fishermen gross income is projected at \$2,511,817.

The projected harvests are higher than historical but reflect a number of factors including increased return strength, fishermen's increased experience and harvest rates for using dip nets and beach seines, increased processor interest in the fishery and managers' willingness to make fish available for harvest. Of equal importance is the underlying assumption that airlift is not a constraining factor in 2018. This premise is tested in the next section.

		Week Beginning Date													
		June 11	June 18	June 25	July 2	July 9	July 16	July 23	July 30	August 6	August 13	August 20	August 27	September 3	Total
Gear/Season	Total Openings						Ор	enings per Wee	k						
DN/BS	17	6	6	5											
GN	15			2	6	6	1								
Fall	20						1	2	2	2	4	5	3	1	
Gear/Season	lb per Opening						Catch	Weight per Wee	k (lb)						
DN/BS	55,500	333,000	333,000	277,500	0	0	0	0	0	0	0	0	0	0	943,500
GN	90,100	0	0	180,200	540,600	540,600	90,100	0	0	0	0	0	0	0	1,351,500
Fall chum	57,900	0	0	0	0	0	57,900	115,800	115,800	115,800	231,600	289,500	173,700	57,900	1,158,000
Coho	25,900	0	0	0	0	0	25,900	51,800	51,800	51,800	103,600	129,500	77,700	25,900	518,000
Total weekly lb		333,000	333,000	457,700	540,600	540,600	173,900	167,600	167,600	167,600	335,200	419,000	251,400	83,800	3,971,000
Required Lift Capa	acity	246,420	246,420	338,698	400,044	400,044	128,686	124,024	124,024	124,024	248,048	310,060	186,036	62,012	2,938,540
Species	\$ per Ib						Catch	Value per Weel	k (\$)						
Summer chum	0.63	209,790.00	209,790.00	288,351.00	340,578.00	340,578.00	56,763.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,445,850.00
Fall chum	0.70	0.00	0.00	0.00	0.00	0.00	40,530.00	81,060.00	81,060.00	81,060.00	162,120.00	202,650.00	121,590.00	40,530.00	810,600.00
Coho	0.98	0.00	0.00	0.00	0.00	0.00	25,382.00	50,764.00	50,764.00	50,764.00	101,528.00	126,910.00	76,146.00	25,382.00	507,640.00
Total weekly \$		209,790.00	209,790.00	288,351.00	340,578.00	340,578.00	122,675.00	131,824.00	131,824.00	131,824.00	263,648.00	329,560.00	197,736.00	65,912.00	2,764,090.00
Average \$/Lb		0.63	0.63	0.63	0.63	0.63	0.71	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.70

Table 33. Projected Lower Yukon River District 1 Salmon Openings, Harvest and Ex-Vessel Value

							Wee	ek Beginning Da	ite						
		June 11	June 18	June 25	July 2	July 9	July 16	July 23	July 30	August 6	August 13	August 20	August 27	September 3	Total
Gear/Season	Total Openings						Ор	enings per Wee	k						
DN/BS	17	4	6	6	1										
GN	12				5	6	1								
Fall	20						1	2	2	2	4	5	3	1	
Gear/Season	lb per Opening						Catch	Weight per Wee	k (lb)						
DN/BS	61,900	247,600	371,400	371,400	61,900	0	0	0	0	0	0	0	0	0	1,052,300
GN	65,300	0	0	0	326,500	391,800	65,300	0	0	0	0	0	0	0	783,600
Fall chum	61,800	0	0	0	0	0	61,800	123,600	123,600	123,600	247,200	309,000	185,400	61,800	1,236,000
Coho	25,000	0	0	0	0	0	25,000	50,000	50,000	50,000	100,000	125,000	75,000	25,000	500,000
Total weekly lb		247,600	371,400	371,400	388,400	391,800	152,100	173,600	173,600	173,600	347,200	434,000	260,400	86,800	3,571,900
Required Lift Capa	acity	183,224	274,836	274,836	287,416	289,932	112,554	128,464	128,464	128,464	256,928	321,160	192,696	64,232	2,643,206
Species	\$ per Ib						Catch	Value per Weel	k (\$)						
Summer chum	0.63	155,988.00	233,982.00	233,982.00	244,692.00	246,834.00	41,139.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,156,617.00
Fall chum	0.70	0.00	0.00	0.00	0.00	0.00	43,260.00	86,520.00	86,520.00	86,520.00	173,040.00	216,300.00	129,780.00	43,260.00	865,200.00
Coho	0.98	0.00	0.00	0.00	0.00	0.00	24,500.00	49,000.00	49,000.00	49,000.00	98,000.00	122,500.00	73,500.00	24,500.00	490,000.00
Total weekly \$		155,988.00	233,982.00	233,982.00	244,692.00	246,834.00	108,899.00	135,520.00	135,520.00	135,520.00	271,040.00	338,800.00	203,280.00	67,760.00	2,511,817.00
Average \$/Lb		0.63	0.63	0.63	0.63	0.63	0.72	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.70

### Table 34. Projected Lower Yukon River District 2 Salmon Openings, Harvest and Ex-Vessel Value

# 3.8 Fishery Related Air Cargo Capacity

Current and future air cargo capacity is presented in Table 35. The 2018 scenario represents the current situation, which consists of Northern Air Cargo (NAC) and Everts Air Cargo providing primary lift capacity through backhaul. In addition, NAC's 737-200 with gravel kit is operating and available for charter this year. Continuing this gravel strip scenario for 2019 and the future necessitates removing NAC's, and Alaska's, only gravel kit jet as it is scheduled to be sold outside Alaska this fall. It is suspected that Everts Air Cargo will increase its scheduled and backhaul service to St. Mary's, but it is aircraft limited and may not be able to provide the additional services projected. In addition, and with greater consequence, Lynden Air Cargo's C-130s are projected to be available for charter to St. Mary's. This is not currently the case and therefore this assumption is likely overly optimistic. All results of the future 6,000 ft. gravel runway should therefore be viewed with some pessimism. The paved scenario allows a large range of aircraft to serve St. Mary's. Those shown are from current carrier's fleets.

#### Table 35. Projected St. Mary's Weekly Scheduled and Available Charter Air Service by Scenario

1		Weekly sc	heduled flights	(backhaul)	Cł	narter capacity								
Carrier	Aircraft	# flights	Lift capacity, lb	Cost, \$ per lb	Flights/Week Possible	Lift capacity, lb	Cost, \$ per lb							
		2018 Wit	th 6,000' Gravel	Runway										
NAC	Boeing 737-200	7 <sup>1</sup>	25,600	0.25 <sup>2</sup>	14 <sup>3</sup>	25,600	0.81							
Everts	McDonnell Douglas DC-6	3-4 4	24,500	0.33 5		24,500	0.75							
Lynden	Lockheed C-130	0	55,000	0.33	6	55,000	0.79							
Gravel Runway at 6,000'; 2019-2023 and Beyond 2023														
Everts	McDonnell Douglas DC-6	4-5 <sup>7</sup>	24,500	0.33 5	up to 2 <sup>8</sup>	24,500	0.75							
Lynden	Lockheed C-130	0	55,000	0.33	up to 7 <sup>8</sup>	55,000	0.79							
		Paved R	unway 2023 and	d Beyond										
NAC	Boeing 737-300	<b>7</b> <sup>1</sup>	32,500	0.25 <sup>2</sup>	14	32,500	0.81							
Everts	McDonnell Douglas DC-9	3-4 4 9	32,000	0.33 5	up to 4	32,000	0.75							
Everts	McDonnell Douglas MD-82SF	-	43,000	0.33 5	up to 7	43,000	0.75							
Alaska	Boeing 737-700 <sup>10</sup>	3	42,000	<0.51 <sup>11</sup>	up to 7	42,000	0.51							

Source: Northern Economics Analysis

Notes:

- <sup>1</sup> NAC increases its schedule to once a day during commercial fishing.
- <sup>2</sup> Cost from station manager in St. Mary's.
- <sup>3</sup> NAC can add up to 2 additional flights per day.
- <sup>4</sup> Will be adjusted to 3.5 flights per week for analysis.
- <sup>5</sup> Cost provided on Everts website.
- <sup>6</sup> All spare capacity presumed to go to Emmonak.
- <sup>7</sup> Will be adjusted to 4.5 flights per week for analysis.
- <sup>8</sup> Flights are in direct competition with services for Kwik'Pak in Emmonak there may not be this much additional capacity.
- <sup>9</sup> Everts is presumed to shift their St. Mary's operations to jets since it has higher capacity and is less expensive to operate.
- <sup>10</sup> Alaska Air Cargo has 7 such planes in Alaska and has indicated desire to add to St. Mary's for schedule or backhaul if runway paved.
- <sup>11</sup> Backhaul rates are not available but are projected to be competitive with other carriers.

All haul costs are taken from airline websites or staff. However, it is not clear that they all include fuel surcharges. Likewise, in some cases the charter rates do not fully back calculate to hourly or trip rental rates. It is suspected that all cost per pound prices are somewhat lower than shippers may face. However, there is no bias suspected between scenarios so that comparison of the scenarios is deemed legitimate. However, any net loss is likely underestimated.

## 3.9 Scenario Evaluations

Table 36 presents a detailed summary of the scenario evaluations, as discussed below.

#### 2018 Scenario

The projection for 2018 shows that all salmon can be air shipped via air cargo. The average cost of air shipment is \$0.45 per lb for a total cost of \$1,189,441.

#### Gravel Scenario

The 2019–2023 gravel scenario becomes the long term, and worst-case scenario, unless the airstrip is paved. Under this scenario, all salmon are shipped at an average cost of \$0.64 per lb and a total cost of \$1,694,970. This shipping cost is \$505,529 more than the cost for 2018. This increased shipping cost would have to be borne by either processors or fishermen.

There are questions about the 2019-2023, and possibly beyond then, gravel scenario. No additional aircraft are projected to be available in 2019–2023 that are not in operation and fully utilized for 2018. The 737-200 will cease operations after 2018, and it is assumed that some air carrier will step in to fill this void. However, it is not certain that there will be the additional necessary charter flights available each week during fishing season. Therefore, the results from this gravel scenario should be viewed with skepticism.

#### Paved Scenario

Under the 2023 paved airstrip scenario, all salmon is easily airlifted out at an average price of \$0.27 per lb for a total cost of \$705,146. Compared to the 2019–2023 gravel scenario, this is a cost savings of \$989,824. In a forward-looking analysis, this savings would occur each year.

#### Worst-Case Scenario

The consequence of increased costs to air shipping from St. Mary's could lead to the departure of any major processor. This would be a worst-case scenario. If the airstrip is not scheduled to be paved, this worst-case scenario could occur before 2023. Both processors currently operating there have stated that they could not accommodate significant increases in transportation costs. The processors in District 2 have always found it necessary to match the price paid to fishermen in District 1. The projected cost increase for 2019–2023 gravel amounts to an average of \$0.19 per lb throughout the season. If prices to fishermen were not lowered, the entire cost would be borne by processors. It is not known if this meets the threshold for significant cost increase but if it does, then deliveries to St. Mary's would cease, Kwik'Pak would continue to operate out of Mountain Village and virtually all fish from Districts 1 and 2 would be processed and flown out of Emmonak. Comparing the District 1 scenario (Table 33) with the Kwik'Pak limitation of 2,451,000 lb per season, shows that Kwik'Pak would only have the capacity to purchase 156,000 lb of salmon with an ex-vessel value of \$98,280 during the summer season in District 2 and 775,000 lb of salmon with an ex-vessel value of \$609,568 during the fall season. This would amount to a decrease in full harvest value (Table 34) of \$1,803,969 per year to District 2 fishermen. There would be additional losses to processing workers and lost processor spending in St. Mary's. Based on processor interviews, this would amount to about \$3.16 million per year.

					-	Week Beginning Date																									
						June	911		June 18		June 25		July 2		July 9	J	uly 16		July 23		July 30	A	August 6	Αι	ugust 13	Αι	ugust 20	Aug	just 27	Septe	mber 3
		Number	Total lift lbs/														Requ	irea	d Lift Capaci <sup>.</sup>	ty (Ib	<b>)</b> )										
Aircraft	Operation	of Flights	Total cost	Co	ost/lb	18	3,224		274,836		274,836		287,416		289,932		112,554		128,464		128,464		128,464		256,928		321,160		192,696		64,232
													2018 W	ith 6	,000' Grave	el Rur	nway														
737-200	Scheduled	7	157,696	\$	0.25	\$ 39,4	24.00	\$	39,424.00	\$ 3	39,424.00	\$	39,424.00	\$ 3	39,424.00	\$ 39	9,424.00	\$	39,424.00	\$ 3	39,424.00	\$	39,424.00	\$ 3	39,424.00	\$3	39,424.00	\$ 39	9,424.00	\$ 39	424.00
DC-6	Scheduled	3.5	75,460	\$	0.75	\$ 19,1	46.00	\$	56,595.00	\$ !	56,595.00	\$	56,595.00	\$ !	56,595.00	\$	-	\$	-	\$	-	\$	-	\$ 5	56,595.00	\$ 5	56,595.00	\$ 26	6,250.00	\$	-
737-200	Charter	1	22,528	\$	0.81	\$	-	\$	18,247.68	\$	18,247.68	\$	18,247.68	\$	18,247.68	\$	-	\$	-	\$	-	\$	-	<b>\$</b> 1	18,247.68	\$1	18,247.68	\$	-	\$	-
737-200	Charter	1	22,528	\$	0.81	\$	-	\$	18,247.68	\$	18,247.68	\$	18,247.68	\$	18,247.68	\$	-	\$	-	\$	-	\$	-	<b>\$</b> 1	18,247.68	\$1	18,247.68	\$	-	\$	-
737-200	Charter	1	22,528	\$	0.81	\$	-	\$	-	\$	-	\$	18,247.68	\$	18,247.68	\$	-	\$	-	\$	-	\$	-	\$	-	\$1	18,247.68	\$	-	\$	-
737-200	Charter	1	22,528	\$	0.81	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ 1	18,247.68	\$	-	\$	-
737-200	Charter	1	22,528	\$	0.81	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Total We	ekly Lift / (De	ficit)	345,796				-		-		-		-		-		-		-		-		-		-		-		-		-
Total We	ekly Cargo C	ost	\$1,189,441			\$5	8,570	\$	132,514	\$	132,514	\$	150,762	\$	150,762	\$	39,424	\$	39,424	\$	39,424	\$	39,424	\$	132,514	\$	169,010	\$	65,674	\$	39,424
Average	Shipping Cos	st per Salm	ion Lb	\$	0.45	\$	0.32	\$	0.48	\$	0.48	\$	0.52	\$	0.52	\$	0.35	\$	0.31	\$	0.31	\$	0.31	\$	0.52	\$	0.53	\$	0.34	\$	0.61
											Gra	vel	Runway at	6, <b>00</b>	0'; 2019-20	23 ar	nd Beyond	120	23												
DC-6	Scheduled	4.5	97,020	\$	0.33	\$ 32,0	16.60	\$	32,016.60	\$ 3	32,016.60	\$	32,016.60	\$ 3	32,016.60	\$ 32	2,016.60	\$	32,016.60	\$ 3	32,016.60	\$	32,016.60	\$ 3	32,016.60	\$3	32,016.60	\$ 32	2,016.60	\$ 21	196.56
DC-6	Charter	1	21,560	\$	0.75	\$ 16,1	70.00	\$	16,170.00	\$	16,170.00	\$	16,170.00	\$	16,170.00	\$ 16	6,170.00	\$	16,170.00	\$	16,170.00	\$	16,170.00	\$ 1	16,170.00	\$1	16,170.00	\$ 16	6,170.00	\$	-
DC-6	Charter	1	21,560	\$	0.75	\$ 16,1	70.00	\$	16,170.00	\$	16,170.00	\$	16,170.00	\$	16,170.00	\$	-	\$	16,170.00	\$	16,170.00	\$	16,170.00	<b>\$</b> 1	16,170.00	\$1	16,170.00	\$ 16	6,170.00	\$	-
C-130	Charter	1	48,400	\$	0.79	\$ 38,2	36.00	\$	38,236.00	\$ 3	38,236.00	\$	38,236.00	\$ 3	38,236.00	\$	-	\$	-	\$	-	\$	-	\$ 3	38,236.00	\$ 3	38,236.00	\$ 38	3,236.00	\$	-
C-130	Charter	1	48,400	\$	0.79	\$	-	\$	38,236.00	\$ 3	38,236.00	\$	38,236.00	\$ 3	38,236.00	\$	-	\$	-	\$	-	\$	-	\$ 3	38,236.00	\$ 3	38,236.00	\$ 38	3,236.00	\$	-
C-130	Charter	1	48,400	\$	0.79	\$	-	\$	38,236.00	\$ 3	38,236.00	\$	38,236.00	\$ 3	38,236.00	\$	-	\$	-	\$	-	\$	-	\$ 3	38,236.00	\$ 3	38,236.00	\$	-	\$	-
C-130	Charter	1	48,400	\$	0.79	\$	-	\$	-	\$	-	\$	38,236.00	\$ 3	38,236.00	\$	-	\$	-	\$	-	\$	-	\$	-	\$ 3	38,236.00	\$	-	\$	-
C-130	Charter	1	48,400	\$	0.79	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Total We	ekly Lift / (De	ficit)	382,140				-		-		-		-		-		-		-		-		-		-		-		-		-
Total We	ekly Cargo C	ost	\$1,694,970			\$102,5	92.60	\$1	79,064.60	\$1	79,064.60	\$2	217,300.60	\$2 <sup>-</sup>	17,300.60	\$ 48	8,186.60	\$	64,356.60	\$ (	64,356.60	\$	64,356.60	\$17	79,064.60	\$21	17,300.60	\$140	,828.60	\$ 21	196.56
Average	Shipping Cos	st per Salm	ion Lb	\$	0.64	\$	0.56	\$	0.65	\$	0.65	\$	0.76	\$	0.75	\$	0.43	\$	0.50	\$	0.50	\$	0.50	\$	0.70	\$	0.68	\$	0.73	\$	0.33
													Paved F	Runw	/ay 2023 an	nd Be	yond														
737-300	Scheduled	7	200,200	\$	0.25	\$ 45,8	06.00	\$	50,050.00	\$ \$	50,050.00	\$	50,050.00	\$ !	50,050.00	\$ 28	8,138.50	\$	32,116.00	\$ 3	32,116.00	\$	32,116.00	\$ 5	50,050.00	\$ 5	50,050.00	\$ 48	3,174.00	\$ 16	058.00
DC-9	Scheduled	3.5	98,560	\$	0.33	\$	-	\$	24,629.88	\$ 2	24,629.88	\$	28,781.28	\$ 2	29,611.56	\$	-	\$	-	\$	-	\$	-	\$ 1	18,720.24	\$ 3	32,524.80	\$	-	\$	-
737-700	Scheduled	3	110,880	\$	0.51	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ 1	11,424.00	\$	-	\$	-
737-700	Charter	7	258,720	\$	0.51	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
DC-9	Charter	4	112,640	\$	0.75	\$ •	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
MD-82SF	Charter	1	264,880	\$	0.75	\$ •	-	<b>⇒</b>	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$		\$	-
Total We	eklyLift/(De	2 ficit)	57,200	4	0.81	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Total We	ekly Cargo C	ost	\$ 705,146			\$ 45.8	06.00	\$	74,679.88	\$	74,679.88	\$	78,831.28	\$	79,661.56	\$ 28	8,138.50	\$	32,116.00	\$ :	32,116.00	\$	32,116.00	\$ 6	68,770.24	\$ 9	93,998.80	\$ 48	3,174.00	\$ 16	058.00
Average	Shipping Cos	st per Salm	ion Lb	\$	0.27	\$	0.25	\$	0.27	\$	0.27	\$	0.27	\$	0.27	\$	0.25	\$	0.25	\$	0.25	\$	0.25	\$	0.27	\$	0.29	\$	0.25	\$	0.25
-	-																														

