



## 3.0 FORECAST OF AVIATION ACTIVITY

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### 3.1 Introduction and Background

Forecasting future levels of aviation activity is the basis for making critical decisions in airport planning. If an airport is poised to see growth, the master plan defines the steps needed to accommodate the demand. Because forecasting can have a large influence on the recommendations of a master plan, it is critical to collect appropriate information, apply reasonable judgements, and use FAA-approved methodologies to help forecast the level of activity and the types of aircraft at the airport. The intent of the aviation activity forecasts is to quantify future airport demand so realistic development goals can be appropriately planned for and phased.

This aviation forecast for the Deadhorse Airport, includes elements of local socioeconomics, demographics, geography, aviation trends, and external factors. The forecast projects commercial, general aviation, military, and air cargo activity over a 20-year planning period beginning with a base year of FFY2022 (FFY22), extending through FFY42. It will highlight a short-term period from 2022 through 2027 (FFY22 - FFY27), a medium-term period from 2028 through 2032 (FFY28 - FFY32), and a long-term period from 2033 through 2042 (FFY33 - FFY42).

Operations at SCC are not formally recorded because there is no air traffic control tower. Consequently, operations estimations from a variety of sources were compiled to generate the base year estimate. Real-time data was captured using ADS-B technology for a five-month period and is used in this forecast to substantiate trends measured in FAA and U.S. Department of Transportation (USDOT) data. See Section 3.6 for a summary of FFY22 base year aviation activity.

### 3.2 Socioeconomic Conditions

The Deadhorse Airport is the main transportation hub for oil and gas operations on the North Slope of Alaska. SCC is in Prudhoe Bay, an unincorporated U.S. Census designated place (CDP) on the Beaufort Sea coast (Figure 3-1).<sup>1</sup> Prudhoe Bay is the largest oil field in the United States and the fourth largest in the world. Prudhoe Bay is located in the northeastern portion of the NSB and is the origination point of the 800-mile long Trans-Alaska Pipeline System which terminates at Valdez on Prince William Sound.<sup>2</sup>

Oilfield drilling and exploration are year-round activities; ice roads are built in winter months to reduce damage to the fragile tundra and to provide access to remote drilling locations that would otherwise be inaccessible. Much of northern Alaska, including Prudhoe Bay, remains unexplored relative to other sedimentary basins around the world, due to the limited amount of published geological data.<sup>3</sup> However, recent announcements made by major oil and gas

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<sup>1</sup> State of Alaska Department of Labor and Workforce Development. 2023. *Research and Analysis*. <https://live.laborstats.alaska.gov/population/37064380/glance>.

<sup>2</sup> North Slope Borough. 2023. *Our Communities*. <https://www.north-slope.org/our-communities/>.

<sup>3</sup> State of Alaska Department of Natural Resources. 2023. *North Slope and Brooks Range Foothills*. <https://dggs.alaska.gov/energy/north-slope.html>.



companies CPAI, Santos, and Repsol gives rise to potential new exploration with the Willow and Pikka projects.<sup>4</sup>

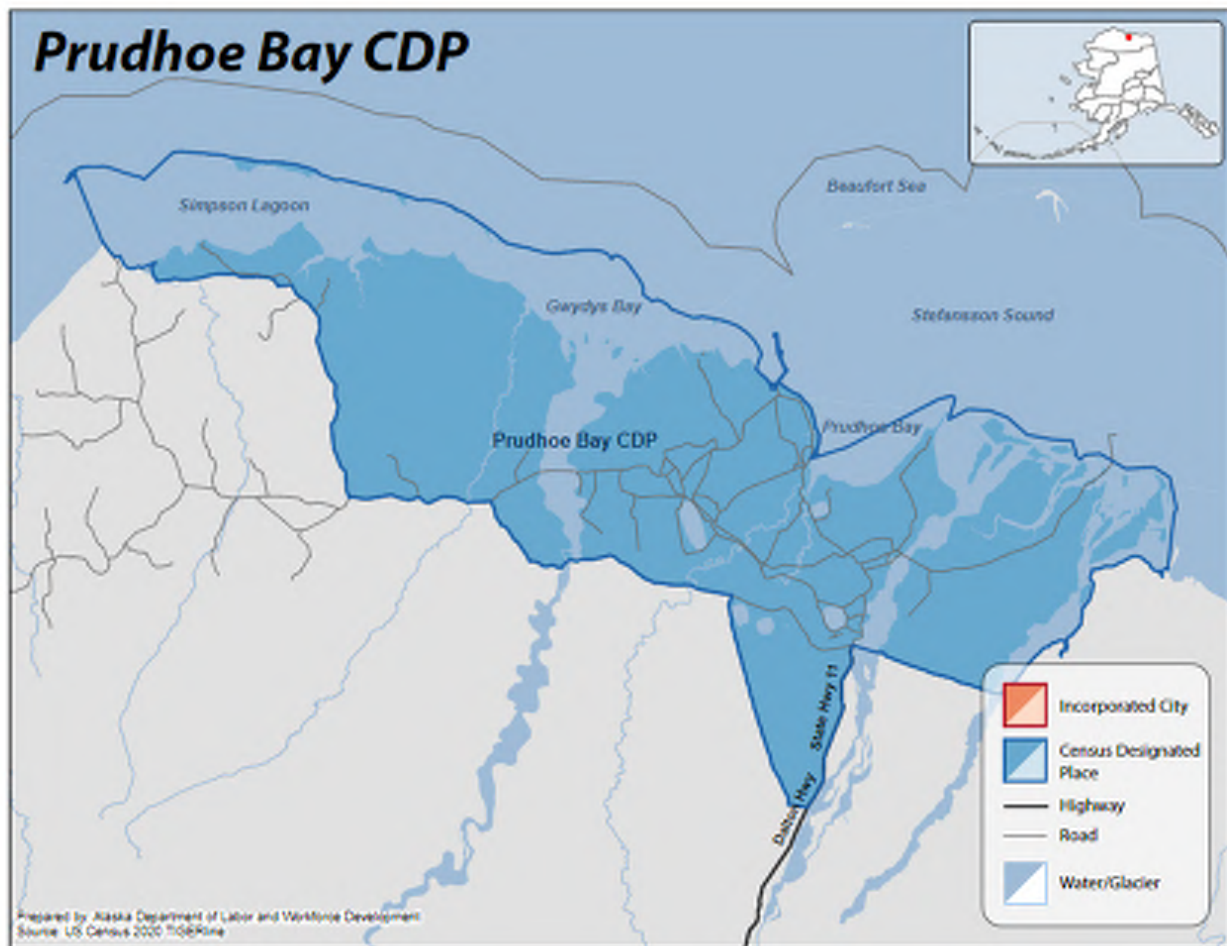


Figure 3-1: Prudhoe Bay 2020 Census Area Map

### 3.2.1 Population

Population data for Prudhoe Bay was obtained using the State of Alaska’s Department of Labor and Workforce Development (DLWD) Research and Analysis website. DLWD publishes population estimates for Alaska places, boroughs, and census areas every year in January and uses applications to the Alaska Permanent Fund Dividend (PFD) Program, official records of births and deaths, U.S. Census Bureau data, and results from surveys to calculate their population estimates.<sup>5</sup> Prudhoe Bay is one of two CDPs and seven cities that make up Alaska’s NSB. The NSB encompasses approximately 94,000 square miles of land above the Arctic Circle.<sup>6</sup>

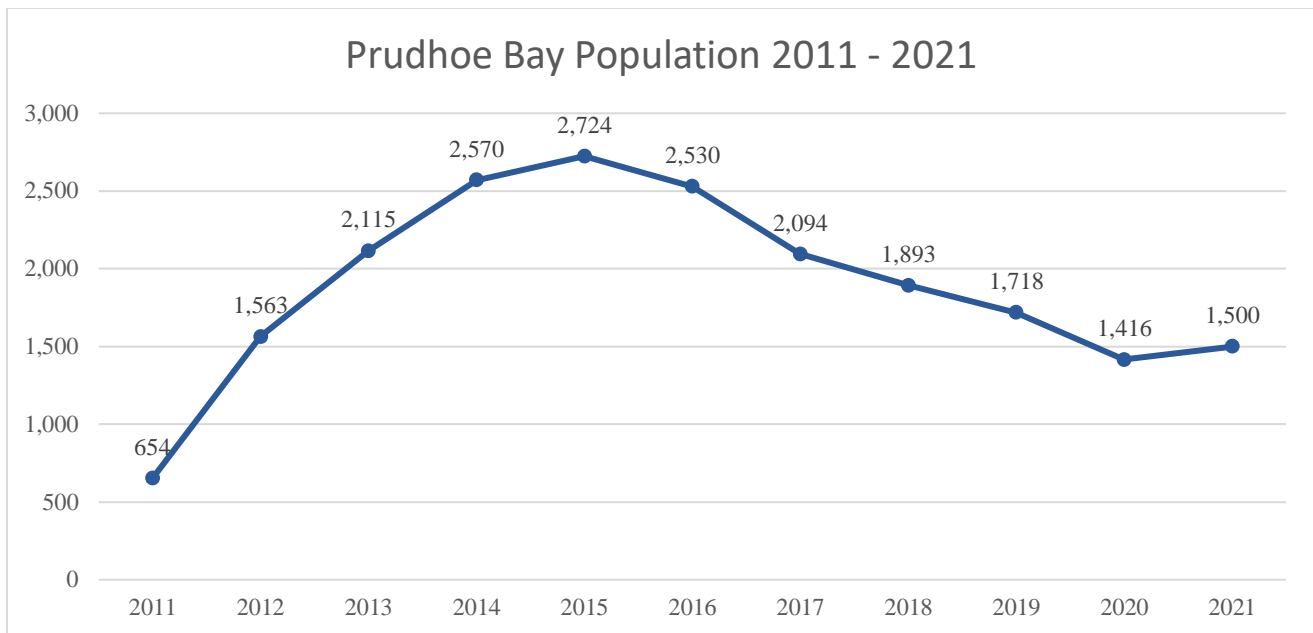
<sup>4</sup> Alaska Department of Labor & Workforce Development. 2022. *Job Projections Through 2030*. <https://live.laborstats.alaska.gov/trends-magazine/2022/October/job-projections-through-2030>.

<sup>5</sup> Ibid

<sup>6</sup> North Slope Borough. 2023. *Explore your Government*. <https://www.north-slope.org/your-government/>.



According to the NSB's latest Comprehensive Plan, only five people live in the Prudhoe Bay area year-round. At the center of Prudhoe Bay is Deadhorse, with the airport, hotels, and a single general store. There are no retail stores, private homes, or apartment buildings in the area to support permanent residency. For this reason, counting the population of a community without permanent residency is challenging and has historically relied on the methods mentioned above. Unlike most communities, Prudhoe Bay's reported population is made up of transitory oil field workers who support the oilfield development. These individuals qualify as residents because they spend at least half of the calendar year working there. Figure 3-2 illustrates the estimated historical population of Prudhoe Bay from 2011 to 2021<sup>7</sup>. There are no current published population projections of Prudhoe Bay; however, population can be directly correlated with oil and gas employment which is illustrated in Figure 3-3, which depicts both population and employment steadily decreasing since 2015.

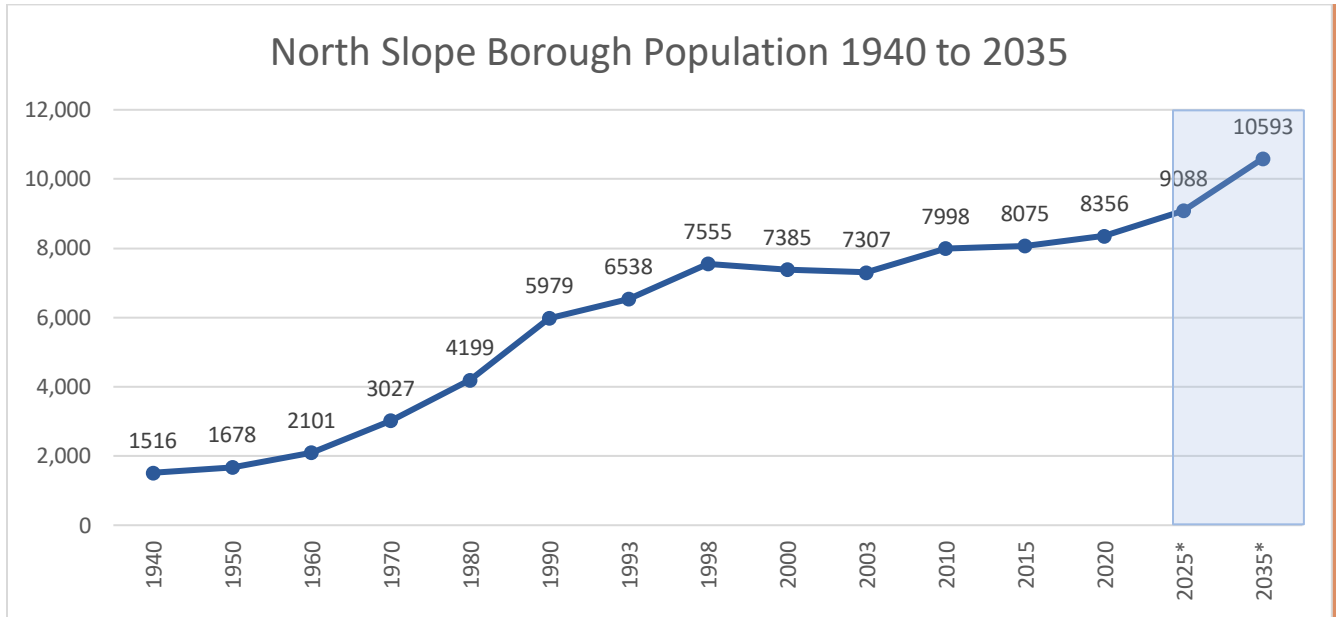


Source: US Census Bureau, June 2023

Figure 3-2: Prudhoe Bay Historical Population Estimates, 2011 - 2021

Converse to Prudhoe Bay's drop in population, population of the NSB has steadily increased since 1940 as shown in Figure 3-3. This rise is largely attributed to natural increase which is the rate at which births surpass deaths.