### Table 36. Projected Lower Yukon River District 2 Weekly Salmon Cargo Volumes, Fleet Composition, and Freight Costs Under Three Scenarios

## 3.10 Summary

The fisheries of the lower Yukon River are the major private sector employer in the region. They employ hundreds of families and provide much needed income to support subsistence activities and purchases at the local stores and beyond. Historically there have been two processors, although a third is now entering the area. This has been the norm throughout recent history depending on the strengths of the runs and world markets. All processing participants agree that the overall harvest is currently limited by lift capacity. The result is millions of dollars of foregone private sector income to the region. This problem has not been solved by charters, since the gravel runway limits the carrying capacity of any individual plane. The only relief that can be given is to pave the runway to allow a much greater number of planes to utilize it, each with larger lift capacity, at lower cost, than is currently available.

A comparison of the future scenarios are as follows:

Gravel Scenario	\$0.5 million increase cost per year
Paved Scenario	\$1.0 million decreased cost per year
Worse-case Scenario	\$5.0 million lost regional income per year

# 4 **Preliminary Discussion of Impacts of Changes in Cargo Costs**

This section presents a preliminary discussion of the potential effects of changes in the St. Mary's Airport configuration and types of aircraft on cargo activity and costs. More information is needed about specific changes to the airport configuration or fleet to provide a more accurate assessment of impacts. Runway length and surface choices will have a major role in determining the nature and scale of these effects, as will individual businesses' and residents' approaches to managing the potential impacts of the changes. Once alternatives have been developed, further interviews and analysis will help to identify the impact of the changes.

### 4.1 Importance of Seafood Exports on Overall Freight Volumes

As documented in this report, commercial fishing and seafood processing is an important economic engine in St. Mary's and other communities in the study area. It is also an important driver of aviation activity. Table 37 shows freight volumes for St. Mary's Airport. Seafood products shipped by NAC and Lynden, account for 18 percent of freight passing through the airport over the last 16 years. In years of high production, seafood products accounted for as much as 30 percent of total freight.

			Freight Vo	olume (lb)		
-	Α	II Freight Type	s		Non-	Seafood
Year	Arriving	Departing	Total	Seafood Products Only	Seafood Products Only	Products as Percentage of Total
2002	879,608	978,857	1,858,465	43,681	1,814,784	2.4
2003	1,733,280	1,246,327	2,979,607	639,247	2,340,360	21.5
2004	1,239,959	1,205,147	2,445,106	564,251	1,880,855	23.1
2005	967,369	838,420	1,805,789	313,743	1,492,046	17.4
2006	1,238,331	1,606,560	2,844,891	773,324	2,071,567	27.2
2007	1,735,897	1,855,476	3,591,373	682,151	2,909,222	19.0
2008	1,731,680	974,645	2,706,325	224,997	2,481,328	8.3
2009	1,457,959	823,655	2,281,614	239,818	2,041,796	10.5
2010	1,825,727	1,048,069	2,873,796	322,062	2,551,734	11.2
2011	1,629,153	1,706,046	3,335,199	688,578	2,646,621	20.6
2012	1,272,736	1,428,960	2,701,696	578,183	2,123,513	21.4
2013	1,207,023	1,446,960	2,653,983	797,384	1,856,599	30.0
2014	1,512,352	1,221,446	2,733,798	295,218	2,438,580	10.8
2015	1,424,188	1,155,885	2,580,073	477,698	2,102,375	18.5
2016	1,211,757	1,594,790	2,806,547	574,212	2,232,335	20.5
2017	1,157,366	1,180,661	2,338,027	575,576	1,762,451	24.6
Average, 2002-2017	1,389,024	1,269,494	2,658,518	486,883	2,171,635	17.9
Per Capita, 2002-2017	2,567	2,344	4,911	898	4,013	17.9

#### Table 37. Freight Volumes at St. Mary's Airport, 2002-2017

Source: Bureau of Transportation Statistics (2018) and Northern Economics, Inc. analysis

# 4.2 Costs of Living and Doing Business

Changes in St. Mary's airport configuration or types of aircraft could impact the cost of living through changes in cargo shipping costs. Sources of changes in cost include not only the direct amount charged per pound by the air carrier, but also several indirect factors related to how cargo is moved to and from St. Mary's and the region.

Cargo costs are driven by myriad factors. Larger planes can accommodate larger cargo dimensions and heavier loads than smaller aircraft, but they require longer runways. Gravel runways also present challenges, especially for jets. Larger planes can often accommodate shorter runways, but doing so could require a load reduction, which would increase the cost per pound of cargo.

Smaller aircraft may also have dimensional and weight limits that are below standard loads used by an industry, such as boxes used for shipping fish on ice or pallets shipped with inbound cargo for stores and other organizations. Using modified packaging could affect efficiency of handling equipment through the logistics chain or the ratio of product value to packaging cost, potentially affecting the delivered cost of product. Respondents to the business survey indicated the threats their businesses would face as a result of capacity limitations of smaller aircraft.

As presented above in Table 37, seafood products have historically constituted a substantial share of freight shipments from St. Mary's. A change to how those products are shipped could impact the operations. If the amount of backhaul freight on scheduled flights were to decrease, it could impose a financial burden on air carriers, who in turn may need to adjust their service schedule or change their pricing to account for the loss. Likewise, respondents to the business survey highlighted the critical nature of daily service into the community and availability of substantially less-expensive backhaul options for the viability of their business.

For incoming freight, breaking incoming cargo loads down from standard pallets could lead to increased losses due to damage or spoilage. If cargo shipments are delayed due to reduced capacity on each flight, this could impact product freshness and would increase the cost of holding inventory (i.e., the amount of time money is tied up in a product before the product is sold and the money can be used for the next product). Very large, heavy, or bulky items could be delayed or be available only during summer months via barge service. This would have an impact on local businesses and organizations; many respondents to the business survey indicated the importance of receiving large items year-round. Stockpiling anticipated needs would be another way in which the cost of holding inventory would come in to play.

The likelihood, extent, and cost of living impact of these potential changes is dependent on the actual changes to the types of aircraft serving St. Mary's.

# 4.3 Employment and Population

A loss of income coming about either directly (from changes to employment) or indirectly (through an increase in the cost of living) could have substantial effects on the population of St. Mary's.

As presented in the socioeconomic profile (see Table 22), there is a strong correlation of employment and wages with population in the Kusilvak Census Area. The linear regression conducted using 2008–2017 data suggests that a change in total wages corresponds to a change in population of 72 people per \$1 million of wages, and a change in private wages corresponds to a change of 130 people per \$1 million.

The information needed to create defensible scenarios outlining the potential effects of airport changes to the employment and population in St. Mary's has yet to be developed. What is known is that dollar

impacts to residents and businesses—changes to the cost of living, reduced fisheries harvest payments, and reduced processing income, all potential effects of changes to St. Mary's airport or aircraft—could reasonably be expected to impact population positively or negatively. Section 3 outlines potential impacts to the commercial fishing and processing industries. Broader impacts—to other businesses, to St. Mary's as a community, and to other residents in the region—will be determined once alternatives have been developed.

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Appendix F: Detailed Aviation Activity Tables

Freight Arriving to St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 0	Grand Total
Alaska Central Express		5	145	5,933				1,309							2,312		9,704
BEECH 1900 A/B/C/D		5	145	5,933				1,309							2,312		9,704
Arctic Circle Air Service	3,025	24,327	6,589	30,301	59,972	90,978	6,464	2,101									223,757
BEECH KING AIR		1,584	1,489	8,934	28,723	70,395	5,038										116,163
CESSNA 206/207/209	2,980	3,625	300	-	-	793											7,698
CESSNA 208		9,151	-	1,206	-	3,772											14,129
CESSNA C-402/402A	45	2,007	-	48	914	978	-										3,992
SHORT HARLAND SC-7	-	7,938	559	6,270	4,294	15,040											34,101
SHORTS 330		22	4,241	13,843	26,041	-	1,426	2,101									47,674
Arctic Transportation	32,615	46,275	55,161	25,312	43,690	37,863	69,838	44,935	46,976	56,596	49,818	33,820	64,654	42,027	75,693	19,570	744,843
CASA 212	28,252	39,886	50,602	21,606	35,464	34,308	64,485	33,534	31,528	38,480	31,088	31,991	61,137	33,682	65,606	15,833	617,482
CESSNA 206/207/209	4,363	6,389	4,559	3,706	8,226	3,555	5,353	7,817	8,824	8,512	5,808	1,829	3,517	5,506	7,733	2,009	87,706
CESSNA 208														2,839	2,354	1,728	6,921
CESSNA C-402/402A	-	-															-
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								3,584	6,624	9,604	12,922	-					32,734
Bering Air Inc.	300	3,114	800	-	4,995	-	-	10,100	2,600	940	-	200	1,077	1,841	-	1,167	27,134
BEECH 1900 A/B/C/D			-	-	1,244	-	-	-		-	-		-	-		-	1,244
BEECH 200 KINGAIR	-	-	-	-	-	-			-	940	-		1,077	-	-	200	2,217
CASA 212				-		-		10,100	2,600								12,700
CESSNA 208	-	1,000	-	-	663			-	-	-	-	-	-	-			1,663
CESSNA C208B															-	-	-
PIPER PA-31/T-1020	300	2,114	800	-	3,088	-	-	-	-	-	-	200	-	1,841	-	967	9,310
Bidzy Ta Hot Aana, Inc. d/b/a Tanana /	904	75	-	-	-	-	-	-		-	-			,	-	-	979
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	904	75	-	-		-	-	-		-					-		979
PIPER PA-34/39	-				-												-
Cape Smythe Air Service			-														-
PIPER PA-31/T-1020			-														-
Era Aviation								1,481	13,332	38,404	29,941	44,898	89,133	104,913	120,213	136,195	578,510
BEECH 1900 A/B/C/D								1,279	3,867	2,185	2,159	1,961	4,835	3,779	1,088		21,153
DHC8-100 DASH 8								202	9,465	36,219	27,782	42,937	84,298	101,134	119,125	136,195	557,357
Frontier Flying Service	-	107	28,289	63,592	92,798	140,747	157,660	41,184	1,829	-	7,800	-	1,625	-	-	-	535,631
BEECH 1900 A/B/C/D	-	-	27,418	63,253	92,793	140,624	157,507	41,184	1,829	-							524,608
PIPER PA-31/T-1020		107	871	339	5	123	153										1,598
SHORTS 330											7,800		1,625		-	-	9,425
Grant Aviation	10,511	2,137	1,187	2,231	2,698	1,513	356	-	1,500	-	-	1	1,104	92	-	-	23,330
BEECH 200 KINGAIR	2	30			12						-	-					44
BEECHCRAFT 65-A90		-	-														-
CESSNA 172 SKYHAWK	-	-	-	-		-											-
CESSNA 206/207/209	8,378	1,842	1,120	2,115	2,178	1,444	305	-	-	-	-	-	-	-	-	-	17,382
CESSNA 208	2,056	-	-	-	-	2	46	-	1,500	-		-	974	1	-	-	4,579
GIPPS AERO GA8 AIR									·					-	-	-	-
PIPER PA-31/T-1020	75	265	67	116	508	67	5	-	-	-	-	1	130	91			1,325