<sup>7</sup> Alaska Department of Labor & Workforce Development. 2022. Alaska Population Projections, 2021 to 2050. <https://live.laborstats.alaska.gov/pop/projections/pub/popproj.pdf>.



Source: NSB Comprehensive Plan 2019-2039, published 2019

\* Denotes projected populations by the NSB Comprehensive Plan 2019-2039

Figure 3-3: NSB Historical and Projected Population, 1940 - 2035

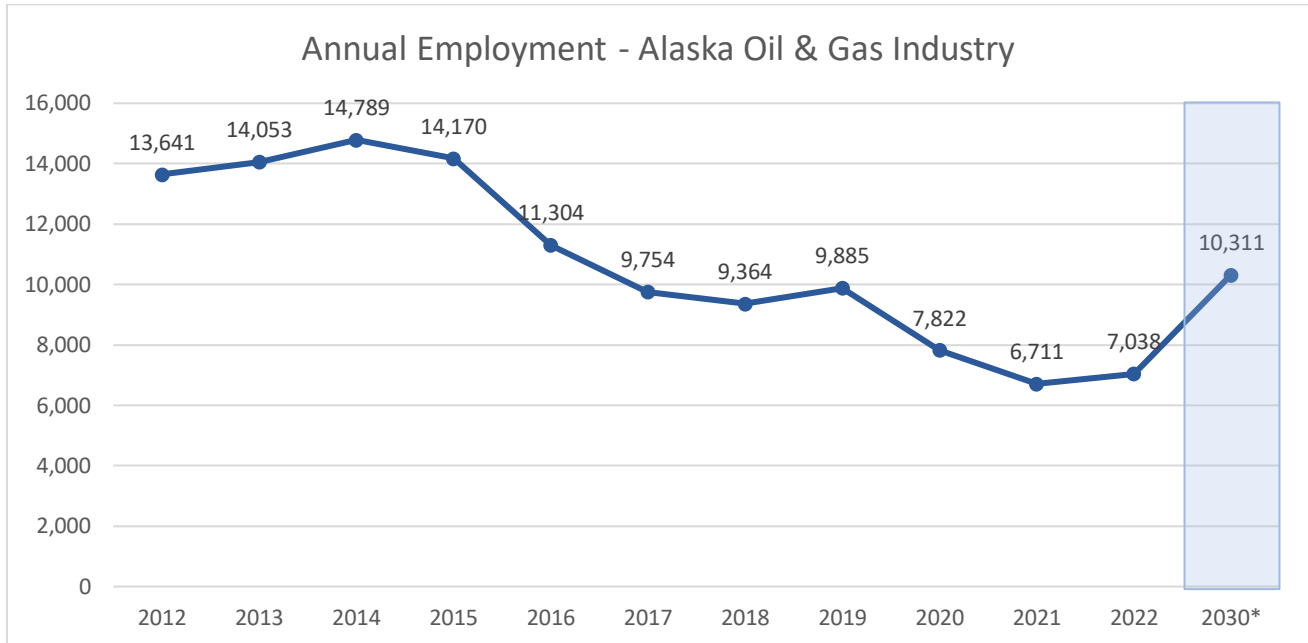
### 3.2.2 Employment

Prudhoe Bay exists to support Arctic oil exploration. Oilfield workers travel to SCC to work rotational shifts, often two weeks on and one week off. Since production began just over 40 years ago, the Prudhoe Bay oilfield has more than 800 active oil-producing wells with drilling expected to continue for many years.<sup>8</sup>

Per Alaska DLWD data (Figure 3-4), Alaska’s oil and gas industry has been losing jobs since its peak in 2015 following the cease of Shell’s Arctic oil drilling and exploration programs. A brief uptick can be seen in 2019 just before the Covid-19 pandemic followed by cuts of another 2,000-plus jobs. Alaska DLWD projects that oil industry jobs will grow at rate of 0.8 percent and slowly recover to pre-pandemic job counts by 2030.<sup>9</sup> This projection is heavily based on the recent announcement of promising new projects and ongoing exploration and expansion of existing operations by oil companies such as Santos, Repsol, and CPAI.

<sup>8</sup> ConocoPhillips Alaska. 2023. Greater Prudhoe Bay. <https://alaska.conocophillips.com/who-we-are/alaska-operations/greater-prudhoe-bay/>.

<sup>9</sup> State of Alaska DLWD. 8 October 2022 Alaska Economic Trends Magazine. <https://live.laborstats.alaska.gov/trends-magazine/2022/October/job-projections-through-2030>.



Source: State of Alaska DLWD, Research and Analysis, 2023

\*Denotes projected populations by the DLWD

Figure 3-4: Alaska Annual Employment, Historical and Projected – Oil & Gas Industry

### 3.2.3 Summary of Socioeconomic Conditions

It is generally accepted that as a community grows in population, so does its demand for travel and freight services. Because Prudhoe Bay is unlike many other communities in Alaska, it is apparent that population is driven almost exclusively by employment within the oil industry. This forecast uses statistical smoothing to factor oil and gas activity and employment as a significant driver of aviation demand in Prudhoe Bay and at SCC.

### 3.3 Forecast Methodology

Practical considerations dictate the level of detail and effort for an airport planning forecast. FAA AC 150/5070-6B gives guidance on the methodologies to be used when forecasting data in an airport master plan. These types of methodologies include:

- Regression analysis – A statistical technique that ties aviation demand (dependent variables), such as enplanements, to economic measures (independent variables), such as population and income. This type of analysis should be restricted to relatively simple models with independent variables for which reliable forecasts are available.
- Trend analysis – A method of projecting historic trends into the future. In trend analysis, a simple equation is used with time as the independent variable. It is one of the fundamental techniques used to analyze and forecast aviation activity. While it is frequently used as a back-up technique, it is highly valuable because it is relatively simple to apply.
- Share analysis – This technique assumes a top-down relationship between national, regional, and local forecasts. Local forecasts are a market share (percentage) of regional forecasts, which are a market share of national forecasts. Historical market shares are calculated and used as a basis for projecting future market shares. This type



of forecast is useful when the activity to be forecast has a constant share of a larger aggregate forecast.

- Smoothing – A statistical technique applied to historical data, giving greater weight to the latest trends and conditions at the airport; it can be effective in generating short-term forecasts.
- Terminal Area Forecast (TAF) – Projected growth dictated by the FAA’s TAF is used and compared against as a benchmark to help show consistency in the aviation demand forecast.

This forecast will use a combination of trend analysis and smoothing to create a forecasted annual average growth rate (AAGR).

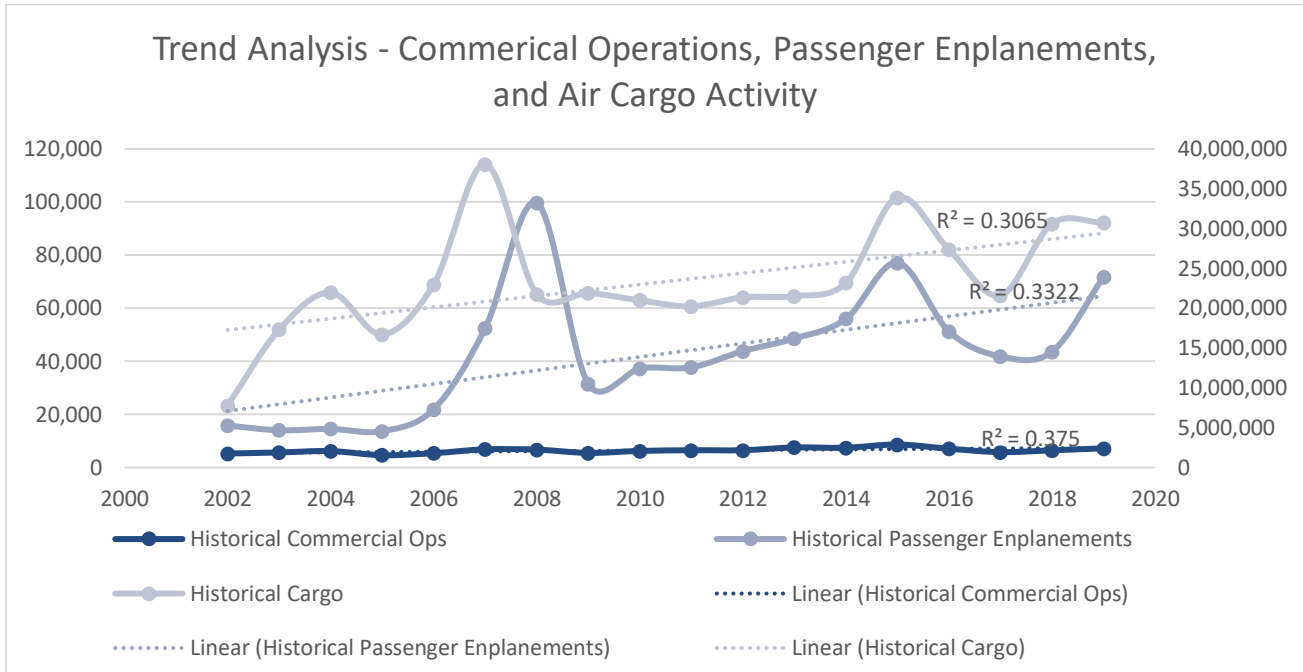
## 3.4 Aviation Forecast

Deadhorse oil and gas activity and employment from this industry play a significant role in aviation activity at SCC. The trend analysis model, consistent with FAA guidance, was used to project future aviation demand based on historical datasets of commercial operations, general aviation activity, military activity, passenger enplanements, air cargo activity, and based aircraft at SCC.

Much like this aviation demand forecast, the Alaska DWLD creates 10-year industry and occupational projections for Alaska every other year using a series of four steps: gathering base year data, determining industry patterns, applying change factor adjustments, and projecting estimated job openings. The DLWD latest 10-year projection of oil and gas industry employment, published in October of 2022, projects a growth rate of 0.8 percent. This projection factors the new developments of Pikka and Willow by companies Santos, Repsol, and CPAI, who report the creation of an additional 5,100 temporary construction jobs and 800 permanent jobs. This projection is incorporated into this aviation demand forecast through statistical smoothing.

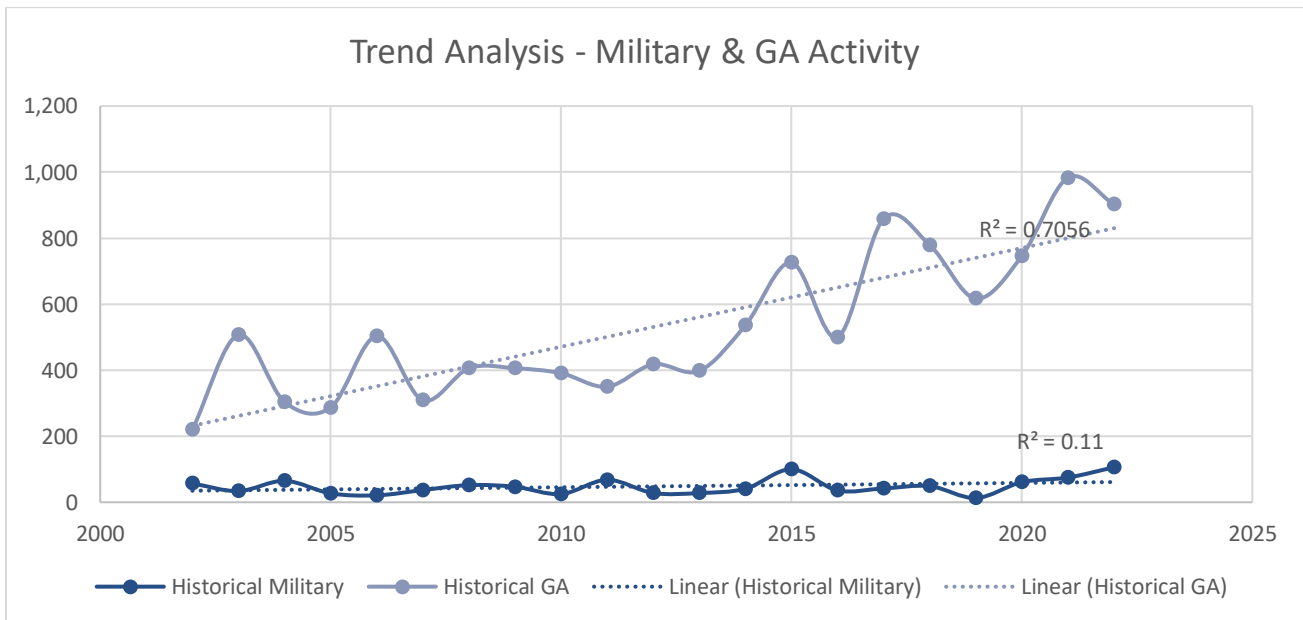
Figure 3-5 and Figure 3-6 depict the correlation strengths of the trend analysis model chosen for this forecast, using time as the independent variable. These figures illustrate the patterns that each dataset follows and how they compare against one another. There is strong correlation between passenger enplanements and air cargo activity which follow closely to the success of the oil and gas industry where cargo and people are needed to meet the demands of oil and gas production.

Another strong pattern is between commercial operations and military activity, both of which operate independently of oil and gas production, one more so than the other. This assumes that aircraft operate as scheduled (weather dependent) and regardless of seats sold. However, increased oil and gas production and employment will have a positive impact on operations demanding more flights to be added to the weekly schedule. Additionally, military operations and training exercises are assumed to be conducted completely independent of oil and gas employment, though there is an overlap of military assistance with search and rescue efforts of field employees.



Source: Compiled by DOWL, June 2023

Figure 3-5: Trend Analysis of Aviation Demand – Commercial Operations, Passenger Enplanements, and Air Cargo Activity



Source: Compiled by DOWL, June 2023

Figure 3-6: Trend Analysis of Aviation Demand – Military and General Aviation Activity

Using the methodology described above, the following bulleted statements detail the aviation demand forecasts (See Table 3-1).

- Commercial Aircraft Operations Forecast** – Trend analysis for commercial aircraft operations measured operational growth over the 20-year study period and projects



historical trends into the future. Covid-19 pandemic outlier years were omitted from this data due to the strength of the correlation and the impact the pandemic had on both commercial operations and employment on the North Slope. As individuals were discouraged from travel, oil field employers were faced with challenges on how to keep employees healthy and navigate national directives. This forecast assumes that both commercial operations and oil and gas production are in a state of rebound and are expected to grow at pre-pandemic rates. Smoothing was incorporated in this analysis by factoring the DLWD employment projection of 0.8 percent into the annual growth rate, assuming new Willow and Pikka oilfield developments occur as planned. In this forecast commercial aircraft operations are expected to grow at an average annual rate of 2.1 percent by FFY42.

- **General Aviation Activity Forecast** – Trend analysis for GA activity measured activity growth over the 20-year study period and projects historical trends into the future. Covid-19 pandemic outlier years were included in this model due to the strength of the correlation and given that these years did not appear to have a negative impact on GA activity. GA pilots generally fly alone or in small groups, thus it is assumed that federal mandates did not have a detrimental impact on GA activity at SCC. Smoothing was incorporated in this analysis by factoring the DLWD employment projection of 0.8 percent into the annual growth rate, assuming new oilfield developments will have a small but positive impact on recreational or executive GA travel. In this forecast GA activity is expected to grow at an average annual rate of 2.4 percent by FFY42.
- **Military Aviation Forecast** – Trend analysis for military activity measured activity growth over the 20-year study period and projects historical trends into the future. Covid-19 pandemic outlier years were included in this model due to the strength of the correlation and the lack of impact the pandemic appeared to have on military activity. While military operations are often difficult to predict, historical activity is fairly consistent with flat growth. Smoothing was incorporated in this analysis by factoring the DLWD employment projection of 0.8 percent into the annual growth rate, assuming that an increase in oilfield production may require additional military search and rescue support. In this forecast military activity is expected to grow at an average annual rate of 0.1 percent by FFY42.
- **Passenger Enplanements Forecast** – Trend analysis for passenger enplanements measured growth over the 20-year study period and projects historical trends into the future. Covid-19 pandemic outlier years were omitted from this model due to the strength of the correlation and the impact the pandemic had on commercial travel and employment on the North Slope. As these mandates are no longer in place, including this data does not give an accurate illustration of projected growth now that passenger enplanement activity has rebounded to pre-Covid-19 pandemic levels. Smoothing was incorporated in this analysis by factoring the DLWD employment projection of 0.8 percent into the annual growth rate, assuming new Willow and Pikka oilfield developments occur as projected, an influx of new employees and movement of more passengers in the near-term is expected. In this forecast passenger enplanements are expected to grow at an average annual rate of 2.7 percent by FFY42.
- **Air Cargo Activity Forecast** – Trend analysis for air cargo activity measured activity growth over the 20-year study period and projects historical trends into the future. Covid-19 pandemic outlier years were omitted from this model due to the strength of the correlation and the impact the pandemic had on commercial travel and oil production on the North Slope. The North Slope endured at least one temporary shutdown in an effort



to protect employees and contractors from the spreading virus. Smoothing was incorporated in this analysis by factoring the DLWD employment projection of 0.8 percent into the annual growth rate, assuming the new Willow and Pikka oilfield developments occur as projected, they will have a positive impact on air cargo activity and increased cargo tonnage. In this forecast air cargo activity is expected to grow at an average annual rate of 3.4 percent by FFY42.

- **Based Aircraft** – The forecast for based aircraft projects the number of based aircraft at SCC to remain static as is historically measured from FFY11 – FFY22.

*Table 3-1: SCC Airport Aviation Forecast Growth Model Percentages*

SCC Forecast Growth Rate Percentages			
Forecast	Short Term	Medium Term	Long Term
Commercial Aircraft Operations	5.3%	3.1%	2.1%
GA Activity	1.9%	2.4%	2.4%
Military	-6.2%	1.9%	0.1%
Passenger Enplanements	3.3%	3.0%	2.7%
Air Cargo Activity	11.1%	5.9%	3.4%
Based Aircraft	0%	0%	0%

*Compiled by DOWL, June 2023*

Forecasts for each component of the SCC airport are discussed in Section 3.5. information is Table 3-2 addresses the airport forecast.

# Deadhorse Airport Master Plan



Table 3-2: SCC Airport Aviation Forecast

SCC Forecast Short, Medium, and Long Term FFY22 - FFY42							
Forecast	Year	Commercial Aircraft Operations	Passenger Enplanements	Air Cargo Activity (lb)	Local Operations		Based Aircraft
					GA Activity	Military Activity	
Short Term FFY22 - FFY27	FFY22	5,369	71,948	15,820,000	902	106	10
	FFY23	6,683	74,450	25,720,000	868	69	10
	FFY24	6,750	76,951	25,990,000	899	71	10
	FFY25	6,817	79,452	26,260,000	929	73	10
	FFY26	6,885	81,953	26,520,000	959	75	10
	FFY27	6,954	84,454	26,790,000	989	77	10
Medium Term FFY28 - FFY32	FFY28	7,024	86,955	27,050,000	1,019	79	10
	FFY29	7,094	89,456	27,320,000	1,050	81	10
	FFY30	7,165	91,957	27,590,000	1,080	83	10
	FFY31	7,236	94,458	27,850,000	1,110	85	10
	FFY32	7,309	96,960	28,120,000	1,140	87	10
Long Term FFY33 - FFY42	FFY33	7,382	99,461	28,390,000	1,170	89	10
	FFY34	7,456	101,962	28,650,000	1,201	92	10
	FFY35	7,530	104,463	28,920,000	1,231	94	10
	FFY36	7,606	106,964	29,180,000	1,261	96	10
	FFY37	7,682	109,465	29,450,000	1,291	98	10
	FFY38	7,758	111,966	29,720,000	1,322	100	10
	FFY39	7,836	114,467	29,980,000	1,352	102	10
	FFY40	7,914	116,968	30,250,000	1,382	104	10
	FFY41	7,994	119,469	30,510,000	1,412	106	10
	FFY42	8,073	121,971	30,780,000	1,442	108	10



## 3.5 Historical and Forecasted Aviation Activity

Historical aviation activity was gathered using FAA Traffic Flow Management System Counts (TFMSC) database as well as the Bureau of Transportation Statistics (BTS) Air Carrier Statistics Form 41 traffic data. The FAA TFMSC data is created when pilots file flight plans and/or when flights are detected by the National Airspace System (NAS), usually via RADAR.<sup>10</sup> While the TFMSC reliably captures a majority of IFR and some VFR traffic, the data is limited by radar coverage and incomplete messaging, exclusions may occur with low-altitude flights or if the enroute airspace is missing from the flight plan. BTS Form 41 traffic data is reported by certificated U.S. and foreign air carriers on transported passengers and freight, and collected by BTS monthly, quarterly, semiannually, and annually. Submission of BTS Form 41 traffic data is a requirement under 14 CFR 241.22 for large, certified air carriers, and for this reason, has limitations in its ability to capture Part 135 activity. In an effort to substantiate trends in historical data from the databases mentioned above, real-time data was captured using ADS-B technology for a five-month period. This data is summarized in Section 3.10, Identification of Critical Aircraft.

See the tables and charts below for historical overview of commercial operations, general aviation (GA), military, passenger, and air cargo activity at SCC for the past 20 years.

### 3.5.1 Historical and Forecasted Commercial Aircraft Operations

SCC mainly supports the oil and gas industry of Alaska's North Slope. Naturally, commercial aircraft operations appear to closely follow the trend of Alaska's oil and gas industry job counts. Table 3-3 indicates a dynamic change year over year in operational activity. Just as Arctic exploration was strong between FFY10 and FFY15, historical aircraft operations follow a rather steady increase until its peak in FFY15 followed by a sharp decrease in FFY16 and FFY17, when Shell exploration ceased activity on the North Slope.<sup>11</sup> Additionally, as oil and gas employment counts show a slight uptick in FFY19, the rebound is interrupted by the Covid-19 pandemic, resulting an over 20 percent decrease in operations from FFY20 through FFY22.

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<sup>10</sup> FAA. 2023. TFMSC Help Index. <https://aspm.faa.gov/aspmhelp/index/TFMSC.html>.

<sup>11</sup> The Guardian. Shell abandons Alaska Arctic Drilling. 28 September 2015. <https://www.theguardian.com/business/2015/sep/28/shell-ceases-alaska-arctic-drilling-exploratory-well-oil-gas-disappoints>.



Table 3-3: BTS Air Carrier Statistics (Form 41) Historical Commercial Aircraft Operations, FFY02-FFY22

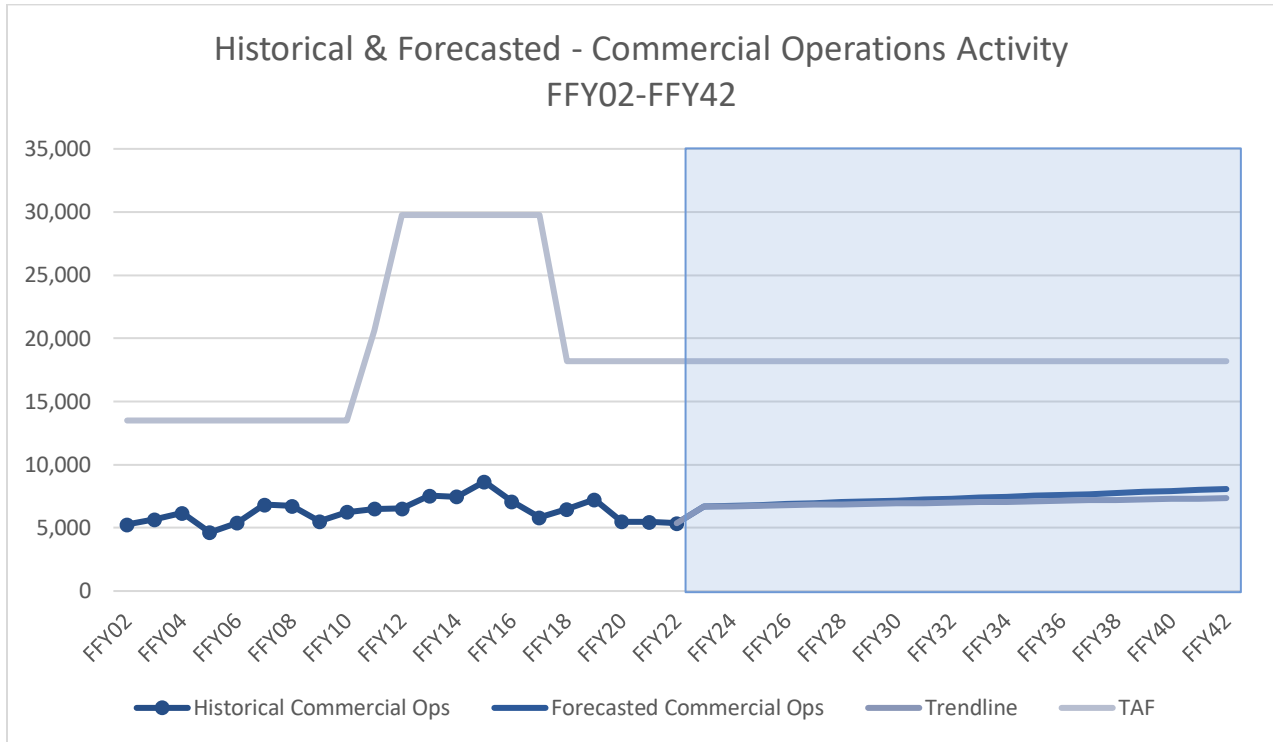
BTS Air Carrier Statistics (Form 41) Commercial Aircraft Operations SCC FFY02-FFY22		
Year	Operations	Percent Change
FFY02	3,519	-
FFY03	5,403	53.54
FFY04	5,837	8.03
FFY05	4,702	-19.44
FFY06	5,032	7.02
FFY07	6,561	30.39
FFY08	5,955	-9.24
FFY09	5,831	-2.08
FFY10	6,084	4.34
FFY11	6,200	1.91
FFY12	6,725	8.47
FFY13	7,137	6.13
FFY14	7,400	3.69
FFY15	8,414	13.70
FFY16	7,730	-8.13
FFY17	5,915	-23.48
FFY18	6,097	3.08
FFY19	6,916	13.43
FFY20	6,229	-9.93
FFY21	5,471	-12.17
FFY22	5,369	-1.86