### Project Number Z605630000 AIP Number 3-02-0017-XXX-201X

Freight Arriving to St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Hageland Aviation Service	178,637	219,635	137,012	54,988	92,324	72,251	59,759	148,327	180,384	232,514	210,767	176,126	308,720	134,701	89,672	101,600	2,397,417
BEECH 1900 A/B/C/D	/4,85/	124,220	/6,/58	5,123	1,/13	812	10,344	83,240	112,756	141,134	120,527	111,867	149,938	85,262	51,125	60,368	1,210,044
CESSNA 1/2 SKYHAWK	-	-	-	-													-
CESSNA 180	-	-	-	-	-	-	-	-	-	-							-
CESSNA 206/207/209	25,521	22,196	16,715	15,774	25,394	23,446	16,030	16,824	16,899	26,107	21,367	7,992	29,469	5,924	4,062	9,009	282,729
CESSNA 208	38,495	53,326	36,424	33,568	64,787	47,469	33,371	46,869	50,454	64,957	67,692	56,063	129,048	42,955	34,485	32,223	832,186
CESSNA 406	23,202	17,320	7,115	523	430	524	14	40	25	316	1,067	57	255	-			50,888
CESSNA C-402/402A	16,562	2,573															19,135
PIPER PA-31/T-1020								1,354	250	-	114	147	10	560		-	2,435
Iliamna Air Taxi					-							-		-			-
PILATUS PC-12												-		-			-
PIPER PA-31/T-1020					-												-
Inland Aviation Services	-	-	-	-	-	-		-	1,000	-							1,000
CESSNA 172 SKYHAWK		-	-	-	-												-
CESSNA 206/207/209	-	-	-	-	-	-		-	1,000	-							1,000
Larrys Flying Service	1,008	-															1,008
CESSNA 172 SKYHAWK	-	-															-
CESSNA 206/207/209	-	-															-
PIPER PA-31/T-1020	-																-
PIPER PA-32	1,008	-															1,008
Lynden Air Cargo Airlines	36,355	66,354	-	19	26,513	61,598	312,622		59,311	14,656	17,144	50,817	39,273	2,146	-	-	686,808
LOCKHEED L100-30	36,355	66,354	-	19	26,513	61,598	312,622		59,311	14,656	17,144	50,817	39,273	2,146	-	-	686,808
Northern Air Cargo Inc.	292,590	1,071,868	658,301	496,201	611,667	940,056	635,143	774,902	702,107	728,903	534,468	455,936	501,889	500,490	364,768	355,952	9,625,241
ATR-42			184,163	215,088	12,272												411,523
BOEING 727-100C/QC	201,934	646,141	176,070	135,333	519,267	44,948											1,723,693
BOEING 737-100/200		ŗ	,		ŗ	ŗ	340,805	774,902	702,107	728,903	534,468	455,936	501,889	500,490	364,768	355,952	5,260,220
DOUGLAS DC-6	90.656	425.727	298.068	145.780	80.128	895.108	294.338	,	,	,	,	,	,	,	,	,	2.229.805
Peninsula Airways Inc.	1.125	-	,	,	,	,	,										1.125
CESSNA 208	-																-
SAAB-FAIRCHD 340/B	-	-															-
SWEARINGEN METRO 3	1,125																1,125
Tatonduk Outfitters Limited d/b/a Eve	319,315	292,433	352.475	287,812	303,674	389 416	489,838	433 320	815,038	556.376	422,798	445,225	504.877	637,978	559,099	542,882	7.352.556
CESSNA 208		232,400	002,470	750	000,074	003)410	405,000	400,020	010,000	556,576		110,220	564,677	007,570	734	542,002	1 484
CURTISS CA6 SERIES				750						22 879	7 /68				734		30 3/17
	210 215	202 133	352 /175	287 062	303 674	388 907	180 838	133 320	811 257	530 766	101 596	115 225	504 877	637 978	558 365	530 305	7 200 202
	519,515	292,433	552,475	207,002	303,074	500,507	485,858	433,320	2 701	2 7 2 1	404,330	443,223	504,877	037,978	558,505	555,505	17 755
						509			3,781	2,731	10,734		_			2 5 7 7	2 577
Village Aviation	2 2 2 2	6 520											-			5,577	5,577 0 752
	1 200	4 1 2 5	-														5,755
	1,300	4,125															5,425
CESSINA 206/207/209	1,923	2,405	-														4,328
			-				-	-	-	-							-
BEECH 1900 A/B/C/D							-	-		-							-
PIPER PA-31/T-1020			-						-								-
Wright Air Service		420	-	980		1,475	-	300	1,650	200	-		-			-	5,025
BEECH 35/36							-										-
CESSNA 206/207/209										200							200
CESSNA 208		-	-	500		1,100			1,650		-					-	3,250
PIPER PA-31/T-1020		420	-	480		375		300		-	-		-				1,575

### Project Number Z605630000 AIP Number 3-02-0017-XXX-201X

Freight Arriving to St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Yute Air Aka Flight Alaska		-	-	-	-	-	-	-	-	564	-	-	-	-	-		564
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			-	-	-	-	-	-	-	564	-	-	-	-	-		564
PIPER PA-31/T-1020		-															-
Grand Total	879,608	1,733,280	1,239,959	967,369	1,238,331	1,735,897	1,731,680	1,457,959	1,825,727	1,629,153	1,272,736	1,207,023	1,512,352	1,424,188	1,211,757	1,157,366	22,224,385

#### Project Number Z605630000 AIP Number 3-02-0017-XXX-201X

Freight Leaving St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Alaska Central Express		5	445	2,693				-							1,800		4,943
BEECH 1900 A/B/C/D		5	445	2,693				-							1,800		4,943
Arctic Circle Air Service	1,964	20,373	7,890	13,492	50,433	84,293	6,335	513									185,293
BEECH KING AIR		1,165	649	3,586	24,177	70,457	4,909										104,943
CESSNA 206/207/209	1,919	3,247	-	-	-	-											5,166
CESSNA 208		6,985	-	266	-	3,772											11,023
CESSNA C-402/402A	45	2,142	-	136	215	1,058	-										3,596
SHORT HARLAND SC-7	-	6,834	3,000	-	-	9,006											18,840
SHORTS 330		-	4,241	9,504	26,041	-	1,426	513									41,725
Arctic Transportation	325,486	114,488	132,499	117,812	142,284	212,442	151,761	240,951	284,290	285,307	270,722	173,849	257,721	146,932	231,444	150,438	3,238,426
CASA 212	318,214	94,508	112,986	102,098	115,571	192,749	143,086	168,701	226,121	195,409	180,006	137,821	219,145	81,713	163,512	107,153	2,558,793
CESSNA 206/207/209	7,021	19,512	19,513	15,714	26,713	19,693	8,675	39,201	37,268	39,073	36,148	32,443	38,576	37,148	40,628	27,605	444,931
CESSNA 208														28,071	27,304	15,680	71,055
CESSNA C-402/402A	251	468															719
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								33,049	20,901	50,825	54,568	3,585					162,928
Bering Air Inc.	1,000	2,847	1,100	4,625	2,390	29,400	-	-	-	200	350	1,100	-	2,200	160	1,522	46,894
BEECH 1900 A/B/C/D			-	-	500	-	-	-		-	-		-	-		-	500
BEECH 200 KINGAIR	-	-	-	-	-	-			-	200	-		-	1,200	-	80	1,480
CASA 212				4,625		29,400		-	-								34,025
CESSNA 208	-	2,050	850	-	-			-		-	-	-	-	-			2,900
CESSNA C208B															-	-	-
PIPER PA-31/T-1020	1,000	797	250	-	1,890	-	-	-	-	-	350	1,100	-	1,000	160	1,442	7,989
Bidzy Ta Hot Aana, Inc. d/b/a Tanana Air Service	20	870	-	-	-	-	-	-		-	-				-	-	890
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	20	870	-	-		-	-	-		-					-		890
PIPER PA-34/39	-				-												-
Cape Smythe Air Service			-														-
PIPER PA-31/T-1020			-														-
Era Aviation								849	4,020	4,749	976	2	14,021	9,445	14,242	25,498	73,802
BEECH 1900 A/B/C/D								844	2,670	181	111	2	330	103	-		4,241
DHC8-100 DASH 8								5	1,350	4,568	865	-	13,691	9,342	14,242	25,498	69,561
Frontier Flying Service	-	-	12,664	33,847	40,412	54,838	67,044	28,133	694	-	-		2,763		-	1,407	241,802
BEECH 1900 A/B/C/D	-	-	11,164	33,772	40,165	54,288	66,891	28,133	694	-							235,107
PIPER PA-31/T-1020		-	1,500	75	247	550	153										2,525
SHORTS 330											-		2,763		-	1,407	4,170
Grant Aviation	26,540	2,327	877	5,272	5,304	6,106	1,481	-	12	-	-	1	1,113	92	-	-	49,125
BEECH 200 KINGAIR	2	30			12						-	-					44
BEECHCRAFT 65-A90		-	-														-
CESSNA 172 SKYHAWK	-	-	-	-		40											40
CESSNA 206/207/209	24,024	1,912	810	5,156	4,892	5,997	124	-	12	-	-	-	-	-	-	-	42,927
CESSNA 208	2,439	385	-	-	-	2	1,352	-	-	-		-	974	1	-	-	5,153
GIPPS AERO GA8 AIR														-	-	-	-
PIPER PA-31/T-1020	75	-	67	116	400	67	5	-	-	-	-	1	139	91			961
Freight Leaving St. Mary's (lbs)																	
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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Hageland Aviation Service	431,471	283,834	163,177	132,410	140,765	145,466	122,489	126,696	153,407	172,348	184,265	235,267	367,694	174,487	157,566	193,592	3,184,934
BEECH 1900 A/B/C/D	20,616	26,061	26,040	641	1,963	420	4,064	37,968	27,678	33,706	19,334	31,150	64,638	35,047	33,634	41,627	404,587
CESSNA 172 SKYHAWK	-	-	-	-													-
CESSNA 180	-	-	-	-	-	-	-	-	-	-							-
CESSNA 206/207/209	159,094	69,057	43,796	41,002	44,467	53,194	51,128	41,959	50,103	58,444	52,293	57,176	80,929	29,702	35,664	46,976	914,984
CESSNA 208	203,143	177,052	91,331	90,767	93,992	91,717	67,113	46,623	74,098	80,191	112,634	146,732	221,597	109,686	88,268	104,989	1,799,933
CESSNA 406	34,247	10,995	2,010		343	135	184	-	1,525	-	-	62	510	52			50,063
CESSNA C-402/402A	14,371	669															15,040
PIPER PA-31/T-1020								146	3	7	4	147	20	-		-	327
Iliamna Air Taxi					-							-		-			-
Inland Aviation Services	-	-	-	-	725	-		-	-	215							940
CESSNA 172 SKYHAWK			-	-	-												-
CESSNA 206/207/209	-	-	-	-	725	-		-	-	215							940
Larrys Flying Service	30,600	45															30,645
CESSNA 172 SKYHAWK	1,908	45															1,953
CESSNA 206/207/209	-	-															-
PIPER PA-31/T-1020	-																-
PIPER PA-32	28,692	-															28,692
Lynden Air Cargo Airlines	1,052	18	3,500	9,339	39,375	5,080			-	46,200	184,584	324,431	137,380	40,996	43,852	102,262	938,069
LOCKHEED L100-30	1,052	18	3,500	9,339	39,375	5,080			-	46,200	184,584	324,431	137,380	40,996	43,852	102,262	938,069
Northern Air Cargo Inc.	42,629	639,229	560,751	304,404	733,949	677,071	224,997	239,818	322,062	642,378	393,599	472,953	157,838	496,884	570,694	514,817	6,994,073
ATR-42			44,602	34,527	1,029												80,158
BOEING 727-100C/QC	28,880	430,749	240,946	181,034	628,329	9,981											1,519,919
BOEING 737-100/200							120,479	239,818	322,062	642,378	393,599	472,953	157,838	496,884	570,694	514,817	3,931,522
DOUGLAS DC-6	13,749	208,480	275,203	88,843	104,591	667,090	104,518										1,462,474
Peninsula Airways Inc.	636	-															636
CESSNA 208	-																-
SAAB-FAIRCHD 340/B	-	-															-
SWEARINGEN METRO 3	636																636
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo	115,667	176,416	322,244	214,446	450,923	639,480	400,538	186,395	281,934	554,245	394,464	239,357	282,916	284,849	575,032	191,125	5,310,031
CESSNA 208				-							-				-		-
CURTISS C46 SERIES										1,518	1,068						2,586
DOUGLAS DC-6A	115,667	176,416	322,244	214,446	450,923	639,480	400,538	186,395	280,958	552,443	390,180	239,357	282,916	284,849	575,032	190,698	5,302,542
EMB-120 BRASILIA						-			976	284	3,216						4,476
PILATUS PC-12													-			427	427
Village Aviation	1,392	5,875	-														7,267
CASA 212	-	4,162															4,162
CESSNA 206/207/209	1,392	1,713	-														3,105
Warbelow			-				-	-	-	-							-
Wright Air Service	400	-	-	80		1,300	-	300	1,650	200	-		-			-	3,930
BEECH 35/36							-										-
CESSNA 206/207/209										200							200
CESSNA 208		-	-	-		1,100			1,650		-					-	2,750
PIPER PA-31/T-1020	400	-	-	80		200		300		-	-		-				980
Yute Air Aka Flight Alaska		-	-	-	-	-	-	-	-	204	-	-	-	-	-		204
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			-	-	-	-	-	-	-	204	-	-	-	-	-		204
PIPER PA-31/T-1020		-															-
Grand Total	978,857	1,246,327	1,205,147	838,420	1,606,560	1,855,476	974,645	823,655	1,048,069	1,706,046	1,428,960	1,446,960	1,221,446	1,155,885	1,594,790	1,180,661	20,311,904

Mail arriving to St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Alaska Central Express		-	358	218				-							-		576
BEECH 1900 A/B/C/D		-	358	218				-							-		576
Arctic Circle Air Service	122,648	365,948	363,160	293,213	255,698	290,016	44,754	3,023									1,738,460
BEECH KING AIR		222,076	334,759	268,105	219,324	259,650	22,427										1,326,341
CESSNA 206/207/209	164	1.013	1.344	-	998	75	·										3.594
CESSNA 208	-	28	1.428	402	_	-											1.858
CESSNA C-402/402A	122 034	130 587	9 756	9 819	20 775	27 288	18 462										338 721
	122,034	130,307	5,750	5,615	20,775	1 504	10,402										2 811
	430		1 5 0 7 2	- 11 007	-	1,304		2 0 2 2									2,044 65 102
Arctic Transportation	400	11,554 <b>2953</b>	13,873	14,007	14,001	1,499	3,803	5,025				1 172	1 725			F 726	10 067
Arctic Transportation	499	2,853	2,022	3,530	1,893	510	10	-	-	-	-	1,1/3	1,735	-	-	5,730	19,967
	443	2,791	1,231	2,395	1,893	-	-	-	-	-	-	1,162	1,735	-	-	-	11,650
CESSNA 206/207/209	56	62	791	1,141	-	510	10	-	-	-	-	11	-	-	-	-	2,581
CESSNA 208														-	-	5,736	5,736
CESSNA C-402/402A	-	-															-
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								-	-	-	-	-					-
Bering Air Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bidzy Ta Hot Aana, Inc. d/b/a Tanana Air Service	71	1,566	-	-	-	-	-	-		-	-				-	-	1,637
CESSNA 180											_						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	71	1.566	-	-		-	_	_		-					_		1.637
	-	1,000			_												_,00,
Cane Smythe Air Service			_														_
Ero Aviation			-					1 0/1	20 744	290 716	246.060	222 222	226 204	196 009	270 766	274 970	1 051 141
								1,941	50,744	12 046	540,009	223,733	220,394	100,908	2/9,700	2/4,0/0	1,951,141
								1,011	6,459	12,046	8,302	9,859	0,807	2,277	-	274 070	46,821
DHC8-100 DASH 8								930	24,285	368,670	337,767	213,874	219,527	184,631	279,766	274,870	1,904,320
Frontier Flying Service	-	-	59,475	113,926	136,475	124,936	401,002	161,705	8,333	-	-		11,758		-	1,379	1,018,989
BEECH 1900 A/B/C/D	-	-	57,300	113,403	133,632	122,558	400,188	161,705	8,333	-							997,119
PIPER PA-31/T-1020		-	2,175	523	2,843	2,378	814										8,733
SHORTS 330											-		11,758		-	1,379	13,137
Grant Aviation	27,107	26,933	18,069	7,632	7,203	3,963	2,903	-	-	-	-	-	-	-	-	-	93,810
BEECH 200 KINGAIR	43	78			200						-	-					321
BEECHCRAFT 65-A90		1,486	-														1,486
CESSNA 172 SKYHAWK	1,148	30	1	-		1,165											2,344
CESSNA 206/207/209	25,436	16,987	17,437	7,632	6,259	2,775	750	-	-	-	-	-	-	-	-	-	77,276
CESSNA 208	-	31	630	-	-	-	2,153	-	-	-		-	-	-	-	-	2,814
GIPPS AERO GA8 AIR							·							-	-	-	-
PIPER PA-31/T-1020	480	8.321	1	-	744	23	_	_	-	-	-	-	-	-			9.569
Hageland Aviation Service	82 103	81 782	72 281	73 518	41 280	24 424	44 306	356 073	495 671	972 123	1 115 966	1 079 985	1 415 383	1 531 411	1 638 414	1 590 369	10 615 089
	23 /62	28 771	16 / 79	-	-	-	6 855	293 239	435,871	863 800	1 025 101	981 10/	1 299 528	1 / 25 9/6	1 53/ 130	1 504 104	9//8 35/
	23,402	20,771	10,475	_	_	_	0,855	255,255	445,855	803,800	1,025,101	561,104	1,299,928	1,423,340	1,554,150	1,304,104	5,440,554
	-	-	-	-													-
CESSINA 20C (207 (200	-	-	-	-	-	-	-	-	-	-	25 002	20.010	22.002	24 606	26.010	20 4 5 4	-
CESSNA 206/207/209	20,720	8,726	12,789	22,667	13,509	6,909	11,939	26,639	18,097	49,896	35,893	29,816	33,882	21,606	26,810	28,151	368,049
CESSNA 208	15,154	26,939	32,980	50,851	27,607	17,430	25,495	35,660	29,516	56,052	54,972	69,034	80,825	83,859	77,474	58,114	741,962
CESSNA 406	9,703	15,539	10,033	-	164	85	17	227	1,077	22	-	31	1,148	-			38,046
CESSNA C-402/402A	13,064	1,807															14,871
PIPER PA-31/T-1020								308	1,146	2,353	-	-	-	-		-	3,807
lliamna Air Taxi					-							-		-			-
Inland Aviation Services		20	255	450	-	-		-	-	-							725
CESSNA 172 SKYHAWK		-	-	-	-												-
CESSNA 206/207/209	-	20	255	450	-	-		-	-	-							725
Larrys Flying Service	10.578	10.191	-														20.769
CESSNA 172 SKYHAWK	2.252	-,															2.252
CESSNA 206/207/209	л 201	R 117															12 522
DIDER DA_31/T_1020	4,351	0,142															12,000
	-	2 0 4 0															-
FIFER FA-32	3,935	z,049															5,984