Source: BTS Air Carrier Statistics (Form 41 traffic data), May 2023

Regardless of the dynamic fluctuations in commercial operations, the trend line in Figure 3-7 favors growth. Recent announcements of forward-phasing of projects by oil and gas companies Santos and Repsol promises the near-term creation of a combination of both temporary and permanent jobs for the coming decade.<sup>12</sup> The Pikka Project is estimated to create approximately 2,600 construction and 500 permanent jobs. Additionally, with the recent approval of CPAI’s Willow Project creation of an estimated 2,500 construction and 300 permanent jobs to Alaskans is expected as well as increased activity at SCC.<sup>13</sup>

<sup>12</sup> State of Alaska DLWD. 8 October 2022 Alaska Economic Trends Magazine. <https://live.laborstats.alaska.gov/trends-magazine/2022/October/job-projections-through-2030>.

<sup>13</sup> NPR. The Biden administration approves the controversial Willow drilling project in Alaska. 13 March 2023. <https://www.npr.org/2023/03/13/1163075377/willow-drilling-project-alaska-approved-biden>.



Source: BTS Air Carrier Statistics (Form 41 traffic data), May 2023

Figure 3-7: Historical Trend and Forecasted Commercial Aircraft Operations at SCC, FFY02-FFY42



Table 3-4 lists the forecasted operations for commercial aircraft using the forecasted growth rate projection of 5.3 percent for the short term, 3.1 percent for the medium term, and 2.1 percent for the long term, as described in Section 4.4.

Table 3-4: Airport Forecast for Commercial Aircraft Operations, FFY22-FFY42

SCC Forecast Commercial Aircraft Operations Short, Medium, and Long Term FFY22 – FFY42		
Forecast	Year	Operations
<b>Short Term</b> FFY22 – FFY27	FFY22	5,369
	FFY23	6,683
	FFY24	6,750
	FFY25	6,817
	FFY26	6,885
	FFY27	6,954
AAGR FFY22-FFY27		5.3%
<b>Medium Term</b> FFY28 – FFY32	FFY28	7,024
	FFY29	7,094
	FFY30	7,165
	FFY31	7,236
	FFY32	7,309
AAGR FFY22-FFY32		3.1%
<b>Long Term</b> FFY33 – FFY42	FFY33	7,382
	FFY34	7,456
	FFY35	7,530
	FFY36	7,606
	FFY37	7,682
	FFY38	7,758
	FFY39	7,836
	FFY40	7,914
	FFY41	7,994
	FFY42	8,073
AAGR FFY22-FFY42		2.1%

Compiled by DOWL, June 2023

### 3.5.2 Historical and Forecasted General Aviation Activity

While oil and gas companies are the primary users of commercial aircraft at SCC, GA activity data has shown a 116 percent increase in the last 10 years from FFY12 to FFY22 (Table 3-5). Much of SCC GA activity is attributed to corporate-owned aircraft associated with oil and gas development. However, because SCC is one of only two paved runways on the North Slope, it serves as a key regional hub for daily travel, shipping, and medevac air links to the surrounding regions. It is also a popular hunting and recreational destination for a small number of adventure seekers due to its proximity and access to the Gates of the Arctic National Park and the Arctic National Wildlife Refuge.



Table 3-5: FAA TFMSC Historical GA Activity, FFY02-FFY22

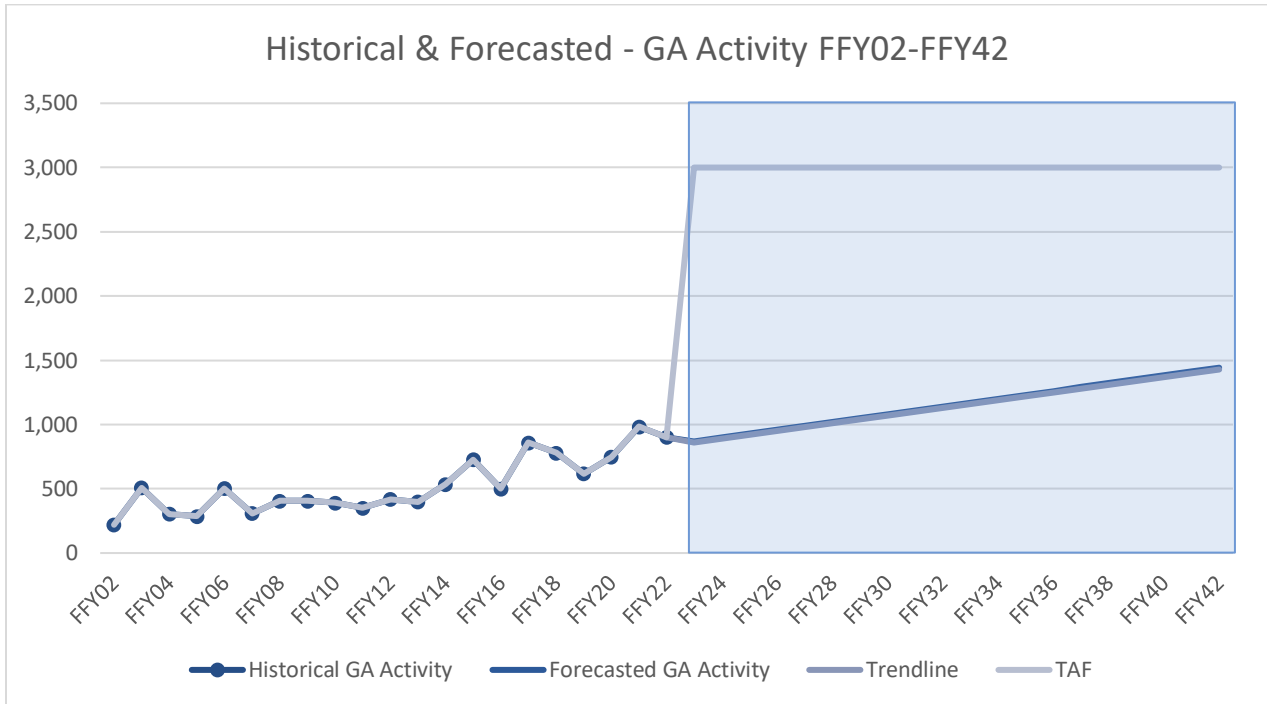
FAA Traffic Flow Management System Counts General Aviation Activity SCC FFY02-FFY22		
Year	Operations	Percent Change
FFY02	220	-
FFY03	507	130.45
FFY04	304	-40.04
FFY05	287	-5.59
FFY06	503	75.26
FFY07	309	-38.57
FFY08	406	31.39
FFY09	406	0.00
FFY10	391	-3.69
FFY11	350	-10.49
FFY12	418	19.43
FFY13	398	-4.78
FFY14	536	34.67
FFY15	726	35.45
FFY16	500	-31.13
FFY17	859	71.80
FFY18	779	-9.31
FFY19	617	-20.80
FFY20	746	20.91
FFY21	983	31.77
FFY22	902	-8.24

Source: FAA TFMSC, May 2023

GA historical trends show a steady rise over the FFY02 through FFY22 period. The reasons for the peaks and valleys in Figure 4-8 are not easily identifiable; however, in 2016 the DAC which was originally conceived to support Shell, became a vacant unfinished building.<sup>14</sup> Third-party investors saw an opportunity to provide FBO support through a multi-client, multi-user concept. Today the DAC supports Alaska Airlines, Guardian Flight, ad hoc users, GA, and corporate or charter operations providing hangar and terminal space, a medical facility, tenant housing, a dining facility, and a logistics center.<sup>15</sup>

<sup>14</sup> Alaska Business Magazine. At the End of the World. 27 January 2020. <https://www.akbizmag.com/industry/oil-gas/at-the-end-of-the-world/>.

<sup>15</sup> Ibid



Source: FAA Traffic Flow Management System Counts (TFMSC), May 2023

Figure 3-8: Historical Trend of GA Activity at SCC, 2002-2022

Table 3-6 displays the forecasted operations for GA activity using the forecasted growth rate projection of 1.9 percent for the short term and 2.4 percent for the medium and long term, as described in Section 3.4. The forecast for GA activity uses the same growth rates used for overall airport operations because of the substantial overlap of oil and gas presence in GA activity at SCC. Majority of the GA operations at SCC are corporate travel, government, scientific research, and other types of operations related to oil and gas exploration and development.



Table 3-6: Airport Forecast for GA Activity, FFY22-FFY42

SCC Forecast General Aviation Activity Short, Medium, and Long Term FFY22 - FFY42		
Forecast	Year	Operations
<b>Short Term</b> FFY22 – FFY27	FFY22	902
	FFY23	868
	FFY24	899
	FFY25	929
	FFY26	959
	FFY27	989
AAGR FFY22-FFY27		1.9%
<b>Medium Term</b> FFY28 – FFY32	FFY28	1,019
	FFY29	1,050
	FFY30	1,080
	FFY31	1,110
	FFY32	1,140
AAGR FFY22-FFY32		2.4%
<b>Long Term</b> FFY33 – FFY42	FFY33	1,170
	FFY34	1,201
	FFY35	1,231
	FFY36	1,261
	FFY37	1,291
	FFY38	1,322
	FFY39	1,352
	FFY40	1,382
	FFY41	1,412
FFY42	1,442	
AAGR FFY22-FFY42		2.4%

Compiled by DOWL, June 2023

### 3.5.3 Historical and Forecasted Military Activity

Prudhoe Bay and SCC are in a strategic location to provide the space and conditions necessary for training soldiers to operate in extreme cold-weather conditions.<sup>16</sup> Alaska’s military branches make regular use of SCC for planned scenarios using various aircraft including F-22 fighter jets and KC-135 fixed-wing aircraft and helicopters such as the CH-47 Chinook and Sikorsky HH-60/MH-60s.<sup>17</sup> In addition to training exercises, Alaska-based military personnel use SCC for civilian search and rescue and support search and rescue efforts for both the oil and gas industry and NSB (Table 3-7).

<sup>16</sup> Ibid

<sup>17</sup> Interview with Gilbert and Greenwood, USAF/US Army, 24 May 2023.



Table 3-7: FAA TFMSC Historical Military Activity, FFY02 to FFY22

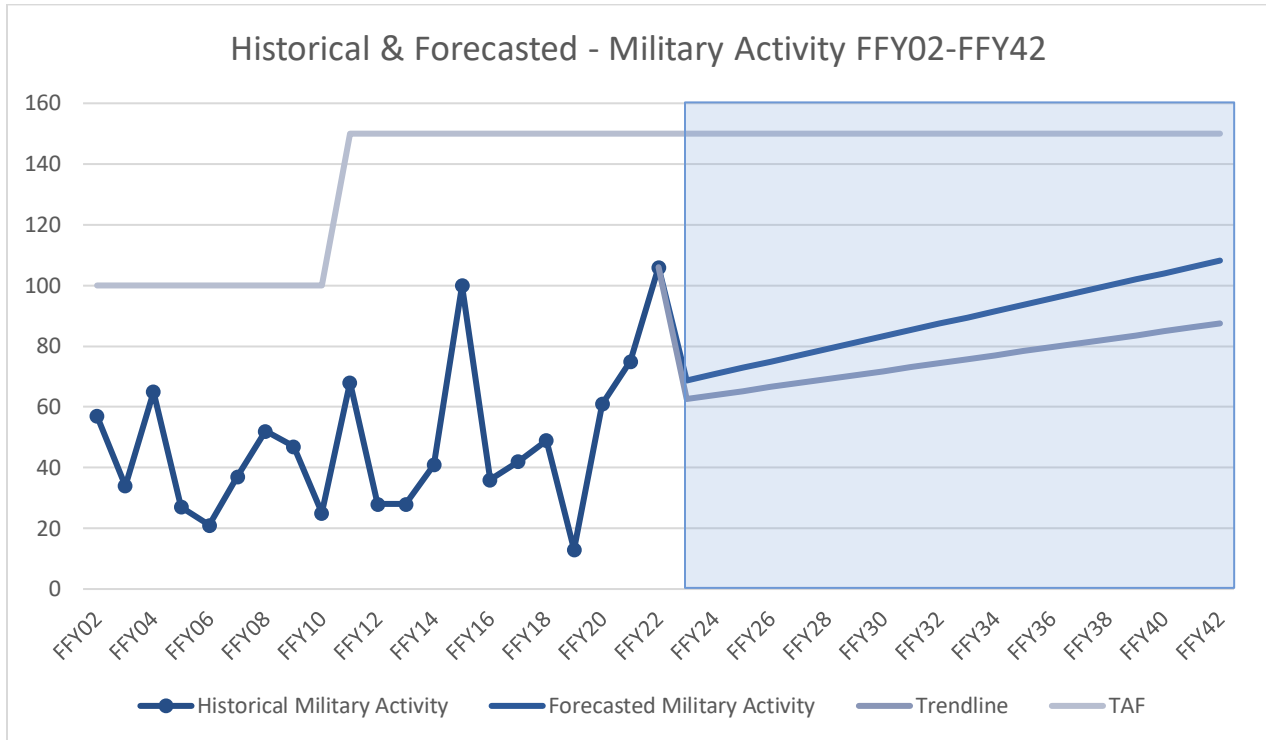
FAA Traffic Flow Management System Counts Military Operations SCC FFY02 - FFY22		
Year	Operations	Percent Change
FFY02	57	-
FFY03	35	-38.60
FFY04	38	8.57
FFY05	46	21.05
FFY06	24	-47.83
FFY07	27	12.50
FFY08	59	118.52
FFY09	45	-23.73
FFY10	27	-40.00
FFY11	63	133.33
FFY12	27	-57.14
FFY13	28	3.70
FFY14	41	46.43
FFY15	86	109.76
FFY16	54	-37.21
FFY17	45	-16.67
FFY18	48	6.67
FFY19	16	-66.67
FFY20	53	231.25
FFY21	66	24.53
FFY22	106	60.61

Source: FAA TFMSC, May 2023

Military activity at SCC is highly dependent on the military’s budget and their need for training. Figure 3-9 illustrates, some years have more demanding needs of SCC than others. The peak in FFY15 can be explained by Spartan Pegasus, a joint U.S. Army-U.S. Air Force deployment exercise designed to test the ability of the army’s paratroopers and Stryker aircraft to deploy quickly and operate in the Arctic.<sup>18</sup> More recently, a peak in FFY22 was likely caused by Arctic Edge, a three-week multi-use, multi-national exercise to test operational abilities and survivability in the Arctic.<sup>19</sup>

<sup>18</sup> Alaska Public Media. Exercise near Deadhorse to test paratrooper’s ability to operate in cold. 21 February 2017. <https://alaskapublic.org/2017/02/21/exercise-near-deadhorse-to-test-paratroopers-ability-to-operate-in-cold/>.

<sup>19</sup> Air University. Special Operations Command North: Leasing Special Operations Forces into the North American Arctic. 3 October 2022. <https://www.airuniversity.af.edu/JIPA/Display/Article/3172966/special-operations-command-north-leading-special-operations-forces-into-the-nor/>.



Source: FAA Traffic Flow Management System Counts (TFMSC), May 2023

Figure 3-9: Historical Trend and Forecasted Military Activity at SCC, FFY02 - FFY42

The Arctic is emerging as an arena for strategic competition among the global powerhouses of China, Russia, and the United States. In addition, with the ongoing changes in climate and recession of sea ice, new opportunities of natural resource extraction, new shipping routes, and expanded commercial fishing for this resource-rich environment will create a greater need for protecting national security.<sup>20</sup> Interviews with U.S. Air Force and U.S. Army representatives substantiated the desire for increased military presence in the Arctic and more specifically, at SCC, and support improvements to allow increased training and ability to respond to Northern/Arctic incidents.<sup>21</sup> Though current use falls below the military significant use threshold criteria defined by FAA Order 5190.6B (3.20.a), increased usage by government aircraft that exceeds the threshold, may be subject to charge for a reasonable share of the cost of operating and maintaining the facilities used, in proportion to the use.<sup>22</sup>

The forecast for military activity uses the same growth rates used for overall airport operations because, similarly to GA activity, there is some overlap of oil and gas industry presence and military activity at SCC by means of search and rescue support. Historical activity remains rather low and is slowly growing. While training activity appears to be increasing, no commitments have been made to invest in permanent infrastructure that would support major growth of military activity at SCC.

<sup>20</sup> Ibid

<sup>21</sup> Interview with Gilbert and Greenwood, USAF/US Army, 24 May 2023.

<sup>22</sup> FAA. Order 5190.6B Airport Compliance Manual. 15 September 2023.

[https://www.faa.gov/regulations\\_policies/orders\\_notices/index.cfm/go/document.current/documentNumber/5190.6](https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.current/documentNumber/5190.6)



Table 3-8 displays the forecasted operations for military activity using the forecasted growth rate projection of -6.2 percent for the short term, -1.9 percent for the medium term, and 0.1 percent for the long term, as described in Section 3.4.



Table 3-8: Airport Forecast for Military Activity, FFY22-FFY42

SCC Forecast Military Activity Short, Medium, and Long Term FFY22 – FFY42		
Forecast	Year	Operations
<b>Short Term FFY22 – FFY27</b>	FFY22	106
	FFY23	69
	FFY24	71
	FFY25	73
	FFY26	75
	FFY27	77
AAGR FFY22-FFY27		-6.2%
<b>Medium Term FFY28 – FFY32</b>	FFY28	79
	FFY29	81
	FFY30	83
	FFY31	85
	FFY32	87
AAGR FFY22-FFY32		-1.9%
<b>Long Term FFY33 – FFY42</b>	FFY33	89
	FFY34	92
	FFY35	94
	FFY36	96
	FFY37	98
	FFY38	100
	FFY39	102
	FFY40	104
	FFY41	106
	FFY42	108
AAGR FFY22-FFY42		0.1%

Compiled by DOWL, June 2023

### 3.5.4 Historical and Forecasted Passenger Activity

Historical passenger enplanements were collected through the FAA Air Carrier Activity Information System (ACAIS) database (Table 3-9). The ACAIS database supports the FAA airport categories for use in apportionment formula calculations under the AIP and Bipartisan Infrastructure Law programs.<sup>23</sup> As previously mentioned, much of SCC activity is driven by oil and gas industry development, this includes the majority of passenger enplanements. Since 1974 the oil and gas industry has used air transportation as the primary means of shuttling employees to and from the oil fields.<sup>24</sup>

<sup>23</sup> FAA. 2023. Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. [https://www.faa.gov/airports/planning\\_capacity/passenger\\_allcargo\\_stats/passenger](https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger).

<sup>24</sup> Deseret News. North Slope company 'bus' is a plane. 30 October 2003. <https://www.deseret.com/2003/10/21/19791184/north-slope-company-bus-is-a-plane>.



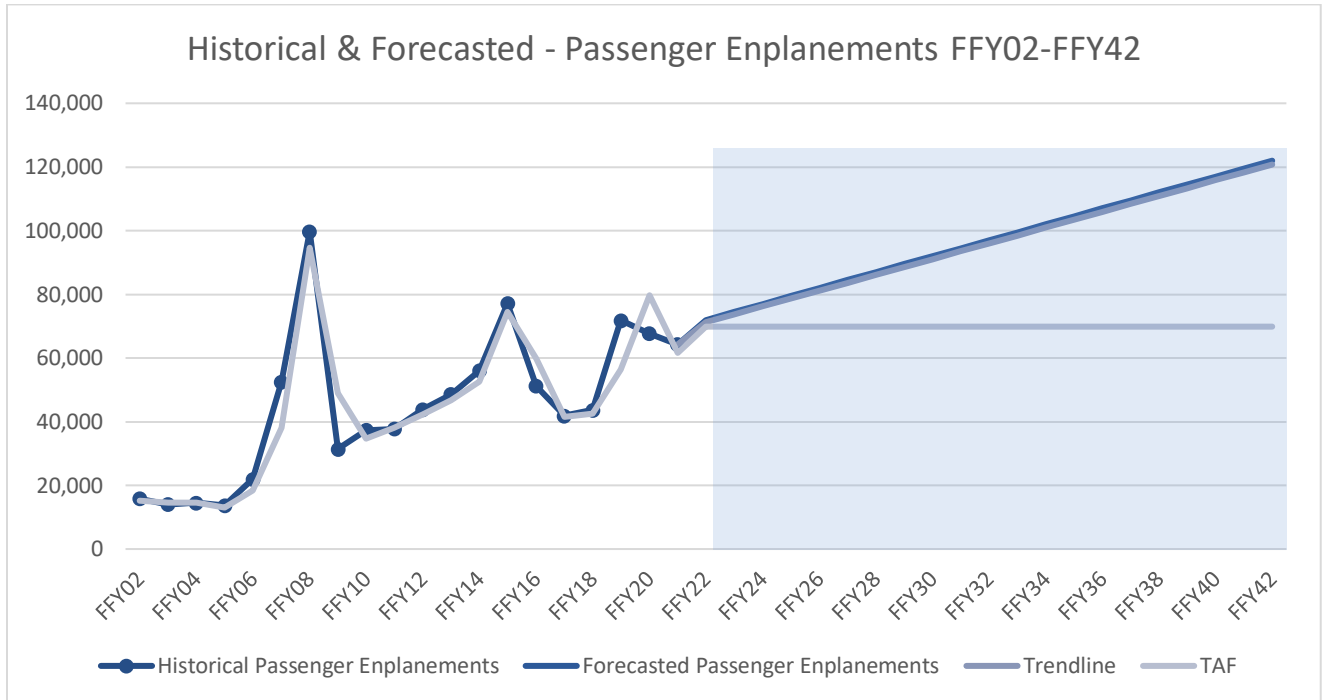
Table 3-9: FAA ACAIS Historical Passenger Enplanements, 2002-2021

FAA Passenger Boarding Data SCC Airport 2002-2022		
Year	Enplanements	Percent Change
2002	15,795	-
2003	14,033	-11.16
2004	14,507	3.38
2005	13,703	-5.54
2006	21,961	60.26
2007	52,517	139.14
2008	99,719	89.88
2009	31,395	-68.52
2010	37,319	18.87
2011	37,711	1.05
2012	43,837	16.24
2013	48,588	10.84
2014	56,001	15.26
2015	77,152	37.77
2016	51,205	-33.63
2017	41,849	-18.27
2018	43,655	4.32
2019	71,822	64.52
2020	67,676	-5.77
2021	64,245	-5.07

Source: FAA ACAIS, May 2023

Much like SCC’s other data measures, Figure 4-10 depicts dynamic change year after year with an overall positive trend. A large peak is shown in 2008 likely due to production of the oil resource named Qannik in the Alpine development area.<sup>25</sup> Similar to SCC aircraft operations, another peak is observed in 2015 when oil production was at its highest followed by the withdrawal of Shell exploration and development in 2016. Historical data shows that SCC passenger enplanements were not as heavily impacted by the Covid-19 pandemic as other airports.

<sup>25</sup> ConocoPhillips Alaska. Alaska Operations. Alpine. July 2023. <https://alaska.conocophillips.com/who-we-are/alaska-operations/alpine/>.



Source: FAA Air Carrier Activity Information System (ACAIS), published September 2022

Figure 3-10: Historical Trend and Forecasted Passenger Enplanements at SCC, 2002-FFY42

Table 3-10 lists the forecasted passenger enplanement counts using the forecasted growth rate projection of 3.3 percent for the short-term, 3.0 percent for the medium term, and 2.7 percent for the long-term, as described in Section 3.4.



Table 3-10: Airport Forecast for Passenger Enplanement, FFY22-FFY42

SCC Forecast Passenger Enplanements Short, Medium, and Long Term FFY22 – FFY42		
Forecast	Year	Operations
<b>Short Term</b> FFY22 – FFY27	FFY22	71,948
	FFY23	74,450
	FFY24	76,951
	FFY25	79,452
	FFY26	81,953
	FFY27	84,454
<i>AAGR FFY22-FFY27</i>		3.3%
<b>Medium Term</b> FFY28 – FFY32	FFY28	86,955
	FFY29	89,456
	FFY30	91,957
	FFY31	94,458
	FFY32	96,960
<i>AAGR FFY22-FFY32</i>		3.0%
<b>Long Term</b> FFY33 – FFY42	FFY33	99,461
	FFY34	101,962
	FFY35	104,463
	FFY36	106,964
	FFY37	109,465
	FFY38	111,966
	FFY39	114,467
	FFY40	116,968
	FFY41	119,469
	FFY42	121,971
<i>AAGR FFY22-FFY42</i>		2.7%

Compiled by DOWL, June 2023

### 3.5.5 Historical and Forecasted Air Cargo Activity

For Alaska’s major hub airports, air cargo became an outlier during the Covid-19 pandemic, fueling unanticipated expansion and reaching new heights in consumer demand and cargo volume. However, SCC air cargo activity did not follow the same trend. This pandemic exception, along with the historical air cargo activity depicted in Figure 4-11, gives further reason to determine that activity at SCC is also driven by Alaska’s oil and gas industry and not by other factors that are typical at most airports (e.g., population, economy).