Mail arriving to St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Lynden Air Cargo Airlines	-	837	-	225	-	-	-		-	-	557	-	733	-	-		2,352
LOCKHEED L100-30	-	837	-	225	-	-	-		-	-	557	-	733	-	-	-	2,352
Northern Air Cargo Inc.	445,370	1,918,756	1,754,286	1,749,687	1,783,701	1,860,642	1,750,188	1,640,061	1,667,336	1,407,753	1,260,108	1,333,611	1,253,432	1,146,682	1,090,929	1,118,329	23,180,871
ATR-42			913,453	885,768	73,904												1,873,125
BOEING 727-100C/QC	243,518	992,504	279,907	371,131	1,500,630	253,448											3,641,138
BOEING 737-100/200							806,227	1,640,061	1,667,336	1,407,753	1,260,108	1,333,611	1,253,432	1,146,682	1,090,929	1,118,329	12,724,468
DOUGLAS DC-6	201,852	926,252	560,926	492,788	209,167	1,607,194	943,961										4,942,140
Peninsula Airways Inc.	119,981	-															119,981
CESSNA 208	4,335																4,335
SAAB-FAIRCHD 340/B	989	-															989
SWEARINGEN METRO 3	114,657																114,657
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo	1,365,627	1,925,164	1,864,786	1,702,354	1,765,190	1,689,130	1,792,453	1,719,519	1,819,484	1,319,303	1,371,366	1,636,095	1,609,103	1,373,365	1,501,032	1,657,861	26,111,832
CESSNA 208				-							-				-		-
CURTISS C46 SERIES										54,115	30,490						84,605
DOUGLAS DC-6A	1,365,627	1,925,164	1,864,786	1,702,354	1,765,190	1,683,269	1,792,453	1,719,519	1,786,678	1,237,279	1,271,507	1,636,095	1,609,103	1,373,365	1,501,032	1,657,861	25,891,282
EMB-120 BRASILIA						5,861			32,806	27,909	69,369						135,945
PILATUS PC-12													-			-	-
Village Aviation	3,418	150	-														3,568
CASA 212	-	-															-
CESSNA 206/207/209	3,418	150	-														3,568
Warbelow			-				-	-	-	-							-
Wright Air Service		-	-	-		-	-	-	-	-	-		-			-	-
Yute Air Aka Flight Alaska		-	1,019	-	-	-	-	-	-	-	-	-	-	-	-		1,019
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			1,019	-	-	-	-	-	-	-	-	-	-	-	-		1,019
PIPER PA-31/T-1020		-															-
(blank)																	
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Grand Total	2,177,402	4,334,200	4,135,711	3,944,759	3,991,440	3,993,621	4,035,616	3,882,322	4,021,568	4,079,895	4,094,066	4,274,597	4,518,538	4,238,366	4,510,141	4,648,544	64,880,786

Mail leaving St. Mary's (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Alaska Central Express		-	358	218				-							-		576
BEECH 1900 A/B/C/D		-	358	218				-							-		576
Arctic Circle Air Service	59,379	183,818	178,985	171,586	143,114	177,216	29,182	2,133									945,413
BEECH KING AIR		114,452	165,862	160,518	126,058	159,216	15,048										741,154
CESSNA 206/207/209	164	1,013	849	-	998	75											3,099
CESSNA 208		28	944	402	-	-											1,374
CESSNA C-402/402A	59,065	61,523	4,038	3,328	10,771	16,348	12,284										167,357
SHORT HARLAND SC-7	150	890	-	-	-	1,000											2,040
SHORTS 330		5,912	7,292	7,338	5,287	577	1,850	2,133									30,389
Arctic Transportation	331,922	365,595	376,987	472,560	528,799	527,728	585,437	598,214	567,019	571,133	563,932	562,620	604,866	503,735	485,300	569,804	8,215,651
CASA 212	150,481	176,095	228,022	308,894	289,503	357,883	474,514	305,347	317,888	313,642	286,600	305,167	359,172	169,256	207,545	264,062	4,514,071
CESSNA 206/207/209	173,282	187,734	148,965	163,666	239,296	169,845	110,923	242,676	221,342	192,761	221,718	248,624	245,694	167,999	149,970	153,129	3,037,624
CESSNA 208														166,480	127,785	152,613	446,878
CESSNA C-402/402A	8,159	1,766															9,925
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								50,191	27,789	64,730	55,614	8,829					207,153
Bering Air Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bidzy Ta Hot Aana, Inc. d/b/a Tanana Air Service	260,518	319,510	101,859	-	-	-	-	-		-	-				-	-	681,887
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	260,518	319,510	101,859	-		-	-	-		-					-		681,887
PIPER PA-34/39	-		·		-												-
Cape Smythe Air Service			-														-
Era Aviation								1,962	17,587	13,591	-	-	16,937	22,070	28,556	67,614	168,317
BEECH 1900 A/B/C/D								617	13,445	172	-	-	2	435	351	-	15,022
DHC8-100 DASH 8								1,345	4,142	13,419	-	-	16,935	21,635	28,205	67,614	153,295
Frontier Flying Service	-	-	42,310	65,710	75,530	63,136	245,228	109,140	1,462	-	8,986		13,900	·	10,190	78,025	713,617
BEECH 1900 A/B/C/D	-	-	39,758	65,140	74,950	62,008	244,414	109,140	1,462	-	-		-		-	-	596,872
PIPER PA-31/T-1020		-	2,552	570	580	1,128	814										5,644
SHORTS 330			·			,					8,986		13,900		10,190	78,025	111,101
Grant Aviation	298,667	373,855	246,370	282,998	336,638	110,184	46,203	-	-	-	-	-	-	-	-	-	1,694,915
BEECH 200 KINGAIR	43	78	-	-	200	-	-				-	-					321
BEECHCRAFT 65-A90		-	_														-
CESSNA 172 SKYHAWK	1.103	-	1.415	-		27.833											30.351
CESSNA 206/207/209	287.100	333.631	234.886	278.382	316.611	82.251	44.050	_	-	-	_	-	-	-	_	-	1.576.911
CESSNA 208	1.629	4.518	830	4.616	2.615		2.153	_	-	-		-	-	-	_	-	16.361
GIPPS AERO GA8 AIR	,	,		,	,		,							-	_	-	-
PIPER PA-31/T-1020	8.792	35.628	9.239	-	17.212	100	-	_	-	-	_	-	-	-			70.971
Hageland Aviation Service	555.194	640.700	1.572.130	1.364.305	992.494	1.465.841	1.644.732	1.751.558	2.010.850	2.185.800	2.121.301	2.093.301	2.313.100	2.074.691	2.239.662	2.132.254	27.157.913
BEECH 1900 A/B/C/D	12.158	18.616	20.769	355	-	-	5.070	148.836	92.818	78.898	48.539	73.387	125.673	81.061	111.182	217.244	1.034.606
CESSNA 172 SKYHAWK				-			-,	,		/				,	,	,_	_,,
CESSNA 180	-	-	_	_	-	_	-	-	-	-							-
CESSNA 206/207/209	315,643	236,263	443,113	365,445	309,661	487.544	597,633	729.015	937,138	985,139	926,243	824 459	664,541	522,621	593,984	648,765	9.587.207
CESSNA 208	160 338	350,203	1 067 346	998 505	682 824	970 565	1 039 822	857.056	977 247	1 121 754	1 146 466	1 195 455	1 516 896	1 471 003	1 534 496	1 266 245	16 356 098
CESSNA 406	26 <i>1</i> 25	32 761	<u>1,007,0</u> ΔΩ 9Ω2	550,505	992,92 <del>4</del> Q	7 722	2 207	007,000 77	1 በ31				2 296	1, 1, 1,005 6	±,557,750	±,200,2 <del>4</del> J	123 396
CESSNA C-402/402A	20, <del>4</del> 20 20 620	2 920	10,002		2	1,152	2,201	<i>L1</i>	1,001				2,230	0			22,550
PIPER PA-31/T-1020	30,030	2,500						16 67/	2 616	٥	52	-	2 601	_		_	22,010
Iliamna Air Taxi					_			10,024	2,010	5		-	5,054	-		_	-
Inland Aviation Services		20	255	205		<u> </u>		_		_		-		-			
	-	20		205	-	-		-	-	-							
CESSNA 206/207/209	_	20	255	205	_	_		_	_	_							 /\&U
	=	20	200	205	-	-		-	-	—							+00

Larrys Flying Service	256,058	317,727															573,785
CESSNA 172 SKYHAWK	42,359	9,961															52,320
CESSNA 206/207/209	122,807	201,083															323,890
PIPER PA-31/T-1020	2,672																2,672
PIPER PA-32	88,220	106,683															194,903
Lynden Air Cargo Airlines	-	837	-	225	-	-			-	-	557	-	733	-	-	600	2,952
LOCKHEED L100-30	-	837	-	225	-	-			-	-	557	-	733	-	-	600	2,952
Northern Air Cargo Inc.	15,352	274,527	118,087	147,171	145,458	239,346	67,230	49,334	54,503	68,559	46,954	51,548	79,195	56,065	30,778	52,879	1,496,986
ATR-42			42,354	47,604	2,013												91,971
BOEING 727-100C/QC	7,243	119,987	6,606	49,115	132,636	4,290											319,877
BOEING 737-100/200							12,207	49,334	54,503	68,559	46,954	51,548	79,195	56,065	30,778	52,879	502,022
DOUGLAS DC-6	8,109	154,540	69,127	50,452	10,809	235,056	55,023										583,116
Peninsula Airways Inc.	55,930	-															55,930
CESSNA 208	2,095																2,095
SAAB-FAIRCHD 340/B	604	-															604
SWEARINGEN METRO 3	53,231																53,231
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo	186,272	297,142	140,433	44,320	125,208	71,482	88,838	20,366	24,509	46,291	138,041	383,621	393,639	297,396	287,907	292,672	2,838,137
CESSNA 208				-							-				-		-
CURTISS C46 SERIES										638	210						848
DOUGLAS DC-6A	186,272	297,142	140,433	44,320	125,208	71,482	88,838	20,366	24,022	44,905	137,099	383,621	393,639	297,396	287,907	292,615	2,835,265
EMB-120 BRASILIA						-			487	748	732						1,967
PILATUS PC-12													-			57	57
Village Aviation	320,835	261,477	-														582,312
CASA 212	8,040	52,107															60,147
CESSNA 206/207/209	312,795	209,370	-														522,165
Warbelow			-				-	-	-	-							-
Wright Air Service	-	-	-	-		-	-	-	-	-	-		-			-	-
Yute Air Aka Flight Alaska		-	1,019	-	-	-	-	-	-	-	-	-	-	-	-		1,019
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			1,019	-	-	-	-	-	-	-	-	-	-	-	-		1,019
PIPER PA-31/T-1020		-															-
(blank)																	
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Grand Total	2,340,127	3,035,208	2,778,793	2,549,298	2,347,241	2,654,933	2,706,850	2,532,707	2,675,930	2,885,374	2,879,771	3,091,090	3,422,370	2,953,957	3,082,393	3,193,848	45,129,890

ST. MARY'S AIRPORT
AIRPORT IMPROVEMENTS

Total Operations																		
	ARC	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
BEECH 35/36	A-I							2										2
CESSNA 172 SKYHAWK	A-I	165	32	38	12	6	275								4	14		546
GIPPS AERO GA8 AIR	A-I														6	16	10	32
CASA 212	A-II	230	186	210	233	227	305	296	228	257	239	209	203	268	130	180	187	3588
CURTISS C46 SERIES	В										18	8						26
BEECH 200 KINGAIR	B-I	8	4	6	4	4	8			2	4	10	2	12	10	4	6	84
BEECH KING AIR	B-I		348	559	540	470	480	38										2435
BEECHCRAFT 65-A90	B-I		8	2														10
CESSNA 180	B-I	5	12	10	2	2	3	3	2	2	4	2						47
CESSNA 206/207/209	B-I	8021	7194	6907	6584	6877	7437	6073	5630	6750	7762	6521	6449	5848	3862	4660	4599	101174
CESSNA 208	B-I	1423	2442	3142	2627	4311	4267	3064	2340	2844	3083	3110	3598	3970	3941	4352	3699	52213
CESSNA 406	B-I	1126	1014	491	1	53	104	46	21	23	9	7	19	5	6			2925
CESSNA C208B	B-I															2	6	8
CESSNA C-402/402A	B-I	1209	507	20	28	54	68	35										1921
PIPER PA-31/T-1020	B-I	57	123	115	54	111	74	18	86	49	41	77	50	49	35	10	35	984
PIPER PA-32	B-I	1003	1036	222	4		2	4	4		2					2		2279
PIPER PA-34/39	B-I	2				2												4
SWEARINGEN METRO 3	B-I	190																190
BEECH 1900 A/B/C/D	B-II	559	747	1081	1090	1205	1249	1649	1747	1159	778	947	964	1002	1027	1020	993	17217
EMB-120 BRASILIA	B-II						2			12	10	26						50
PILATUS PC-12	B-II												2	4	2		8	16
SAAB-FAIRCHD 340/B	B-II	6	2															8
SHORT HARLAND SC-7	B-II	2	15	6	8	4	24		54	38	100	86	8					345
SHORTS 330	B-II		12	26	32	42	4	4	4			6		8		4	32	174
DHC8-100 DASH 8	B-III								36	214	567	524	538	582	622	710	765	4558
DOUGLAS DC-6	B-III	32	135	110	62	32	265	136										772
DOUGLAS DC-6A	B-III	231	276	298	244	240	227	212	194	224	184	182	195	206	198	204	197	3512
ATR-42	C-III			272	274	22												568
BOEING 727-100C/QC	C-III	37	176	49	42	178	28											510
BOEING 737-100/200	C-III							108	220	228	240	201	224	204	212	196	186	2019
LOCKHEED L100-30	C-IV	3	6	2	2	2	4	8		4	2	8	16	8	2	2	5	74
Grand Total		14309	14275	13566	11843	13842	14826	11696	10566	11806	13043	11924	12268	12166	10057	11376	10728	198291

Passengers leaving St. Mary's																	
Alaska Control European	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 G	rand lotal
		-	-	-				-							<b>3</b>		3
BEECH 1900 A/B/C/D	c	-	-	-	10	24		-							3		3 127
	D	39	4Z	10	10	24	-	-									
	c	20	21	- 7		-	-										22
CESSIA 200/207/209	0	20	201	/	5	01											70
CESSINA = 208		1	Э 1	-	5	0											55 11
	-	T	T	9	-	-	-										11
	-	-	- 1	-	-	-											- 1
SHORIS 550		-	T	-	-	-	-	-					1.4	7	17	10	
	-	-	-	-	-	-	-	-	-	-	-	-	14	/	17	19	57
CASA 212 CESSNA 206/207/200	-	-	-	-	-	-	-	-	-	-	-	-	- 12	- 1	-	- 10	-
CESSINA 200/207/209	-	-	-	-	-	-	-	-	-	-	-	-	12	L C	0	10	40 1 F
														D	9	-	15
	-	-											1			1	-
													1			1	Z
SHORT HARLAND SC-7	105	50	52	40	52	02	-	-	-	-	-	-		47	21	65	-
	105	59	10	40	20	<b>83</b>	5	<b>31</b>	10	11	91	22	00	47	21	10	190
	10	2	10	10	20	20	-	10	2	-	35		3	- 1 -	c	10	100
	10	Z	17	0	5	20		1	5	4	4		24	15	0	9	131
	10	11	1	1	2	-		1	-	2		2		1.4			2
	10	11	1	-	3			3		3	-	3	-	14	1	2	54
	71	10	10	17	27	7	-	11	7	4	52	10	20	10	14	3	4
PIPER PA-31/1-1020	/1	46	19	1/	27	/	5	11	/	4	52	19	39	18	14	35	391
Bidzy Ta Hot Aana, Inc. d/b/a Tanana Air Service	24	33	38	2	-	-	4	4		1	-				-	3	109
											-						-
CESSNA 206/207/209										-						2	-
PIPER PA-31/1-1020	24	22	20	2			4			4						3	3
PIPER PA-32	24	33	38	2		-	4	4		1					-		106
PIPER PA-34/39	-		2		-												-
			3														
PIPER PA-31/1-1020			3					4 0 4 4	4 704	F 400	F 400	F 0.4F	F 072	C 000	6 226	C 355	3
								1,014	4,784	5,490	5,409	5,945	5,973	6,988	6,336	6,255	48,194
BEECH 1900 A/B/C/D								773	3,007	/31	1,073	1,104	937	609	82 C 254	C 255	8,310
DHC8-100 DASH 8		42	1 2 4 0	2 5 2 4	4 224	A 44.C	6 206	241	1,///	4,759	4,336	4,841	5,036	6,379	6,254	6,255	39,878
	57	42	1,349	3,524	4,234	4,416	6,386	4,896	175	43	-		-		-	-	25,122
	57	30	1,317	3,500	4,210	4,370	0,375	4,890	175	43							24,979
PIPER PA-31/1-1020		6	32	24	24	46	11										143
SHORIS 330	440	202	202	1 274	710	070	100	40	04	40	-	22	-	60	-	-	-
	449	292	202	1,274	/10	876	199	40	94	48	42	23	88	69	35	23	4,464
	ð	5	C		2						8	-					23
BEECHCKAFT 65-A90	2	1/	6			402											23
	2	10	9	4		193	100		20	24	25	0	22	4.0	~	C	218
CESSINA 200/207/209	395	149	140	1,239	644	614	166	14	28	21	25	8	23	16	6	Ь	3,494
	22	37	19	5	13	12	14	21	57	12		6	52	43	18	4	335
	~~			• •				_	-		-	-		/	11	13	31
PIPER PA-31/1-1020	22	74	28	26	51	57	19	5	9	15	9	9	13	3			340

Passengers leaving St. Mary's											
Hageland Aviation Service	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	1 721	3,024	2 277	4,310	100	1/17	3,511	3,092	<b>3,000</b>	7,423	7,430
CESSNA 172 SKYHAWK	1,721	2,270	2,277	1/4	190	147	14	1	2	20	40
	5	1	L2	1	1		1	1			
CESSINA 100 CESSINA 100	- 1 0 2 0	5 2 / E /	2 5 5 0	1 0E 0	1 2 71 E	2 240	1 2 2 4 2	1 010	-	- 2 252	2 2 2 7
CESSINA 200/207/209	2,000	2,454	2,550	1,000	2,715	5,249	2,342	1,019	2,479	3,352	3,237
	1,127	2,507	3,110	2,470	0,032	0,099	3,089	1,985	3,311	4,008	4,119
	1,804	1,440	740		00	155	05	25	40	-	11
	1,094	341						<b>C1</b>	20	27	27
PIPER PA-31/1-1020					2			01	30	57	37
					2						
					2						
PIPER PA-31/1-1020		20	0	10	2	1				4	
	4	20	9	18	21	1		-	-	1	
CESSIVA 1/2 SKYHAWK	4	20	4	2	1	1				4	
CESSINA 206/207/209	4	20	5	16	14	1		-	-	T	
	106	/3									
CESSNA 1/2 SKYHAWK	4	2									
CESSNA 206/207/209	38	48									
PIPER PA-31/1-1020	2	• •									
PIPER PA-32	62	23									
Lynden Air Cargo Airlines	-	-	-	-	-	-			-	-	-
Northern Air Cargo Inc.	-	-	-	-	-	-	-	-	-	-	-
Peninsula Airways Inc.	30	30									
CESSNA 208	-										
SAAB-FAIRCHD 340/B	29	30									
SWEARINGEN METRO 3	1										
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo	-	-	-	-	-	-	-	-	-	-	-
CESSNA 208				-							-
CURTISS C46 SERIES										-	-
DOUGLAS DC-6A	-	-	-	-	-	-	-	-	-	-	-
EMB-120 BRASILIA						-			-	-	-
PILATUS PC-12											
Village Aviation	-	-	-								
Warbelow			-				-	16	-	12	
BEECH 1900 A/B/C/D							-	16		12	
PIPER PA-31/T-1020			-						-		
Wright Air Service	4	-	11	6		7	-	19	2	4	-
BEECH 35/36							-				
CESSNA 206/207/209										1	
CESSNA 208		-	-	-		4			2		-
PIPER PA-31/T-1020	4	-	11	6		3		19		3	-
Yute Air Aka Flight Alaska		-	3	-	2	-	5	7	2	10	22
CESSNA 172 SKYHAWK											
CESSNA 206/207/209			3	-	2	-	5	7	2	10	22
PIPER PA-31/T-1020		-									
Grand Total	9,432	9,612	10,405	9,390	14,638	15,055	12,110	9,919	10,935	13,045	13,014

#### 2015 2014 2016 2017 Grand Total 2013 2 8,449 8,538 7,398 6,920 6,104 117,685 60 143 362 134 135 7,712 18 12 3,146 2,861 2,006 1,802 1,688 40,396 5,518 5,008 4,984 5,157 4,281 63,411 48 10 -4,470 1,435 38 16 12 231 -7 3 12 7 3 10 2 74 13 61 179 6 86 2 85 ------------60 -59 1 11 14 3 ----\_ --------3 11 14 -28 28 -53 ---1 6 -46 125 16 22 20 16 4 4 -16 22 16 121 16 -14,462 14,704 14,528 13,352 12,480 197,081

Sum of PASSENGERS To St.Mary's	2002	2002	2004	2005	2006	2007	2000	2000	2010	2014	2012	2042	2014	2045	2016	2017.0	
Alaska Contral Expross	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 G	
		-	-	-				2							2		6
Arctic Circle Air Service	11	- 10	- 52	- 21	10	47	_	5							5		101
	11	<b>4</b> 3	22	-	-	4/		-									24
	11	2	22	- 11	- 5	- 24	-										24 103
CESSINA 200/201/200	11	16	7	3	5	27											5/
CESSNA C-402/402A	-	-	, 2	7	-	-	_										۲-C و
SHORT HARLAND SC-7	-	-	-	-	_	_											-
SHORTS 330		-	1	_	_	_	_	_									1
Arctic Transportation	-		-	-	_	_	-	_	-	-	-	-	12	7	14	9	42
	-	-	-	_	_	_	-	_	-	-	_	-	-	-	-	_	-
CESSNA 206/207/209	-	-	-	-	_	_	-	-	-	-	-	-	12	5	7	8	32
CESSNA 208													16	2	, 7	-	9
CESSNA C-402/402A	-	-												2	,		-
PILATUS PC-12													-			1	1
SHORT HARLAND SC-7								_	-	-	-	-				-	-
Bering Air Inc.	99	60	18	50	33	68	24	30	7	12	77	27	67	70	18	49	709
BFFCH 1900 A/B/C/D			-	-	2	37	19	-	-		_	_/	-	14		-	75
BEECH 200 KINGAIR	15	2	1	10	-	22			-	2	3		26	14	8	9	115
CASA 212		_	_	1	-	-		2	-	_	-				-	-	3
CESSNA 208	16	15	-	24	6			6		3	16	-	2	17			105
CESSNA C208B					-			-		-					-	4	4
PIPER PA-31/T-1020	68	43	17	15	22	9	5	22	7	4	58	27	39	25	10	36	407
Bidzy Ta Hot Aana, Inc. d/b/a Tanana Air Service	20	16	28	2	2	1	4	4		1	-				-	-	78
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	20	16	28	2		1	4	4		1					-		76
PIPER PA-34/39	-				2												2
Cape Smythe Air Service			3														3
PIPER PA-31/T-1020			3														3
Era Aviation								1,129	5,024	5,774	6,115	6,533	7,058	7,650	7,097	7,436	53,816
BEECH 1900 A/B/C/D								791	3,011	681	1,144	1,089	919	587	84		8,306
DHC8-100 DASH 8								338	2,013	5,093	4,971	5,444	6,139	7,063	7,013	7,436	45,510
Frontier Flying Service	19	49	1,389	3,269	4,082	4,367	6,080	4,677	196	48	-		-		-	-	24,176
BEECH 1900 A/B/C/D	19	40	1,337	3,243	4,053	4,303	6,069	4,677	196	48							23,985
PIPER PA-31/T-1020		9	52	26	29	64	11										191
SHORTS 330											-		-		-	-	-
Grant Aviation	317	306	192	937	866	844	205	57	111	65	71	22	94	69	20	24	4,200
BEECH 200 KINGAIR	8	3			2						9	-					22
BEECHCRAFT 65-A90		17	5														22
CESSNA 172 SKYHAWK	-	4	2	5		140											151
CESSNA 206/207/209	254	169	139	908	781	637	160	34	54	40	53	7	24	21	5	5	3,291
CESSNA 208	23	28	15	5	15	6	35	18	49	10		6	60	38	4	12	324
GIPPS AERO GA8 AIR														8	11	7	26
PIPER PA-31/T-1020	32	85	31	19	68	61	10	5	8	15	9	9	10	2			364

Sum of PASSENGERS To St.Mary's	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Hageland Aviation Service	8,238	9,008	8,610	4.745	9.642	9,772	5,806	3,991	5,883	7,190	7.121
BEECH 1900 A/B/C/D	1.709	2.375	2.488	194	124	146	19	1	1	-	24
CESSNA 172 SKYHAWK	_,, 00	_,3	13	1		2.0	20	-	-		
CESSNA 180	2	4	4	1	1	-	1	1	1	2	
CESSNA 206/207/209	2.760	2.519	2.593	2.010	2.695	3.219	2.446	1.874	2.746	3.733	3.416
CESSNA 208	1.155	2.368	2.859	2.539	6.715	6.202	3.257	2.032	3.026	3.378	3.625
CESSNA 406	1.564	1.478	653	_,	107	205	83	38	31	40	10
CESSNA C-402/402A	1.041	261			-				-	-	-
PIPER PA-31/T-1020	_,							45	78	37	46
lliamna Air Taxi					-					•	
PILATUS PC-12											
PIPER PA-31/T-1020					-						
Inland Aviation Services	9	28	9	22	22	7		4	-	-	
CESSNA 172 SKYHAWK		2	4	2	6						
CESSNA 206/207/209	9	26	5	20	16	7		4	-	-	
Larrys Flying Service	93	50									
CESSNA 172 SKYHAWK	5	2									
CESSNA 206/207/209	33	25									
PIPER PA-31/T-1020	2										
PIPER PA-32	53	23									
Lynden Air Cargo Airlines	-	-	-	-	-	-	-		-	-	-
Northern Air Cargo Inc.	-	-	-	-	-	-	-	-	-	-	-
Peninsula Airways Inc.	29	28									
CESSNA 208	-										
SAAB-FAIRCHD 340/B	29	28									
SWEARINGEN METRO 3	-										
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo	-	-	-	5	-	-	-	-	-	-	-
CESSNA 208				5							-
CURTISS C46 SERIES										-	-
DOUGLAS DC-6A	-	-	-	-	-	-	-	-	-	-	-
EMB-120 BRASILIA						-			-	-	-
PILATUS PC-12											
Village Aviation	-	-	-								
Warbelow			-				-	-	-	13	
BEECH 1900 A/B/C/D							-	-		13	
PIPER PA-31/T-1020			-						-		
Wright Air Service		8	9	18		6	-	18	3	4	8
BEECH 35/36							-				
CESSNA 206/207/209										1	
CESSNA 208		5	4	8		4			3		6
PIPER PA-31/T-1020		3	5	10		2		18		3	2
Yute Air Aka Flight Alaska		-	3	1	2	3	10	5	2	24	26
CESSNA 172 SKYHAWK											
CESSNA 206/207/209			3	1	2	3	10	5	2	24	26
PIPER PA-31/T-1020		-									
Grand Total	8,835	9,602	10,314	9,070	14,659	15,115	12,129	9,918	11,226	13,131	13,418

#### 2015 2 2013 2014 2016 2017 Grand Total 7,884 6,919 5,857 7,959 7,510 116,135 63 68 208 48 57 7,525 24 17 3,267 2,703 2,077 2,001 1,707 41,766 5,096 4,551 5,205 4,870 4,085 60,963 53 9 -4,271 1,302 267 25 17 11 8 3 3 -3 3 --101 14 87 143 7 58 2 76 ------------57 -57 -4 11 24 4 --9 4 --------4 11 15 -13 13 -75 1 --1 30 -44 1 143 14 29 15 9 5 1 4 29 8 11 138 14 26 -