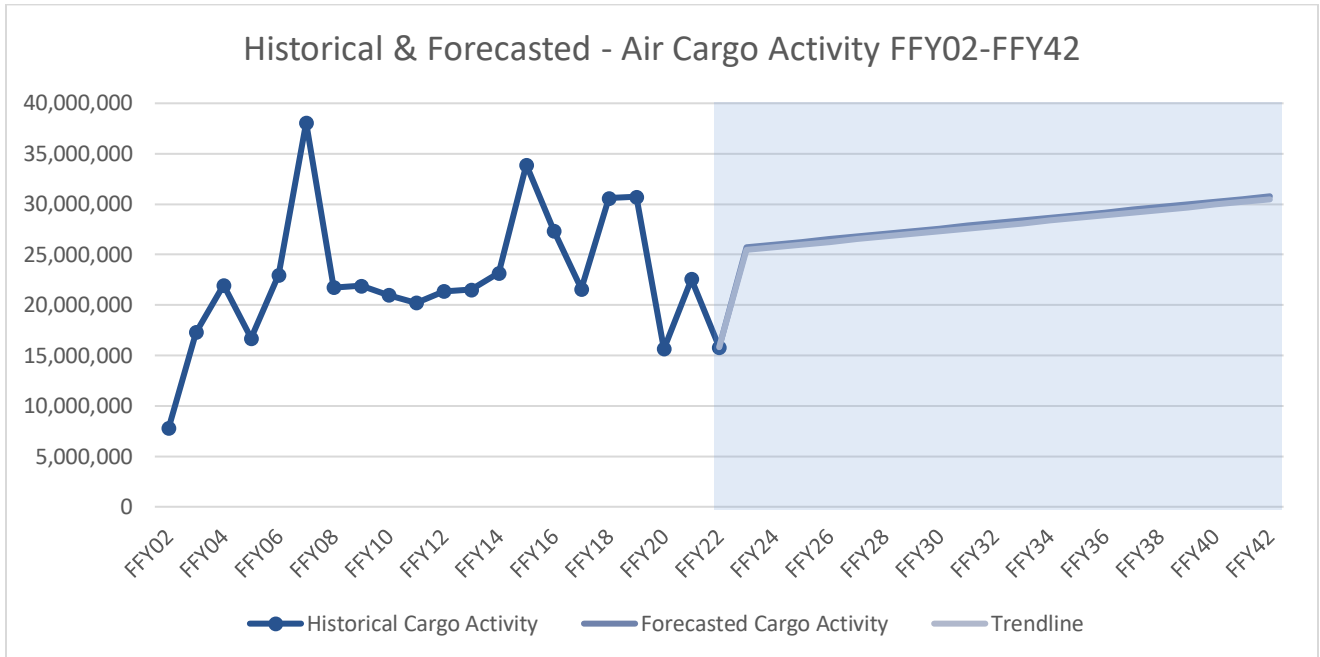


Figure 3-11: Historical Trend and Forecasted Air Cargo Activity at SCC, FFY02-FFY22

SCC air cargo activity has many of the same peaks and valleys of the other metrics previously discussed in this section (Table 3-11). The FFY07 peak is likely attributed to the ramp up of new developments at CPAI's Alpine field. The FFY15 peak is when Alaska's oil and gas production was at its strongest prior to withdrawal of Shell operations from Alaska in 2016 which correlates to the drop in FFY17.



Table 3-11: BTS Air Carrier Statistics (Form 41) Air Cargo Activity, FFY02-FFY22

BTS Air Carrier Statistics (Form 41) Air Cargo Activity SCC Airport 2002-2022		
Year	Freight (lb)*	Percent Change
FFY02	7,800,000	-
FFY03	17,310,000	188.01
FFY04	21,970,000	34.63
FFY05	16,690,000	-24.61
FFY06	22,990,000	22.42
FFY07	38,080,000	80.80
FFY08	21,750,000	-33.98
FFY09	21,910,000	-11.87
FFY10	20,980,000	5.17
FFY11	20,240,000	-9.91
FFY12	21,360,000	1.24
FFY13	21,510,000	10.19
FFY14	23,190,000	-1.14
FFY15	33,910,000	36.28
FFY16	27,360,000	3.68
FFY17	21,590,000	-33.27
FFY18	30,610,000	28.32
FFY19	30,730,000	14.07
FFY20	15,650,000	-27.59
FFY21	22,580,000	-12.65
FFY22	15,820,000	-6.14

Source: BTS Air Carrier Statistics (Form 41 traffic data), May 2023

\*Values are rounded

Table 3-12 lists the forecasted air cargo tonnage using the forecasted growth rate projection of 11.1 percent for the short term, 5.9 percent for the medium term, and 3.4 percent for the long term, as described in Section 3.4.



Table 3-12: Airport Forecast for Air Cargo Activity, FFY22-FFY42

SCC Forecast Air Cargo Activity Short, Medium, and Long Term FFY22 – FFY42		
Forecast	Year	Operations*
<b>Short Term FFY22 – FFY27</b>	FFY22	15,820,000
	FFY23	25,720,000
	FFY24	25,990,000
	FFY25	26,260,000
	FFY26	26,520,000
	FFY27	26,790,000
<i>AAGR FFY22-FFY27</i>		11.1%
<b>Medium Term FFY28 – FFY32</b>	FFY28	27,050,000
	FFY29	27,320,000
	FFY30	27,590,000
	FFY31	27,850,000
	FFY32	28,120,000
<i>AAGR FFY22-FFY32</i>		5.9%
<b>Long Term FFY33 – FFY42</b>	FFY33	28,390,000
	FFY34	28,650,000
	FFY35	28,920,000
	FFY36	29,180,000
	FFY37	29,450,000
	FFY38	29,720,000
	FFY39	29,980,000
	FFY40	30,250,000
	FFY41	30,510,000
	FFY42	30,780,000
<i>AAGR FFY22-FFY42</i>		3.4%

Compiled by DOWL, June 2023

\*Values are rounded

### 3.5.6 Historical Based Aircraft Activity

A based aircraft is an aircraft that is operational, airworthy, and is typically based at the airport for the majority of the year.<sup>26</sup> Because of the harsh weather conditions and extreme subzero temperatures of Prudhoe Bay, aircraft must be stored indoors during the winter to remain operational. At SCC, based aircraft are mainly comprised of corporate aircraft owned by oil companies. Local based aircraft at SCC is listed in Table 3-13. There was a slight increase in based aircraft at SCC between FFY12 and FFY13 the number of based aircraft has remained 10 from FFY13 to FFY22. FAA Form 5010, Airport Master Record, also indicates 10 based aircraft.

<sup>26</sup> Federal Aviation Administration. National Based Aircraft Inventory Program. Frequently Asked Questions. <https://basedaircraft.com/public/FrequentlyAskedQuestions.aspx#:~:text=2.-,What%20is%20the%20FAA's%20definition%20of%20a%20Based%20Aircraft%3F,a%20majority%20of%20the%20year.>

# Deadhorse Airport Master Plan



Table 3-13: Historical & Forecasted Based Aircraft, SCC Airport

SCC Based Aircraft Historical and Forecasted FFY02 - FFY42												
Year	FFY02	FFY03	FFY04	FFY05	FFY06	FFY07	FFY08	FFY09	FFY10	FFY11	FFY12	FFY13- FFY22
Aircraft	7	6	7	7	7	7	7	7	7	7	7	10
Year	FFY23	FFY24	FFY25	FFY26	FFY27	FFY28	FFY29	FFY30	FFY31	FFY32	FFY33	FFY34- FFY42
Aircraft	10	10	10	10	10	10	10	10	10	10	10	10

Source: FAA TAF, Issued May 2023

The airport forecast for projected local based aircraft is listed in Table 3-14. As based aircraft amounts have remained static over the last 10 years, the projected number of based aircraft is not expected to change. This projection is based on the relatively low level of GA activity at SCC, the seasonality (less than six months) of recreational or non-commercial activity, the lack of tie-down/indoor hangar availability, and the lack of permanent residents in Prudhoe Bay.

Table 3-14: Airport Forecast for Based Aircraft, FFY22-FFY42

SCC Forecast Based Aircraft Short, Medium, and Long Term FFY22 - FFY42												
Based Aircraft	Short Term Forecast						Medium Term Forecast					
	FFY22	FFY23	FFY24	FFY25	FFY26	FFY27	FFY28	FFY29	FFY30	FFY31	FFY32	
Single Engine (SE)	3	3	3	3	3	3	3	3	3	3	3	3
Multi-Engine (ME)	2	2	2	2	2	2	2	2	2	2	2	2
Jet	0	0	0	0	0	0	0	0	0	0	0	0
Helicopters	5	5	5	5	5	5	5	5	5	5	5	5
<b>Total</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
	Long Term Forecast											
	FFY33	FFY34	FFY35	FFY36	FFY37	FFY38	FFY39	FFY40	FFY41	FFY42		
Single Engine (SE)	3	3	3	3	3	3	3	3	3	3		
Multi-Engine (ME)	2	2	2	2	2	2	2	2	2	2		
Jet	0	0	0	0	0	0	0	0	0	0		
Helicopters	5	5	5	5	5	5	5	5	5	5		
<b>Total</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>		

Compiled by DOWL, May 2023



## 3.6 FY22 City-Pair Air Service and Passenger, Freight and Mail Activity by Carrier

Base year activity for FY22 were reviewed and provided using BTS T-100 Domestic Segment database for air transport activity. The data includes the following elements:

- Date of Aircraft Operation
- Origin/Destination Airport
- Air Carrier
- Aircraft Make/Model
- Passengers, Freight, and Mail

As published in the database, during FFY22, SCC was served by the following air carrier and air taxi/charter service providers:

### 3.6.1 Alaska Airlines

Alaska Airlines, the state’s largest hub airline, operates as a Part 121 air carrier and provides year-round regularly scheduled passenger, freight, charter, and mail service to SCC, using four Boeing model aircraft, the 737-700, 737-700F, 737-800, and the 737-900ER. These aircraft operate one passenger flight a day Monday through Saturday with two flights on Tuesdays and Thursdays for a total of eight flights a week. During base year FFY22, all Boeing models operated to and from Anchorage (ANC), Utqiaġvik (BRW), and Fairbanks (FAI). Alaska Airlines expects delivery of one additional 737-800 freighter and three additional passenger aircraft by the end of 2024: 737-MAX8, 737-MAX9, and 737-900ER.<sup>27</sup>

Operational data for FFY22 for these aircraft are listed in Table 3-15 through Table 3-18.

#### 3.6.1.1 Boeing 737-700

Table 3-15: FFY22 Aviation Activity, Alaska Airlines B737-700

FFY22 Aviation Activity Alaska Airlines – B737-700					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-700	472	29,796	240,781	2,368	ANC

<sup>27</sup> Interview with Craig and Lyman, Alaska Airlines, 13 March 2023.



## 3.6.1.2 Boeing 737-700F

Table 3-16: FFY22 Aviation Activity, Alaska Airlines B737-700F

FFY22 Aviation Activity Alaska Airlines – B737-700F					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-700F	279	-	3,224,296	2,831,799	ANC, BRW

## 3.6.1.3 Boeing 737-800

Table 3-17: FFY22 Aviation Activity, Alaska Airlines B737-800

FFY22 Aviation Activity Alaska Airlines – B737-800					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-800	909	92,137	170,724	1,056	ANC, FAI

## 3.6.1.4 Boeing 737-900ER

Table 3-18: FFY22 Aviation Activity, Alaska Airlines B737-900ER

FFY22 Aviation Activity Alaska Airlines – B737-900ER					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-900ER	8	773	491	0	ANC

## 3.6.2 Horizon Air

Horizon Air is the sister company of Alaska Airlines under the holding company of Alaska Air Group. Horizon Air operates as a Part 121 regional carrier with its fleet of 33 Embraer E175s. Horizon Air provided year-round scheduled and unscheduled passenger service to SCC for FFY22, using its 76-seat configuration Embraer E175. These aircraft operate two chartered flights a week on Wednesday and Friday ANC and FAI direct to SCC.

Operational data for FFY22 for this aircraft are listed in Table 3-19.