14,555 15,149 15,318 14,090 13,386

#### Project Number Z605630000 AIP Number 3-02-0017-XXX-201X

199,915

Freight Total (LBS)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Alaska Central Express		10	590	8,626				1,309							4,112		14,647
BEECH 1900 A/B/C/D		10	590	8,626				1,309							4,112		14,647
Arctic Circle Air Service	4,989	44,700	14,479	43,793	110,405	175,271	12,799	2,614									409,050
BEECH KING AIR		2,749	2,138	12,520	52,900	140,852	9,947										221,106
CESSNA 206/207/209	4,899	6,872	300	-	-	793											12,864
CESSNA 208		16,136	-	1,472	-	7,544											25,152
CESSNA C-402/402A	90	4,149	-	184	1,129	2,036	-										7,588
SHORT HARLAND SC-7	-	14,772	3,559	6,270	4,294	24,046											52,941
SHORTS 330		22	8,482	23,347	52,082	-	2,852	2,614									89,399
Arctic Transportation	358,101	160,763	187,660	143,124	185,974	250,305	221,599	285,886	331,266	341,903	320,540	207,669	313,511	188,959	307,137	170,008	3,974,405
CASA 212	346,466	134,394	163,588	123,704	151,035	227,057	207,571	202,235	257,649	233,889	211,094	169,812	271,418	115,395	229,118	122,986	3,167,411
CESSNA 206/207/209	11,384	25,901	24,072	19,420	34,939	23,248	14,028	47,018	46,092	47,585	41,956	34,272	42,093	42,654	48,361	29,614	532,637
CESSNA 208														30,910	29,658	17,408	77,976
CESSNA C-402/402A	251	468															719
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								36,633	27,525	60,429	67,490	3,585					195,662
Bering Air Inc.	1,300	5,961	1,900	4,625	7,385	29,400	-	10,100	2,600	1,140	350	1,300	1,077	4,041	160	2,689	74,028
BEECH 1900 A/B/C/D			-	-	1,744	-	-	-		-	-		-	-		-	1,744
BEECH 200 KINGAIR	-	-	-	-	-	-			-	1,140	-		1,077	1,200	-	280	3,697
CASA 212				4,625		29,400		10,100	2,600								46,725
CESSNA 208	-	3,050	850	-	663			-		-	-	-	-	-			4,563
CESSNA C208B															-	-	-
PIPER PA-31/T-1020	1,300	2,911	1,050	-	4,978	-	-	-	-	-	350	1,300	-	2,841	160	2,409	17,299
Cape Smythe Air Service			-														-
Era Aviation								2,330	17,352	43,153	30,917	44,900	103,154	114,358	134,455	161,693	652,312
BEECH 1900 A/B/C/D								2,123	6,537	2,366	2,270	1,963	5,165	3,882	1,088		25,394
DHC8-100 DASH 8								207	10,815	40,787	28,647	42,937	97,989	110,476	133,367	161,693	626,918
Frontier Flying Service	-	107	40,953	97,439	133,210	195,585	224,220	69,317	2,523	-	7,800		4,388		-	1,407	776,949
BEECH 1900 A/B/C/D	-	-	38,582	97,025	132,958	194,912	223,914	69,317	2,523	-							759,231
PIPER PA-31/T-1020		107	2,371	414	252	673	306										4,123
SHORTS 330											7,800		4,388		-	1,407	13,595
Grant Aviation	37,051	4,464	2,064	7,503	8,002	7,619	1,837	-	1,512	-	-	2	2,217	184	-	-	72,455
BEECH 200 KINGAIR	4	60			24						-	-					88
BEECHCRAFT 65-A90		-	-														-
CESSNA 172 SKYHAWK	-	-	-	-		40											40
CESSNA 206/207/209	32,402	3,754	1,930	7,271	7,070	7,441	429	-	12	-	-	-	-	-	-	-	60,309
CESSNA 208	4,495	385	-	-	-	4	1,398	-	1,500	-		-	1,948	2	-	-	9,732
GIPPS AERO GA8 AIR														-	-	-	-
PIPER PA-31/T-1020	150	265	134	232	908	134	10	-	-	-	-	2	269	182			2,286
Hageland Aviation Service	610,108	503,469	300,189	187,398	233,089	217,707	182,248	275,003	333,791	404,862	395,032	411,393	673,920	309,188	247,238	295,192	5,579,827
BEECH 1900 A/B/C/D	95,473	150,281	102,798	5,764	3,676	1,232	14,408	121,188	140,434	174,840	139,861	143,017	214,576	120,309	84,759	101,995	1,614,611
CESSNA 172 SKYHAWK	-	-	-	-													-
CESSNA 180	-	-	-	-	-	-	-	-	-	-							-
CESSNA 206/207/209	184,615	91,253	60,511	56,776	69,861	76,630	67,158	58,783	67,002	84,551	73,660	65,168	108,056	35,626	39,726	55,985	1,195,361
CESSNA 208	241,638	230,378	127,755	124,335	158,779	139,186	100,484	93,492	124,552	145,148	180,326	202,795	350,493	152,641	122,753	137,212	2,631,967
CESSNA 406	57,449	28,315	9,125	523	773	659	198	40	1,550	316	1,067	119	765	52			100,951
CESSNA C-402/402A	30,933	3,242															34,175
PIPER PA-31/T-1020								1,500	253	7	118	294	30	560		-	2,762
Iliamna Air Taxi					-							-		-			-
Inland Aviation Services	-	-	-	-	725	-		-	1,000	215							1,940
CESSNA 172 SKYHAWK		-	-	-	-												-
CESSNA 206/207/209	-	-	-	-	725	-		-	1,000	215							1,940
Larrys Flying Service	31,608	45															31,653
Lynden Air Cargo Airlines	37,407	66,372	3,500	9,358	65,888	66,678	312,622		59,311	60,856	201,728	375,248	176,653	43,142	43,852	102,262	1,624,877
LOCKHEED L100-30	37,407	66,372	3,500	9,358	65,888	66,678	312,622		59,311	60,856	201,728	375,248	176,653	43,142	43,852	102,262	1,624,877

Freight Total (LBS)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Northern Air Cargo Inc.	335,219	1,711,097	1,219,052	800,605	1,345,616	1,617,127	860,140	1,014,720	1,024,169	1,371,281	928,067	928,889	659,727	997,374	935,462	870,769	16,619,314
ATR-42			228,765	249,615	13,301												491,681
BOEING 727-100C/QC	230,814	1,076,890	417,016	316,367	1,147,596	54,929											3,243,612
BOEING 737-100/200							461,284	1,014,720	1,024,169	1,371,281	928,067	928,889	659,727	997,374	935,462	870,769	9,191,742
DOUGLAS DC-6	104,405	634,207	573,271	234,623	184,719	1,562,198	398,856										3,692,279
Peninsula Airways Inc.	1,761	-															1,761
CESSNA 208	-																-
SAAB-FAIRCHD 340/B	-	-															-
SWEARINGEN METRO 3	1,761																1,761
Tanana Air Service	924	945	-	-	-	-	-	-		-	-				-	-	1,869
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	924	945	-	-		-	-	-		-					-		1,869
PIPER PA-34/39	-				-												-
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo				502,258	754,597	1,028,896	890,376	619,715	1,096,972	1,110,621	817,262	684,582	787,793	922,827	1,134,131	734,007	11,084,037
CESSNA 208				750							-				734		1,484
CURTISS C46 SERIES										24,397	8,536						32,933
DOUGLAS DC-6A				501,508	754,597	1,028,387	890,376	619,715	1,092,215	1,083,209	794,776	684,582	787,793	922,827	1,133,397	730,003	11,023,385
EMB-120 BRASILIA						509			4,757	3,015	13,950						22,231
PILATUS PC-12													-			4,004	4,004
Tatonduk Outfitters Limited d/b/a Tatonduk Flying Service	434,982	460,213	674,719														1,569,914
DOUGLAS DC-6A	434,982	460,213	674,719														1,569,914
Village Aviation	4,615	12,405	-														17,020
CASA 212	1,300	8,287															9,587
CESSNA 206/207/209	3,315	4,118	-														7,433
Warbelow			-				-	-	-	-							-
Wright Air Service	400	420	-	1,060		2,775	-	600	3,300	400	-		-			-	8,955
BEECH 35/36							-										-
CESSNA 206/207/209										400							400
CESSNA 208		-	-	500		2,200			3,300		-					-	6,000
PIPER PA-31/T-1020	400	420	-	560		575		600		-	-		-				2,555
Yute Air Aka Flight Alaska		-	-	-	-	-	-	-	-	768	-	-	-	-	-		768
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			-	-	-	-	-	-	-	768	-	-	-	-	-		768
PIPER PA-31/T-1020		-															-
Grand Total	1,858,465	2,970,971	2,445,106	1,805,789	2,844,891	3,591,363	2,705,841	2,281,594	2,873,796	3,335,199	2,701,696	2,653,983	2,722,440	2,580,073	2,806,547	2,338,027	42,515,781

Total Mail (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Alaska Central Express		-	716	436				-							-		1,152
BEECH 1900 A/B/C/D		-	716	436				-							-		1,152
Arctic Circle Air Service	182,027	549,766	542,145	463,693	398,812	466,000	73,936	5,156									2,681,535
BEECH KING AIR		336,528	500,621	428,623	345,382	418,866	37,475										2,067,495
CESSNA 206/207/209	328	2,026	2,193	-	1,996	150											6,693
CESSNA 208		56	2,372	804	-	-											3,232
CESSNA C-402/402A	181,099	192,110	13,794	13,147	31,546	42,404	30,746										504,846
SHORT HARLAND SC-7	600	1,780	-	-	-	2,504											4,884
SHORTS 330		17,266	23,165	21,119	19,888	2,076	5,715	5,156									94,385
Arctic Transportation	332,421	368,448	379,009	476,096	530,692	528,238	585,447	598,214	567,019	571,133	563,932	563,793	604,983	503,735	485,300	569,804	8,228,264
CASA 212	150,924	178,886	229,253	311,289	291,396	357,883	474,514	305,347	317,888	313,642	286,600	306,329	359,289	169,256	207,545	264,062	4,524,103
CESSNA 206/207/209	173,338	187,796	149,756	164,807	239,296	170,355	110,933	242,676	221,342	192,761	221,718	248,635	245,694	167,999	149,970	153,129	3,040,205
CESSNA 208														166,480	127,785	152,613	446,878
CESSNA C-402/402A	8,159	1,766															9,925
PILATUS PC-12													-			-	-
SHORT HARLAND SC-7								50,191	27,789	64,730	55,614	8,829					207,153
Bering Air Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BEECH 1900 A/B/C/D			_	_	_	_	_	_		_	_		_	_		_	_
BEECH 200 KINGAIR	<u>-</u>	-	-	-	-	-			_	-	-		-	-	-	-	-
CASA 212				-		-		-	_								-
CESSNA 208	<u>-</u>	-	-	-	-			-		-	-	-	-	-			-
CESSNA C208B															_	-	-
PIPER PA-31/T-1020	_	_	_	_	-	_	_	-	-	_	_	_	_	_	_	_	-
Cane Smythe Air Service			_														-
PIPER PA-31/T-1020																	
Fra Aviation								3 903	48 331	394 307	346 069	223 733	243 331	208 978	308 322	347 484	2 119 458
								1 628	19 90/	12 218	8 302	9 859	6 869	200,570	350,322	342,404	61 8/13
								2 275	28 / 27	382 080	337 767	213 87/	236 462	2,712	307 971	312 181	2 057 615
Erontier Elving Service	_	_	101 785	179 636	212 005	188 072	646 052	2,275	28,427 <b>9 795</b>	382,089	8 986	213,874	250,402	200,200	10 190	342,484 <b>79 /0/</b>	2,037,013 1 732 //28
		-	07.059	179 5/030	212,003	194 566	644,032	270,845	0,705	-	8,980		23,038		10,190	75,404	1 502 912
	-	-	57,038	1 002	200,302	2 506	1 6 2 9	270,843	5,755	-							1,393,013
		-	4,727	1,095	5,425	5,500	1,020				0 006				10 100	70 404	14,577
SHORIS 330	225 774	400 799	264 420	200 620	241 541	114 147	40 100				8,980		25,058		10,190	79,404	124,238
	323,774	400,766	204,439	290,030	341,341	114,147	49,100	-	-	-	-	-	-	-	-	-	1,700,425
	80	1 496			400						-	-					1 496
	2.251	1,480	-			20,000											1,480
	2,251	30	1,410	-	220 570	28,998	44 800										32,095
CESSNA 206/207/209	312,536	350,618	252,323	286,014	320,570	85,026	44,800	-	-	-	-	-	-	-	-	-	1,651,887
CESSNA 208	1,629	4,549	1,460	4,616	2,615	-	4,306	-	-	-		-	-	-	-	-	19,175
	0.272	42.040	0.240		17.050	122								-	-	-	-
PIPER PA-31/T-1020	9,272	43,949	9,240	-	17,956	123	-	-	-	-	-	-	-	-	2 0 7 0 0 7 0	2 722 622	80,540
Hageland Aviation Service	637,297	/22,482	1,644,411	1,437,823	1,033,774	1,490,265	1,689,038	2,105,881	2,506,521	3,157,923	3,237,267	3,1/3,286	3,728,483	3,606,102	3,8/8,0/6	3,722,623	37,771,252
BEECH 1900 A/B/C/D	35,620	47,387	37,248	355	-	-	11,925	440,325	538,653	942,698	1,073,640	1,054,491	1,425,201	1,507,007	1,645,312	1,721,348	10,481,210
CESSNA 172 SKYHAWK	-	-	-	-													-
CESSNA 180	-	-	-	-	-	-	-	-	-	-							-
CESSNA 206/207/209	336,363	244,989	455,902	388,112	323,170	494,453	609,572	755,654	955,235	1,035,035	962,136	854,275	698,423	544,227	620,794	676,916	9,955,256
CESSNA 208	175,492	377,019	1,100,326	1,049,356	710,431	987,995	1,065,317	892,716	1,006,763	1,177,806	1,201,438	1,264,489	1,597,721	1,554,862	1,611,970	1,324,359	17,098,060
CESSNA 406	46,128	48,300	50,935	-	173	7,817	2,224	254	2,108	22	-	31	3,444	6			161,442
CESSNA C-402/402A	43,694	4,787															48,481
PIPER PA-31/T-1020								16,932	3,762	2,362	53	-	3,694	-		-	26,803
Iliamna Air Taxi					-							-		-			-
PILATUS PC-12												-		-			-
PIPER PA-31/T-1020					-												-
Inland Aviation Services	-	40	510	655	-	-		-	-	-							1,205
CESSNA 172 SKYHAWK		-	-	-	-												-
CESSNA 206/207/209	-	40	510	655	-	-		-	-	-							1,205

Total Mail (lbs)																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Larrys Flying Service	266,636	327,918															594,554
CESSNA 172 SKYHAWK	44,611	9,961															54,572
CESSNA 206/207/209	127,198	209,225															336,423
PIPER PA-31/T-1020	2,672																2,672
PIPER PA-32	92,155	108,732															200,887
Lynden Air Cargo Airlines	-	1,674	-	450	-	-	-		-	-	1,114	-	1,466	-	-	600	5,304
LOCKHEED L100-30	-	1,674	-	450	-	-	-		-	-	1,114	-	1,466	-	-	600	5,304
Northern Air Cargo Inc.	460,722	2,193,283	1,872,373	1,896,858	1,929,159	2,099,988	1,817,418	1,689,395	1,721,839	1,476,312	1,307,062	1,385,159	1,332,627	1,202,747	1,121,707	1,171,208	24,677,857
ATR-42			955,807	933,372	75,917												1,965,096
BOEING 727-100C/QC	250,761	1,112,491	286,513	420,246	1,633,266	257,738											3,961,015
BOEING 737-100/200							818,434	1,689,395	1,721,839	1,476,312	1,307,062	1,385,159	1,332,627	1,202,747	1,121,707	1,171,208	13,226,490
DOUGLAS DC-6	209,961	1,080,792	630,053	543,240	219,976	1,842,250	998,984										5,525,256
Peninsula Airways Inc.	175,911	-															175,911
CESSNA 208	6,430																6,430
SAAB-FAIRCHD 340/B	1,593	-															1,593
SWEARINGEN METRO 3	167,888																167,888
Tanana Air Service	260,589	321,076	101,859	-	-	-	-	-		-	-				-	-	683,524
CESSNA 180											-						-
CESSNA 206/207/209										-							-
PIPER PA-31/T-1020																-	-
PIPER PA-32	260,589	321,076	101,859	-		-	-	-		-					-		683,524
PIPER PA-34/39	-				-												-
Tatonduk Outfitters Limited d/b/a Everts Air Alaska and Everts Air Cargo				1,746,674	1,890,398	1,760,612	1,881,291	1,739,885	1,843,993	1,365,594	1,509,407	2,019,716	2,002,742	1,670,761	1,788,939	1,950,533	23,170,545
CESSNA 208				-							-				-		-
CURTISS C46 SERIES										54,753	30,700						85,453
DOUGLAS DC-6A				1,746,674	1,890,398	1,754,751	1,881,291	1,739,885	1,810,700	1,282,184	1,408,606	2,019,716	2,002,742	1,670,761	1,788,939	1,950,476	22,947,123
EMB-120 BRASILIA						5,861			33,293	28,657	70,101						137,912
PILATUS PC-12													-			57	57
Tatonduk Outfitters Limited d/b/a Tatonduk Flying Service	1,551,899	2,212,390	2,005,219														5,769,508
DOUGLAS DC-6A	1,551,899	2,212,390	2,005,219														5,769,508
Village Aviation	324,253	261,627	-														585,880
CASA 212	8,040	52,107															60,147
CESSNA 206/207/209	316,213	209,520	-														525,733
Warbelow			-				-	-	-	-							-
Wright Air Service	-	-	-	-		-	-	-	-	-	-		-			-	-
Yute Air Aka Flight Alaska		-	2,038	-	-	-	-	-	-	-	-	-	-	-	-		2,038
CESSNA 172 SKYHAWK														-	-		-
CESSNA 206/207/209			2,038	-	-	-	-	-	-	-	-	-	-	-	-		2,038
PIPER PA-31/T-1020		-															-
Grand Total	4,517,529	7,359,492	6,914,504	6,492,951	6,336,381	6,647,322	6,742,288	6,413,279	6,697,498	6,965,269	6,973,837	7,365,687	7,939,290	7,192,323	7,592,534	7,836,656	109,986,840