### 3.6.2.1 Embraer ERJ-175

Table 3-19: FFY22 Aviation Activity, Horizon Air ERJ-175

FFY22 Aviation Activity Horizon Air – ERJ-175					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
ERJ-175	230	12,710	100,091	955	ANC, FAI



### 3.6.3 Iliamna Air Taxi

Iliamna Air Taxi operates as a Part 135 charter service based out of Iliamna, Alaska (ILI) operating a fleet of three nine-seat Pilatus PC-12-45, one five-seat PC-12-45, one six-seat Cessna CE-207A Stationaire 8, and one six-seat Cessna CE-207 Skywagon. During base year FFY22, ILI provided non-scheduled air service to SCC using the Pilatus PC-12-45. Operational data for FFY22 for this aircraft are listed in Table 3-20.

#### 3.6.3.1 Pilatus PC-12-45

Table 3-20: FFY22 Aviation Activity, Iliamna Air Taxi PC-12-45

FFY22 Aviation Activity Iliamna Air Taxi – PC-12-45					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
PC-12-45	6	0	2,364	0	ANC, ILI

### 3.6.4 JuniPogo LLC dba 70 North Air

Junipogo LLC dba 70 North Air (70 North) operates as a Part 135 charter service based in SCC and FAI. During base year FFY22, 70 North Air provided scheduled air service to and from SCC to Nuiqsut (NUI) using a mixed fleet of the Cessna C206 and Piper PA-31 Navajo. These aircraft operate one scheduled flight a day, five days a week. Base year data also shows flag stops from SCC to Barter Island (BTI).

Operational data for FFY22 for this carrier are listed in Table 3-21 and Table 3-22.

#### 3.6.4.1 Cessna C206

Table 3-21: FFY22 Aviation Activity, 70 North Cessna C206

FFY22 Aviation Activity JuniPogo LLC dba 70 North – C206					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
C206	54	32	8,969	0	NUI, BTI

#### 3.6.4.2 Piper PA-31 Navajo

Table 3-22: FFY22 Aviation Activity, 70 North Cessna PA-31

FFY22 Aviation Activity JuniPogo LLC dba 70 North – PA-31 Navajo					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
PA-31	73	49	41,064	0	NUI, BTI



## 3.6.5 Lynden Air Cargo

Lynden Air Cargo operates as a Part 121 all-cargo airline based in Anchorage. During base year FFY22, Lynden provided on-demand freight service to SCC from Alpine (AK15), Anaktuvuk Pass (AKP), ANC, BRW, BTI, NUI, and Wainwright (AIN) using their fleet of Lockheed C-130/L-382E Hercules aircraft.

Operational data for FFY22 for this aircraft are listed in Table 3-23.

### 3.6.5.1 Lockheed C-130/L-382E Hercules

Table 3-23: FFY22 Aviation Activity, Lynden Air Cargo C-130/L-382E

FFY22 Aviation Activity Lynden Air Cargo – C-130/L-382E					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
L-382E	584	0	12,850,167	2,080,827	AK15, AIN, AKP, ANC, BRW, BTI, NUI

## 3.6.6 Maritime Helicopters, Inc.

Maritime Helicopters, Inc. (Maritime) operates as a Part 135 charter service based in Homer (HOM) and FAI). During base year FFY22, Maritime provided on-demand charter service to SCC from BRW, FAI, Galbraith Lake (GBH), Nuiqsut (NUI), Prospect Creek (PPC), and Umiat (UMT) using their fleet of Bell family helicopters as well as the AgustaWestland A-119 Koala and Viking DHC-6 Twin Otter.

Operational data for FFY22 for this carrier are as follows (Table 3-24 to Table 3-27).

### 3.6.6.1 AugustaWestland A-119 Koala

Table 3-24: FFY22 Aviation Activity, Maritime Helicopters A-119

FFY22 Aviation Activity Maritime Helicopters – A-119					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
A-119	43	36	1,350	0	BRW, GBH, PPC

### 3.6.6.2 Bell 407

Table 3-25: FFY22 Aviation Activity, Maritime Helicopters Bell 407

FFY22 Aviation Activity Maritime Helicopters – Bell 407					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
Bell 407	6	4	200	0	BRW, FAI, GBH



### 3.6.6.3 Bell 206 L4

Table 3-26: FFY22 Aviation Activity, Maritime Helicopters Bell 206 L4

FFY22 Aviation Activity Maritime Helicopters – Bell 206 L4					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
Bell 206 L4	2	0	0	0	GBH, UMT

### 3.6.6.4 Viking DHC-6 Twin Otter

Table 3-27: FFY22 Aviation Activity, Maritime Helicopters DHC-6

FFY22 Aviation Activity Maritime Helicopters – DHC-6					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
DHC-6	674	1,519	299,766	0	BRW, NUI, SCC

## 3.6.7 Northern Air Cargo, Inc.

Northern Air Cargo, Inc (NAC) operates as a Part 121 all cargo airline based in Anchorage and is Alaska’s largest all-cargo airline. During base year FFY22, NAC provided scheduled freight and mail service to SCC from ANC and BRW using two Boeing model freighters, the 737-300 and the 737-400. These aircraft operate one cargo flight per day, two days a week on Monday and Thursday with additional flights flown as needed based on customer volumes. NAC forecasts a slight increase in aircraft operations at SCC due to the CPAI Willow Project as well as U.S. Department of Defense (DOD) Arctic explorations and plans to add additional 737-400s and 737-800s aircraft.<sup>28</sup>

Operational data for FFY22 for this carrier are listed in Table 3-28 and Table 3-29.

### 3.6.7.1 Boeing 737-300

Table 3-28: FFY22 Aviation Activity, NAC B737-300

FFY22 Aviation Activity NAC – 737-300					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-300	89	0	343,318	933,381	ANC, BRW

<sup>28</sup> Interview with Garcia, Northern Air Cargo, 3 April 2023.



### 3.6.7.2 Boeing 737-400

Table 3-29: FFY22 Aviation Activity, NAC B737-400

FFY22 Aviation Activity NAC – 737-400					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
737-400	108	0	413,732	1,172,719	ANC, BRW

### 3.6.8 Northern Pacific Airways Inc. dba Ravn Alaska

Northern Pacific Airways Inc. dba Ravn Alaska (Ravn) operates as an Anchorage-based Part 121 scheduled and non-scheduled passenger air carrier with a fleet of nine De Havilland DHC8-100 Dash-8. During base year FFY22, Ravn provided non-scheduled charter service to SCC from ANC and FAI using the 37-seat Dash-8. Operational data for this carrier are listed in Table 3-30.

#### 3.6.8.1 De Havilland DHC8-100 Dash-8

Table 3-30: FFY22 Aviation Activity, Ravn Alaska DHC8-100

FFY22 Aviation Activity Ravn Alaska – DHC8-100					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
DHC8-100	8	92	0	0	ANC, FAI

### 3.6.9 Ryan Air

Ryan Air, formerly known as Arctic Transportation, operates as an Anchorage-based Part 121 scheduled freight and Part 135 non-scheduled charter service with a 20-aircraft fleet of Cessna 207, Cessna 208, CASA 212-200, Pilatus PC-12, and Saab 340 aircraft. During base year FFY22, Ryan Air provided scheduled all cargo service as well as non-schedule charter service to SCC from ANC, FAI, and Kotzebue (OTZ) using the CASA 212-200. Ryan Air was acquired by Saltchuk in 2022, a family of companies serving marine, air, and land transportation<sup>29</sup>.

Operational data for this carrier are listed in Table 3-31.

<sup>29</sup> Ryan Air Alaska. 2023. About Ryan Air. <https://ryanalaska.com/about/>.



### 3.6.9.1 CASA 212-200

Table 3-31: FFY22 Aviation Activity, Ryan Air CASA 212-200

FFY22 Aviation Activity Ryan Air – CASA 212-200					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
CASA 212-200	5	0	2,500	0	ANC, FAI, OTZ

### 3.6.10 Tatonduk Outfitters Limited dba Everts Air Alaska and Everts Air Cargo

Tatonduk Outfitters Limited dba Everts Air Alaska and Everts Air Cargo (Everts) operates as a Part 121 scheduled freight and Part 135 non-scheduled charter service with their mixed fleet Pilatus PC-12, McDonnell Douglas DC-9, and Cessna 208 Grand Caravan aircraft. During base year FFY22, Everts provided scheduled freight and non-scheduled charter service to SCC from BRW, FAI, Ivotuk (A26), OTZ, Nome (OME), Seattle (SEA), and Unalakleet (UNK). Everts anticipates delivery of a newly acquired BAE 146-300; this addition to their fleet is expected to carry bulk fuel out of SCC to various other locations to support the growing Arctic oil and gas industry.<sup>30</sup>

Operational data for this carrier are listed in Table 3-32 through Table 3-34.

#### 3.6.10.1 Pilatus PC-12

Table 3-32: FFY22 Aviation Activity, Everts Air PC-12

FFY22 Aviation Activity Everts Air – PC-12					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
PC-12	2	0	0	0	FAI

#### 3.6.10.2 McDonnell Douglas DC-9

Table 3-33: FFY22 Aviation Activity, Everts Air DC-9

FFY22 Aviation Activity Everts Air – DC-9					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
DC-9	28	0	10,822	446,019	BRW, FAI, OME, OTZ, SEA, UNK

<sup>30</sup> Interview with Ragar, Everts Air Alaska and Everts Air Cargo, 1 February 2023.



### 3.6.10.3 Cessna 208 Grand Caravan

Table 3-34: FFY22 Aviation Activity, Everts Air Cessna 208

FFY22 Aviation Activity Everts Air – C208					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
C208	4	10	0	0	FAI, A26

### 3.6.11 Warbelow’s Air Ventures, Inc.

Warbelow’s Air Ventures, Inc. (Warbelow’s) operates as a Part 135 scheduled freight and non-scheduled passenger charter service based out of Fairbanks. During base year FFY22, Warbelow’s provided non-scheduled passenger charter service using a fleet of Piper PA-31 Navajo 350 Chieftain Twins to SCC from FAI.

Operational data for this carrier are listed in Table 3-35.

#### 3.6.11.1 Piper PA-31 Navajo 350 Chieftain

Table 3-35: FFY22 Aviation Activity, Warbelow’s Air Ventures PA-31

FFY22 Aviation Activity Warbelow’s Air Ventures – PA-31					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
PA-31	61	325	0	0	FAI

### 3.6.12 Wright Air Service, Inc.

Wright Air Service, Inc. (Wright Air) operates as a Part 135 commuter airline based in Fairbanks offering scheduled and charter passenger and cargo service to Interior Alaska using a mixed fleet of Cessna 208 Grand Caravan, Piper PA-31 Navajo, and Helio Courier aircraft. During base year FFY22, Wright Air provided scheduled and non-scheduled passenger and freight service to SCC from the following locations: Allakaket (AET), AKP, Arctic Village (ARC), Atkasuk (ATK), BRW, BTI, Coldfoot (CXF), FAI, Fort Yukon (FYU), Kavik River (VIK), NUI, Point Lay (PIZ), UMT, Venetie (VEE), and Wainwright (AIN).

Operational data for this carrier are listed on Table 3-36 through Table 3-38.



### 3.6.12.1 Cessna 208 Grand Caravan

Table 3-36: FFY22 Aviation Activity, Wright Air Service Cessna 208

FFY22 Aviation Activity Wright Air Service – C208					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
C208	1,716	4,751	479,574	827,964	AET, AIN, AKP, ARC, ATK, BRW, BTI, CXF, FAI, FYU, NUI, PIZ, UMT, VEE, VIK

### 3.6.12.2 Piper PA-31 Navajo

Table 3-37: FFY22 Aviation Activity, Wright Air Service PA-31

FFY22 Aviation Activity Wright Air Service – PA-31					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
PA-31	6	5	492	1,137	FAI, NUI, UMT

### 3.6.12.3 Helio Courier

Table 3-38: FFY22 Aviation Activity, Wright Air Service Helio Courier

FFY22 Aviation Activity Wright Air Service – Helio Courier					
Aircraft	Operations	Passengers	Freight (lb)	Mail (lb)	City Pairs
Helio Courier	2	0	0	0	FAI

## 3.6.13 Aircraft Activity Summary

In summary, FFY22 total aircraft operations were 5,369, total passenger enplanements were 142,239, total freight was 18,190,701 lb, and total mail was 8,298,225 lb (Table 3-39).