Total Operations																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 0	Grand Total
Alaska Central Express		4	2	12				2							4		24
BEECH 1900 A/B/C/D		4	2	12				2							4		24
Arctic Circle Air Service	242	684	650	628	586	640	77	4									3,511
BEECH KING AIR		348	559	540	470	480	38										2,435
CESSNA 206/207/209	31	43	32	14	10	44											174
CESSNA 208		25	7	6	6	20											64
CESSNA C-402/402A	209	241	20	28	54	68	35										655
SHORT HARLAND SC-7	2	15	6	8	4	24											59
SHORTS 330		12	26	32	42	4	4	4									124
Arctic Transportation	558	631	586	632	804	677	548	815	786	808	807	749	860	715	727	727	11,430
CASA 212	223	158	210	231	227	290	296	218	255	239	209	203	268	130	180	187	3,524
CESSNA 206/207/209	328	469	376	401	577	387	252	543	493	469	512	538	590	417	410	391	7,153
CESSNA 208														168	137	147	452
CESSNA C-402/402A	7	4															11
PILATUS PC-12													2			2	4
SHORT HARLAND SC-7								54	38	100	86	8					286
Bering Air Inc.	42	44	26	28	38	43	4	28	10	16	61	27	44	44	16	44	515
BEECH 1900 A/B/C/D			2	2	6	10	2	2		2	4		2	2		4	38
BEECH 200 KINGAIR	4	2	6	4	2	8			2	4	8		12	10	4	6	72
CASA 212				2		15		10	2								29
CESSNA 208	4	10	2	6	4			6		2	4	2	2	10			52
CESSNA C208B															2	6	8
PIPER PA-31/T-1020	34	32	16	14	26	10	2	10	6	8	45	25	28	22	10	28	316
Cape Smythe Air Service			4														4
PIPER PA-31/T-1020			4														4
Era Aviation								207	767	701	720	739	737	717	724	765	6,077
BEECH 1900 A/B/C/D								171	553	134	196	201	155	95	14		1,519
DHC8-100 DASH 8								36	214	567	524	538	582	622	710	765	4,558
Frontier Flying Service	4	18	427	1,044	1,183	1,239	1,635	1,195	46	8	6		8		4	32	6,849
BEECH 1900 A/B/C/D	4	12	375	1,028	1,165	1,207	1,629	1,195	46	8							6,669
PIPER PA-31/T-1020		6	52	16	18	32	6										130
SHORTS 330											6		8		4	32	50
Grant Aviation	755	739	766	1,660	1,513	1,383	396	53	100	62	55	20	74	72	60	64	7,772
BEECH 200 KINGAIR	4	2			2						2	2					12
BEECHCRAFT 65-A90		8	2														10
CESSNA 172 SKYHAWK	9	4	10	6		275											304
CESSNA 206/207/209	705	620	708	1,628	1,427	1,064	336	35	50	42	50	8	24	18	8	6	6,729
CESSNA 208	20	26	13	10	19	14	50	16	44	12		6	42	46	36	48	402
GIPPS AERO GA8 AIR														6	16	10	32
PIPER PA-31/T-1020	17	79	33	16	65	30	10	2	6	8	3	4	8	2			283

Total Operations																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Grand Total
Hageland Aviation Service	10,177	9,671	10,120	7,167	9,212	10,302	8,552	7,822	9,617	10,942	9,794	10,272	9,967	8,081	9,393	8,698	149,787
BEECH 1900 A/B/C/D	555	731	702	48	34	32	16	375	560	630	747	763	845	930	1,002	989	8,959
CESSNA 172 SKYHAWK	12	4	20	2													38
CESSNA 180	5	12	10	2	2	3	3	2	2	4							45
CESSNA 206/207/209	6,095	5,269	5,779	4,513	4,841	5,932	5,473	5,044	6,199	7,207	5,913	5,879	5,180	3,417	4,214	4,202	85,157
CESSNA 208	1,391	2,379	3,118	2,601	4,282	4,231	3,014	2,318	2,798	3,069	3,101	3,590	3,926	3,717	4,177	3,502	51,214
CESSNA 406	1,126	1,014	491	1	53	104	46	21	23	9	7	19	5	6			2,925
CESSNA C-402/402A	993	262															1,255
PIPER PA-31/T-1020								62	35	23	26	21	11	11		5	194
Iliamna Air Taxi					2							2		2			6
PILATUS PC-12												2		2			4
PIPER PA-31/T-1020					2												2
Inland Aviation Services	7	22	14	30	24	8		2	2	2							111
CESSNA 172 SKYHAWK		1	8	4	6												19
CESSNA 206/207/209	7	21	6	26	18	8		2	2	2							92
Larrys Flying Service	741	546															1,287
CESSNA 172 SKYHAWK	144	23															167
CESSNA 206/207/209	238	339															577
PIPER PA-31/T-1020	4																4
PIPER PA-32	355	184															539
Lynden Air Cargo Airlines	3	6	2	2	2	4	8		4	2	8	16	8	2	2	5	74
LOCKHEED L100-30	3	6	2	2	2	4	8		4	2	8	16	8	2	2	5	74
Northern Air Cargo Inc.	69	311	431	378	232	293	244	220	228	240	201	224	204	212	196	186	3,869
ATR-42			272	274	22												568
BOEING 727-100C/QC	37	176	49	42	178	28											510
BOEING 737-100/200							108	220	228	240	201	224	204	212	196	186	2,019
DOUGLAS DC-6	32	135	110	62	32	265	136										772
Peninsula Airways Inc.	204	2															206
CESSNA 208	8																8
SAAB-FAIRCHD 340/B	6	2															8
SWEARINGEN METRO 3	190																190
Tanana Air Service	650	852	222	4	2	2	4	4		4	2				2	2	1,750
CESSNA 180											2						2
CESSNA 206/207/209										2							2
PIPER PA-31/T-1020																2	2
PIPER PA-32	648	852	222	4		2	4	4		2					2		1,740
PIPER PA-34/39	2				2												4
Tatonduk Outfitters Limited d/b/a Everts Air Alas	ka and Everts	s Air Cargo	ט	246	240	229	212	194	236	212	219	195	208	198	206	203	2,798
CESSNA 208				2							3				2		7
CURTISS C46 SERIES										18	8						26
DOUGLAS DC-6A				244	240	227	212	194	224	184	182	195	206	198	204	197	2,707
EMB-120 BRASILIA						2			12	10	26						50
PILATUS PC-12													2			6	8

Total Operations																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 (	Grand Total
Tatonduk Outfitters Limited d/b/a Tatonduk Flying	231	276	298														805
DOUGLAS DC-6A	231	276	298														805
Village Aviation	624	461	-														1,085
CASA 212	7	28															35
CESSNA 206/207/209	617	433	-														1,050
Warbelow			4				2	2	2	4							14
BEECH 1900 A/B/C/D							2	2		4							8
PIPER PA-31/T-1020			4						2								6
Wright Air Service	2	6	8	10		4	2	12	2	4	5		2			2	59
BEECH 35/36							2										2
CESSNA 206/207/209										2							2
CESSNA 208		2	2	2		2			2		2					2	14
PIPER PA-31/T-1020	2	4	6	8		2		12		2	3		2				41
Yute Air Aka Flight Alaska		2	6	2	4	2	12	6	6	38	46	24	54	14	42		258
CESSNA 172 SKYHAWK														4	14		18
CESSNA 206/207/209			6	2	4	2	12	6	6	38	46	24	54	10	28		238
PIPER PA-31/T-1020		2															2
Grand Total	14,309	14,275	13,566	11,843	13,842	14,826	11,696	10,566	11,806	13,043	11,924	12,268	12,166	10,057	11,376	10,728	198,291

Total Operations																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 G	rand Total
Alaska Central Express		4	2	12				2							4		24
BEECH 1900 A/B/C/D		4	2	12				2							4		24
Arctic Circle Air Service	242	684	650	628	586	640	77	4									3,511
BEECH KING AIR		348	559	540	470	480	38										2,435
CESSNA 206/207/209	31	43	32	14	10	44											174
CESSNA 208		25	7	6	6	20											64
CESSNA C-402/402A	209	241	20	28	54	68	35										655
SHORT HARLAND SC-7	2	15	6	8	4	24											59
SHORTS 330		12	26	32	42	4	4	4									124
Arctic Transportation	558	631	586	632	804	677	548	815	786	808	807	749	860	715	727	727	11,430
CASA 212	223	158	210	231	227	290	296	218	255	239	209	203	268	130	180	187	3,524
CESSNA 206/207/209	328	469	376	401	577	387	252	543	493	469	512	538	590	417	410	391	7,153
CESSNA 208														168	137	147	452
CESSNA C-402/402A	7	4															11
PILATUS PC-12													2			2	4
SHORT HARLAND SC-7								54	38	100	86	8					286
Bering Air Inc.	42	44	26	28	38	43	4	28	10	16	61	27	44	44	16	44	515
BEECH 1900 A/B/C/D			2	2	6	10	2	2		2	4		2	2		4	38
BEECH 200 KINGAIR	4	2	6	4	2	8			2	4	8		12	10	4	6	72
CASA 212				2		15		10	2								29
CESSNA 208	4	10	2	6	4			6		2	4	2	2	10			52
CESSNA C208B															2	6	8
PIPER PA-31/T-1020	34	32	16	14	26	10	2	10	6	8	45	25	28	22	10	28	316
Cape Smythe Air Service			4														4
PIPER PA-31/T-1020			4														4
Era Aviation								207	767	701	720	739	737	717	724	765	6,077
BEECH 1900 A/B/C/D								171	553	134	196	201	155	95	14		1,519
DHC8-100 DASH 8								36	214	567	524	538	582	622	710	765	4,558
Frontier Flying Service	4	18	427	1,044	1,183	1,239	1,635	1,195	46	8	6		8		4	32	6,849
BEECH 1900 A/B/C/D	4	12	375	1,028	1,165	1,207	1,629	1,195	46	8							6,669
PIPER PA-31/T-1020		6	52	16	18	32	6										130
SHORTS 330											6		8		4	32	50
Grant Aviation	755	739	766	1,660	1,513	1,383	396	53	100	62	55	20	74	72	60	64	7,772
BEECH 200 KINGAIR	4	2			2	-					2	2					12
BEECHCRAFT 65-A90		8	2														10
CESSNA 172 SKYHAWK	9	4	10	6		275											304
CESSNA 206/207/209	705	620	708	1,628	1,427	1,064	336	35	50	42	50	8	24	18	8	6	6,729
CESSNA 208	20	26	13	10	19	14	50	16	44	12		6	42	46	36	48	402
GIPPS AERO GA8 AIR														6	16	10	32
PIPER PA-31/T-1020	17	79	33	16	65	30	10	2	6	8	3	4	8	2			283

Total Operations													
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	201
Hageland Aviation Service	10,177	9,671	10,120	7,167	9,212	10,302	8,552	7,822	9,617	10,942	9,794	10,272	9,967
BEECH 1900 A/B/C/D	555	731	702	48	34	32	16	375	560	630	747	763	845
CESSNA 172 SKYHAWK	12	4	20	2									
CESSNA 180	5	12	10	2	2	3	3	2	2	4			
CESSNA 206/207/209	6,095	5,269	5,779	4,513	4,841	5,932	5,473	5 <i>,</i> 044	6,199	7,207	5,913	5,879	5,180
CESSNA 208	1,391	2,379	3,118	2,601	4,282	4,231	3,014	2,318	2,798	3,069	3,101	3,590	3,926
CESSNA 406	1,126	1,014	491	1	53	104	46	21	23	9	7	19	5
CESSNA C-402/402A	993	262											
PIPER PA-31/T-1020								62	35	23	26	21	11
Iliamna Air Taxi					2							2	
PILATUS PC-12												2	
PIPER PA-31/T-1020					2								
Inland Aviation Services	7	22	14	30	24	8		2	2	2			
CESSNA 172 SKYHAWK		1	8	4	6								
CESSNA 206/207/209	7	21	6	26	18	8		2	2	2			
Larrys Flying Service	741	546											
CESSNA 172 SKYHAWK	144	23											
CESSNA 206/207/209	238	339											
PIPER PA-31/T-1020	4												
PIPER PA-32	355	184											
Lynden Air Cargo Airlines	3	6	2	2	2	4	8		4	2	8	16	8
LOCKHEED L100-30	3	6	2	2	2	4	8		4	2	8	16	8
Northern Air Cargo Inc.	69	311	431	378	232	293	244	220	228	240	201	224	204
ATR-42			272	274	22								
BOEING 727-100C/QC	37	176	49	42	178	28							
BOEING 737-100/200							108	220	228	240	201	224	204
DOUGLAS DC-6	32	135	110	62	32	265	136						
Peninsula Airways Inc.	204	2											
CESSNA 208	8												
SAAB-FAIRCHD 340/B	6	2											
SWEARINGEN METRO 3	190												
Tanana Air Service	650	852	222	4	2	2	4	4		4	2		
CESSNA 180											2		
CESSNA 206/207/209										2			
PIPER PA-31/T-1020													
PIPER PA-32	648	852	222	4		2	4	4		2			
PIPER PA-34/39	2				2								
Tatonduk Outfitters Limited d/b/a	a Everts Air Alask	a and Evert	ts Air Cargo	246	240	229	212	194	236	212	219	195	208
CESSNA 208				2							3		
CURTISS C46 SERIES										18	8		
DOUGLAS DC-6A				244	240	227	212	194	224	184	182	195	206
EMB-120 BRASILIA						2			12	10	26		
PILATUS PC-12													2

#### 2017 Grand Total 8,081 9,393 8,698 149,787 8,959 1,002 3,417 4,214 4,202 85,157 3,717 4,177 3,502 51,214 2,925 1,255 1,287 3,869 2,019 1,750 1,740 2,798 2,707

Total Operations																	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 0	irand Total
Tatonduk Outfitters Limited d/b/a Tat	231	276	298														805
DOUGLAS DC-6A	231	276	298														805
Village Aviation	624	461	-														1,085
CASA 212	7	28															35
CESSNA 206/207/209	617	433	-														1,050
Warbelow			4				2	2	2	4							14
BEECH 1900 A/B/C/D							2	2		4							8
PIPER PA-31/T-1020			4						2								6
Wright Air Service	2	6	8	10		4	2	12	2	4	5		2			2	59
BEECH 35/36							2										2
CESSNA 206/207/209										2							2
CESSNA 208		2	2	2		2			2		2					2	14
PIPER PA-31/T-1020	2	4	6	8		2		12		2	3		2				41
Yute Air Aka Flight Alaska		2	6	2	4	2	12	6	6	38	46	24	54	14	42		258
CESSNA 172 SKYHAWK														4	14		18
CESSNA 206/207/209			6	2	4	2	12	6	6	38	46	24	54	10	28		238
PIPER PA-31/T-1020		2															2
Grand Total	14,309	14,275	13,566	11,843	13,842	14,826	11,696	10,566	11,806	13,043	11,924	12,268	12,166	10,057	11,376	10,728	198,291

						AIRPORT IMP	ROVEMENTS			
	January	February	March	April	May	June	July	August	September	October
Passengers to KSM	15,519	16,424	17,912	15,516	17,100	16,143	16,084	19,424	15,675	17,472
Passengers from KSM	15,211	15,959	17,705	15,427	17,371	15,378	16,082	19,355	15,695	17,501
Total Passengers	30,730	32,383	35,617	30,943	34,471	31,521	32,166	38,779	31,370	34,973

ST. MARY'S AIRPORT

Note Data includes all passengers 2002-2017 sorted by month



November	December
15,922	16,724
15,711	15,686
31,633	32,410

	January	February	March	April	May	June	July	August	September	October	November	December
Freight to KSM	1,081,043	1,004,484	1,426,817	1,551,067	1,963,366	2,190,077	2,638,039	2,907,733	2,151,152	2,210,773	1,727,968	1,371,866
Freight from KSM	552,285	663,691	898,538	779,199	1,067,574	3,836,097	3,901,117	4,567,245	1,366,266	1,091,872	848,913	739,107
Total Freight	1,633,328	1,668,175	2,325,355	2,327,924	3,022,076	6,026,174	6,538,520	7,466,342	3,517,418	3,302,625	2,576,871	2,110,973

# Note Data includes all freight 2002-2017 sorted by month



	January	February	March	April	May	June	July	August	September	October	November	December
Mail to KSM	5,195,514	4,873,273	5,728,075	4,822,700	5,170,714	4,893,309	5,426,388	6,558,425	5,357,441	5,986,691	5,731,026	5,137,230
Mail from KSM	3,513,626	3,517,463	4,140,050	3,428,795	3,764,716	3,394,571	3,634,219	4,511,745	3,665,896	3,904,922	3,999,376	3,654,511
Total Mail	8,709,140	8,390,736	9,868,125	8,251,495	8,935,430	8,287,880	9,060,607	11,070,170	9,023,337	9,891,613	9,730,402	8,791,741

# Note Data includes all bypass mail 2002-2017 sorted by month



	ST. MARY'S AIRPORT AIRPORT IMPROVEMENTS											
	January	February	March	April	May	June	July	August	September	October		
BOEING 737-100/200	67	57	83	72	86	88	116	131	85	85		
Note Data includes all 73	7 operations 200	2-2017 sorted by	month									
Sum of DEPARTURES_PE	RFORMED											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
BOEING 737-100/200	54	110	114	120	101	112	102	106	98	93		





#### **Total Operations with Recorded Flight Plan** 2017 Grand Total Unknown A320 - Airbus A320 All Series AC50 - Aero Commander 500 AC68 - Aero Commander 680FP B160 - unknown B19 - Raytheon 1900 B190 - Beech 1900/C-12J B19P - unknown B350 - Beech Super King Air 350 B732 - Boeing 737-200/VC96 B737 - Boeing 737-700 BE19 - Beech 19 Sport BE20 - Beech 200 Super King BE24 - Beech 24 Sierra BE35 - Beech Bonanza 35 BE36 - Beech Bonanza 36 BE40 - Raytheon/Beech Beechjet 400/T-1 BE90 - Beech King Air 90 BE9L - Beech King Air 90 C130 - Lockheed 130 Hercules C172 - Cessna Skyhawk 172/Cutlass C190 - Cessna C 190 C206 - Cessna 206 Stationair C207 - Cessna Turbo Stationair 7 C208 - Cessna 208 Caravan C210 - Cessna 210 Centurion C212 - CASA Aviocar C340 - Cessna 340 C402 - Cessna 401/402 C441 - Cessna Conquest C46 - Curtiss C-46 Commando C560 - Cessna Citation V/Ultra/Encore C56X - Cessna Excel/XLS C680 - Cessna Citation Sovereign CA12 - Aerocomp Air 10 CL30 - Bombardier (Canadair) Challenger 300 CL60 - Bombardier Challenger 600/601/604 D228 - Dornier Do-28 DC3 - Boeing (Douglas) DC 3 DC6 - Boeing (Douglas) DC 6 DH8 - Bombardier DHC8 All Series DH8A - Bombardier DHC8-100 DHA - De Havilland Canada DHC-6 Twin Otter DHA8 - De Havilland Canada DHC-6 Twin Otter DHBA - unknown

Total Operations with Recorded Flight Plan											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 Gr	and Total
DHC8 - De Havilland DHC-8	0	0	0	0	0	2	0	0	0	0	2
E120 - Embraer Brasilia EMB 120	0	0	10	10	26	0	0	0	0	0	46
E3TF - Boeing Sentry TF33/E3C	0	0	0	0	0	2	0	0	0	0	2
F15 - Boeing F-15 Eagle	0	0	2	0	0	0	0	0	0	0	2
F16 - Lockheed F-16 Fighting Falcon	0	0	2	0	0	0	0	0	0	0	2
F18 - Boeing FA-18 Hornet	0	2	0	0	0	0	0	0	0	0	2
F2TH - Dassault Falcon 2000	0	2	0	0	0	0	0	0	0	0	2
F406 - Cessna F406 Vigilant	0	4	6	6	6	6	0	4	0	0	32
FA50 - Dassault Falcon/Mystère 50	0	2	0	0	0	0	0	0	0	0	2
GALX - IAI 1126 Galaxy/Gulfstream G200	2	0	0	0	0	0	0	0	0	0	2
H25B - BAe HS 125/700-800/Hawker 800	0	0	4	0	0	0	0	0	0	0	4
H60 - Sikorsky SH-60 Seahawk	0	0	0	2	0	0	0	0	0	0	2
KODI - Quest Kodiak	0	0	0	0	0	0	2	0	0	0	2
LJ35 - Bombardier Learjet 35/36	6	6	0	2	2	6	2	2	10	4	40
LJ60 - Bombardier Learjet 60	0	0	6	0	0	0	0	0	0	0	6
P180 - Piaggio P-180 Avanti	0	0	0	0	2	0	0	0	0	0	2
P3 - Lockheed P-3C Orion	0	0	0	0	0	0	2	0	0	0	2
PA24 - Piper PA-24	0	0	0	0	0	2	0	0	0	0	2
PA28 - Piper Cherokee	0	2	0	0	0	0	0	0	0	0	2
PA31 - Piper Navajo PA-31	26	18	20	34	44	18	14	30	10	28	242
PC12 - Pilatus PC-12	0	2	6	2	4	8	8	8	4	24	66
R22 - Robinson R-22 Mariner	0	2	0	0	0	0	0	0	0	0	2
S76 - Sikorsky S-76	2	0	0	0	0	0	0	0	0	0	2
SBR1 - North American Rockwell Sabre 40/60	0	2	0	0	0	0	0	0	0	0	2
SC7 - Short Skyvan SC7	0	0	4	0	0	0	0	0	0	0	4
SF34 - Saab SF 340	0	0	0	0	2	0	0	2	0	0	4
SH33 - Shorts 330	4	4	0	0	0	2	4	2	0	4	20
T38 - Northrop T-38 Talon	0	0	0	0	0	0	2	0	0	0	2
TEX2 - Raytheon Texan 2	0	2	0	0	0	0	0	0	0	0	2
WW24 - IAI 1124 Westwind	0	0	2	0	0	0	0	0	0	0	2
Grand Total	1334	1486	1708	1770	1828	1874	2004	2198	2044	2138	41476

Appendix G: Detailed Aviation Forecasts

# **Aviation Forecast Gravel Runway**

FORECAST ANNUAL OPERATIONS					Growth Rate		1.50%	1.50%	1.40%	1.30%
	APCH	WING SPAN	TAIL HGT	GROSS			Annual O	perations		2037
	SPEED			WEIGHT	2016	2017	2022	2027	2032	
AIRCRAFT	(knots)	(feet)	(feet)	(pounds) ARC	(year	0)	(year 5)	(year 10)	(year 15)	(year 20)
Alaska Central Express										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	4	0	4	4	4	4
Arctic Transportation										
CASA 212	81	62.3	20.7	16,975 A-II	180	187	201	217	233	249
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	410	391	421	454	487	519
CESSNA 208	79	52.08	15.5	8,750 A-II	137	147	158	170	182	194
PILATUS PC-12	87	53.25	14	9,920 A-II	0	2	2	2	2	2
Bering Air Inc.										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	0	4	4	4	4	4
BEECH 200 KINGAIR	103	54.5	15	12,500 B-I	4	6	6	6	6	6
CESSNA C208B	79	52.08	15.5	8,750 A-II	2	6	6	6	6	6
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	10	28	30	32	34	36
Era Aviation										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	14	0	15	16	18	18
DHC8-100 DASH 8	92	90	24.58	41,100 B-III	710	765	924	995	1067	1138
Frontier Flying Service										
SHORTS 330	96	74.67	23.08	22,000 B-II	4	32	34	37	40	43
Grant Aviation										
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	8	6	6	6	6	6
CESSNA 208	79	52.08	15.5	8,750 A-II	36	48	50	50	55	60
GIPPS AERO GA8 AIR	78	40.25	12.75	3,999 A-I	16	10	17	18	19	20
Hageland Aviation Service										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	1,002	989	1047	1129	1210	1290
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	4,214	4,202	4497	4846	5195	5544
CESSNA 208	79	52.08	15.5	8,750 A-II	4,177	3,502	3773	4066	4359	4651
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	0	5	5	5	5	5
Lynden Air Cargo Airlines										
LOCKHEED L100-30	138	132.6	39.2	155,000 C-IV	2	5	6	100	107	114
Med-Flight										
BEECH 200 KINGAIR	103	54.5	15	12,500 B-I	26	16	24	26	28	30
Bombardier Learjet 35	143	39.5	12.3	18,300 D-I	10	4	11	12	13	14
Northern Air Cargo Inc.										
BOEING 737-100/200	137	93	37.25	115,500 C-III	196	186	0	0	0	0

# **Aviation Forecast Gravel Runway**

FORECAST ANNUAL OPERATIONS					Growth Rate		1.50%	1.50%	1.40%	1.30%
	APCH	WING	TAIL	GROSS			Annual Op	perations		
	SPEED	SPAN	HGT	WEIGHT	2016	2017	2022	2027	2032	2037
AIRCRAFT	(knots)	(feet)	(feet)	(pounds) ARC	(year	0)	(year 5)	(year 10)	(year 15)	(year 20)
Alaska State Troopers										
CESSNA 182	64	36	9.33	3,100 A-I	1000	1000	1077	1160	1244	1327
Tanana Air Service										
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	0	2	2	2	2	2
Everts Air Alaska and Everts Air Cargo										
CESSNA 208	79	52.08	15.5	8,750 A-II	2	0	2	2	2	2
DOUGLAS DC-6A	108	117.5	29.3	104,000 B-III	204	197	250	0	0	0
PILATUS PC-12	87	53.25	14	9,920 A-II	0	6	6	6	6	6
Wright Air Service										
CESSNA 208	79	52.08	15.5	8,750 A-II	0	2	2	2	2	2
Yute Air Aka Flight Alaska										
CESSNA 172 SKYHAWK	75	36.17	8.92	2300 A-I	14	0	15	16	17	18
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	28	0	27	32	34	36
Unknown Operator										
Beech Bonanza 36	77	37.83	8.58	3,850 A-I	0	4	4	4	4	4
BEECH KING AIR 350	107	57.92	14.33	15,000 B-II	2	0	2	2	2	2
Beech King Air 90	97	50.25	14.67	9,650 B-I	6	4	4	4	4	4
BOEING 737-700	130	112.58	41.17	154,500 C-III	0	2	2	2	2	2
Bombardier Challenger 600/601/604	125	61.8	20.67	47,600 C-II	6	0	6	6	6	6
Cessna C 190	70	36.17	7.17	3,350 A-I	0	2	2	2	2	2
Cessna Conquest	98	49.3	13.1	9,925 B-II	8	12	13	14	15	16
PILATUS PC-12	87	53.25	14	9,920 A-II	6	22	24	26	28	30
Total	13,043	11,924	12,268	12,166 10,057	7 12,438	11,794	12,679	13,481	14,450	15,412
Military jet					2	2	2	2	2	2
GA Local and Intinerant @ 20% of Carriers					2488	2359	2536	2696	2890	3082
TOTAL fixed wing Operations					14928	14155	15217	<u>1617</u> 9	17342	<u>184</u> 96

#### **Aviation Forecast Paved Runway**

FORECAST ANNUAL OPERATIONS					Growth Rate		1.50%	1.50%	1.40%	1.30%
	APCH	WING	TAIL	GROSS			Annual O	perations		
	SPEED	SPAN	HGT	WEIGHT	2016	2017	2022	2027	2032	2037
AIRCRAFT	(knots)	(feet)	(feet)	(pounds) ARC	(year	0)	(year 5)	(year 10)	(year 15)	(year 20)
Alaska Central Express										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	4	0	4	4	4	4
Arctic Transportation										
CASA 212	81	62.3	20.7	16,975 A-II	180	187	201	217	233	249
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	410	391	421	454	487	519
CESSNA 208	79	52.08	15.5	8,750 A-II	137	147	158	170	182	194
PILATUS PC-12	87	53.25	14	9,920 A-II	0	2	2	2	2	2
Bering Air Inc.										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	0	4	4	4	4	4
BEECH 200 KINGAIR	103	54.5	15	12,500 B-I	4	6	6	6	6	6
CESSNA C208B	79	52.08	15.5	8,750 A-II	2	6	6	6	6	6
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	10	28	30	32	34	36
Era Aviation										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	14	0	15	16	18	18
DHC8-100 DASH 8	92	90	24.58	41,100 B-III	710	765	824	888	952	1016
Frontier Flying Service										
SHORTS 330	96	74.67	23.08	22,000 B-II	4	32	34	37	40	43
Grant Aviation										
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	8	6	6	6	6	6
CESSNA 208	79	52.08	15.5	8,750 A-II	36	48	50	50	55	60
GIPPS AERO GA8 AIR	78	40.25	12.75	3,999 A-I	16	10	17	18	19	20
Hageland Aviation Service										
BEECH 1900 A/B/C/D	113	58	15.5	17,120 B-II	1,002	989	1047	1129	1210	1290
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	4,214	4,202	4497	4845	5194	5543
CESSNA 208	79	52.08	15.5	8,750 A-II	4,177	3,502	3773	4065	4358	4650
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	0	5	5	5	5	5
Lynden Air Cargo Airlines										
LOCKHEED L100-30	138	132.6	39.2	155,000 C-IV	2	5	6	6	6	6
Med-Flight										
BEECH 200 KINGAIR	103	54.5	15	12,500 B-I	26	16	24	26	28	30
Bombardier Learjet 35	143	39.5	12.3	18,300 D-I	10	4	11	12	13	14
Northern Air Cargo Inc.										
BOEING 737-100/200	137	93	37.25	115,500 C-III	196	186	0	0	0	0
BOEING 737-300	135	94.75	36.58	139,500 C-III	0	0	280	259	279	301

# Aviation Forecast Paved Runway

FORECAST ANNUAL OPERATIONS					Growth Rate		1.50%	1.50%	1.40%	1.30%
	APCH	WING	TAIL	GROSS			Annual Op	perations		
	SPEED	SPAN	HGT	WEIGHT	2016	2017	2022	2027	2032	2037
AIRCRAFT	(knots)	(feet)	(feet)	(pounds) ARC	(year	0)	(year 5)	(year 10)	(year 15)	(year 20)
Alaska Air Cargo										
BOEING 737-700	130	112.58	41.17	154,500 C-III	0	0	248	224	240	256
Alaska State Troopers										
CESSNA 182	64	36	9.33	3,100 A-I	1000	1000	1077	1160	1244	1327
Tanana Air Service										
PIPER PA-31/T-1020	79	40.7	13	6,200 A-I	0	2	2	2	2	2
Everts Air Alaska and Everts Air Cargo										
CESSNA 208	79	52.08	15.5	8,750 A-II	2	0	2	2	2	2
DOUGLAS DC-6A	108	117.5	29.3	104,000 B-III	204	197	250	0	0	0
McDonnell Douglas DC-9-40	129	93.3	28	114,000 C-III	0	0	0	200	214	228
PILATUS PC-12	87	53.25	14	9,920 A-II	0	6	6	6	6	6
Wright Air Service										
CESSNA 208	79	52.08	15.5	8,750 A-II	0	2	2	2	2	2
Yute Air Aka Flight Alaska										
CESSNA 172 SKYHAWK	75	36.17	8.92	2300 A-I	14	0	15	16	17	18
CESSNA 206/207/209	70	35.83	9.58	3,800 A-I	28	0	30	32	34	36
Unknown Operator										
Beech Bonanza 36	77	37.83	8.58	3,850 A-I	0	4	4	4	4	4
BEECH KING AIR 350	107	57.92	14.33	15,000 B-II	2	0	2	2	2	2
Beech King Air 90	97	50.25	14.67	9,650 B-I	6	4	4	4	4	4
BOEING 737-700	130	112.58	41.17	154,500 C-III	0	2	2	2	2	2
Bombardier Challenger 600/601/604	125	61.8	20.67	47,600 C-II	6	0	6	6	6	6
Cessna C 190	70	36.17	7.17	3,350 A-I	0	2	2	2	2	2
Cessna Conquest	98	49.3	13.1	9,925 B-II	8	12	13	14	15	16
PILATUS PC-12	87	53.25	14	9,920 A-II	6	22	24	26	28	30
Total	13,043	11,924	12,268	12,166 10,05	7 12,438	11,794	13,110	13,961	14,965	15,965
Military jet					2	2	2	2	2	2
GA Local and Intinerant @ 20% of Carriers					2488	2359	2622	2792	2993	3193
TOTAL fixed wing Operations					14928	14155	15734	16755	17960	19160