# Deadhorse Airport Master Plan



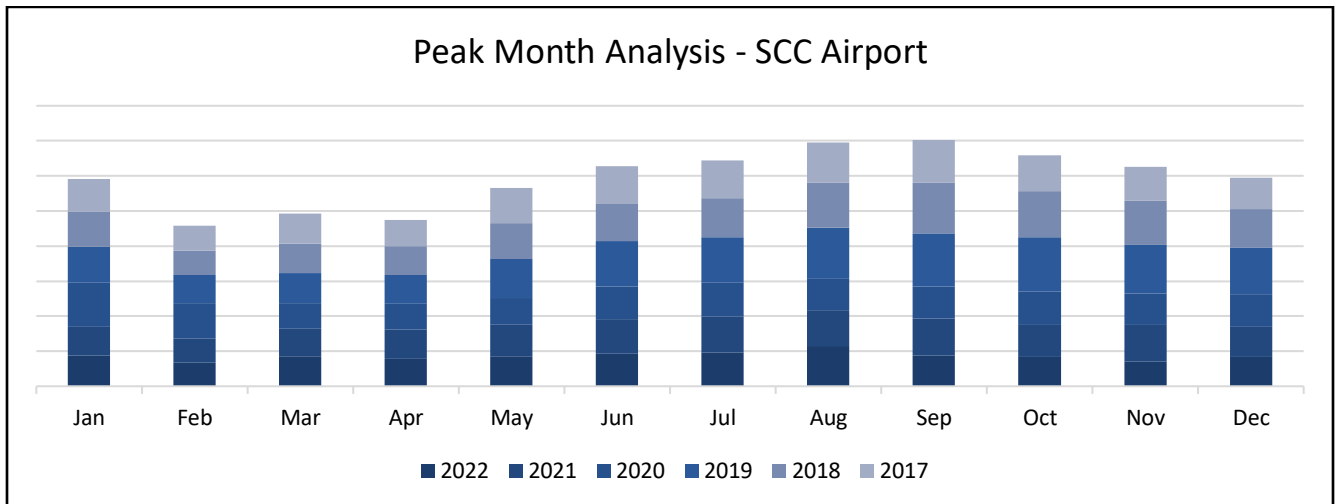
Table 3-39: BTS Form 41 FFY22 SCC Activity Summary

BTS Form 41 Traffic Data FFY22 SCC Activity Totals								
Airline	Operations		PAX Enplanements		Freight		Mail	
	Count	Rank	Count	Rank	Pounds	Rank	Pounds	Rank
Alaska Airlines	1,668	1	122,706	1	3,636,292	2	2,835,223	1
Horizon Air	230	5	12,710	2	100,091	6	955	6
Iliamna Air Taxi	6	11	0	-	2,364	10	0	-
70 North	127	7	81	7	50,033	7	0	-
Lynden Air Cargo	584	4	0	-	12,850,167	1	2,080,827	3
Maritime Helicopters	725	3	1,559	4	301,316	5	0	-
NAC	197	6	0	-	757,050	3	2,106,100	2
Ravn Alaska	8	10	92	6	0	-	0	-
Ryan Air	5	12	0	-	2,500	9	0	-
Everts	34	9	10	8	10,822	8	446,019	5
Warbelow's	61	8	325	5	0	-	0	-
Wright Air	1,724	2	4,756	3	480,066	4	829,101	4
<b>Total</b>	<b>5,369</b>		<b>142,239</b>		<b>18,190,701</b>		<b>8,298,225</b>	

Source: USDOT BTS T-100 Segment Data, 2021-2022  
Compiled by DOWL, May 2023

## 3.7 Peak Demand Analysis

An overview analysis of peak demand was conducted using the Airport Cooperative Research Program Report 25, Airport Passenger Terminal Planning and Design Guidebook. Historical data of the last five years was examined to establish which month consistently showed a peak in operations. Figure 3-12 depicts September as the Peak Month of operations for SCC.



Compiled by DOWL, July 2023  
Figure 3-12: Peak Month Analysis



## 3.8 Review of Published Forecasts

### 3.8.1 Terminal Area Forecast (TAF)

The TAF is the official FAA forecast of aviation activity for U.S. airports. Used for budgeting, staffing, and planning needs by the FAA and used by major users of the NAS, the TAF contains active airports in the NPIAS FAA-including towered airports, federal contract-towered airports, non-federal towered airports, and non-towered airports. The airport activity data in the TAF consist of the following:

- Enplanements
- Itinerant Operations
- Local Operations

Table 3-40 lists the historical TAF for a 20-year period from FFY02 to the base year FFY2022 and the projected TAF for a 20-year period to 2042.

FAA guidance requires comparison of the Airport Master Plan (AMP) forecast with that of the TAF as part of the forecast approval process. However, in Alaska the TAF is not routinely updated, and the data provided is infrequently accurate at non-towered airports. A comparison of SCC forecasted data and the FAA published TAF is discussed in Section 3.9.

# Deadhorse Airport Master Plan

Table 3-40: Terminal Area Forecast for SCC Issued February 2023

FAA FY22 Terminal Area Forecast Deadhorse Airport (SCC)											
Fiscal Year	Enplanements		Itinerant Operations (IT)					Local Operations (LOC)			Total Operations
	Air Carrier	Commuter	Air Carrier	Air Taxi & Commuter	GA	Military	IT Total	Civil	Military	LOC Total	
2002	13,419	1,696	4,000	5,000	6,000	100	15,100	4,500	0	4,500	19,600
2003	10,378	4,197	4,000	5,000	6,000	100	15,100	4,500	0	4,500	19,600
2004	8,957	5,634	4,000	5,000	6,000	100	15,100	4,500	0	4,500	19,600
2005	8,623	4,406	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2006	12,566	5,868	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2007	32,007	5,989	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2008	90,827	3,811	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2009	45,030	3,993	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2010	27,922	6,731	3,500	5,500	6,000	100	15,100	4,500	0	4,500	19,600
2011	29,190	8,809	6,944	4,576	3,000	150	14,670	9,126	0	9,126	23,796
2012	32,040	10,221	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2013	31,532	15,158	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2014	35,034	17,614	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2015	33,359	41,068	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2016	24,817	35,053	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2017	18,212	23,307	16,060	4,576	3,000	150	23,786	9,126	0	9,126	32,912
2018	30,253	12,235	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2019	49,639	6,714	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2020	76,275	3,397	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2021	59,577	2,110	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2022	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
<b>CAAGR 2002-2022</b>	<b>7.86%</b>	<b>8.70%</b>	<b>1.71%</b>	<b>-1.86%</b>	<b>-3.41%</b>	<b>2.05%</b>	<b>-1.06%</b>	<b>3.60%</b>	<b>-</b>	<b>3.60%</b>	<b>0.42%</b>
2023*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2024*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2025*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2026*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2027*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2028*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2029*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2030*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2031*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2032*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2033*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2034*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2035*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2036*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2037*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2038*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2039*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2040*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2041*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324
2042*	60,944	8,988	5,616	3,432	3,000	150	12,198	9,126	0	9,126	21,324

Source: FAA FFY 22 Terminal Area Forecast for Deadhorse Airport (SCC), Issued February 2023, Compiled by DOWL, June 2023



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# Deadhorse Airport Master Plan



## 3.8.2 Deadhorse Airport Master Plan (2012)

The previous AMP for Deadhorse airport was completed in August 2012 by the DOT&PF. Table 3-41 lists the air traffic forecast from the 2012 master plan.

Table 3-41: 2012 SCC Airport Master Plan Air Traffic Forecast

2012 Deadhorse Airport Master Plan Summary Forecast Level and Growth Rates Medium Projection									
	2008	2009	2013	2018	2028	Average Annual Compound Growth Rates (percent)			
	Base Year Level	Base Year +1 year	Base Year + 5 years	Base Year + 10 years	Base Year + 20 years	2009	2013	2018	2028
						Base Year to +1	Base Year to +5	Base Year to +10	Base Year to +20
<b>Passenger Enplanements</b>									
Air Carrier	95,967	96,723	99,808	103,803	112,278	0.8	0.8	0.8	0.8
Commuter	5,833	5,879	6,067	6,309	6,825	0.8	0.8	0.8	0.8
Total	101,800	102,602	105,875	110,112	119,103	0.8	0.8	0.8	0.8
<b>Operations</b>									
<u>Itinerant</u>									
Air Carrier	3,500	3,528	3,640	3,786	4,095	0.8	0.8	0.8	0.8
Commuter/Air Taxi	5,500	5,543	5,720	5,949	6,435	0.8	0.8	0.8	0.8
Total Commercial	9,000	9,071	9,360	9,735	10,530	0.8	0.8	0.8	0.8
General Aviation	6,000	6,047	6,240	6,489	7,019	0.8	0.8	0.8	0.8
Military	100	101	104	108	117	0.8	0.8	0.8	0.8
<u>Local</u>									
General Aviation	4,500	4,536	4,680	4,868	5,265	0.8	0.8	0.8	0.8
Military	0	0	0	0	0	0.0	0.0	0.0	0.0
Total Operations	19,600	19,754	20,385	21,200	22,932	0.8	0.8	0.8	0.8
<b>Instrument Operations</b>	9,000	9,071	9,360	9,735	10,530	0.8	0.8	0.8	0.8
<b>Peak Hour Operations</b>	20	20	21	22	23	0.0	1.0	1.0	0.7
<b>Cargo/Mail (Enplaned + Deplaned tons)</b>	15,593	15,707	16,606	16,394	17,215	0.7	0.5	0.5	0.5

Source: DOT&PF Deadhorse Airport Master Plan Update, August 2012

## 3.8.3 Alaska Aviation System Plan Forecasts

The AASP was published May 2013 by the DOT&PF and included aviation demand forecasts. Table 3-42 lists the aviation demand 20-year forecast using 2008 as the base year.



Table 3-42: AASP Summary Activity Forecast for SCC Airport, 2008

Summary Activity Forecast Deadhorse Airport (SCC)				
	2008	2015	2020	2030
Passenger Enplanements	99,720	122,599	144,261	176,068
Cargo Tonnage	15,575	16,199	18,456	24,043
Commercial Aircraft Operations	9,000	9,698	10,980	12,350
General Aviation	10,500	10,768	11,397	13,975
Military	100	100	100	100
<b>Total</b>	<b>19,600</b>	<b>20,566</b>	<b>22,477</b>	<b>26,425</b>
Based Aircraft				
Single Engine	3	3	3	4
Multi-Engine	2	2	2	2
Jet	0	0	0	0
Helicopter	2	3	3	4
Other	0	0	0	0
<b>Total</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>10</b>
Critical Aircraft Type	737-200	737-200	737-200	737-200

Source: AASP Forecast Report, June 2011

## 3.9 Economic Development

Prudhoe Bay remains the largest conventional oil field in North America; four of the nation's top 10 conventional producing oil fields are on the North Slope.<sup>31</sup> Since the discovery of the Prudhoe Bay oil field, more than 18 billion barrels of oil have been produced and with estimates of 40 to 50 billion barrels of conventional oil remaining to be developed.<sup>32</sup> New developments by oil and gas companies such as CPAI, Repsol, Santos, and Armstrong Oil & Gas, Inc. bring promising projections of adding hundreds of thousands of barrels per day of new oil into TAPS with commensurate economic benefits across the state.<sup>33</sup> While these developments offer tremendous potential to Alaska, they are still contingent on final investment decisions and commitments of billions of dollars of investment on the part of oil and gas producers.<sup>34</sup>

### 3.9.1 Santos and Repsol Pikka Field Development

Located east of the National Petroleum Reserve in Alaska (NPR-A) Pikka field is one of the most recently approved oil developments on Alaska's North Slope. With 80,000 barrels of oil daily expected to begin flowing in 2026, Pikka development will create an estimated 2,600

<sup>31</sup> Resource Development Council. 2023. Alaska's Oil and Gas Industry. <https://www.akrdc.org/oil-and-gas>.

<sup>32</sup> Ibid

<sup>33</sup> Ibid

<sup>34</sup> Ibid



construction jobs and 500 permanent jobs to the state.<sup>35</sup> With final approval in 2022, the Pikka project is currently in the construction stage of Phase 1 of development which involves drilling 45 wells from a single well pad.<sup>36</sup>

### 3.9.2 CPAI Willow Project

CPAI, Alaska's largest crude oil producer, announced in March 2023, a U.S. Department of the Interior Record of Decision on the Willow Project, allowing three drill pads to be constructed in the Bear Tooth Unit, in the northeast portion of the NPR-A<sup>37</sup>. This project, which initially began in January 2017, is expected to create 2,500 construction jobs and 300 permanent jobs.

### 3.9.3 U.S. Army – Regaining Arctic Dominance

The Arctic has the potential to become a contested space where United States' great power rivals, Russia and China, seek to use military and economic power to gain and maintain access to the region at the expense of U.S. interests.<sup>38</sup> There are four drivers of power competition in the Arctic: military developments, energy resources and minerals, transportation, and food security. U.S. Army headquarters calls for increased cold-weather and high-altitude dominance in the Arctic. Alaska-based U.S. Army and U.S. Air Force forces have interest in enhanced military training activity and ability to respond to a Northern/Arctic military incident.<sup>39</sup> Current military operations at SCC are putting strain on the airfield and congressional support is needed for funding to make improvements to SCC to meet the needs of Regaining Arctic Dominance.<sup>40</sup>

## 3.10 Identification of Critical Aircraft

Critical aircraft, as stated in AC 150/5000-17, is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is set at 500+ annual operations, including both itinerant and local operations, but excluding touch-and-go operations. An operation is either a takeoff or a landing.

The critical aircraft determination is an important aspect of airport planning and design. It sets dimensional requirements on an airport, such as the separation distance between taxiways and runways, and the size of certain areas protecting the safety of aircraft operations and passengers. An accurate critical aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investments in airport facilities.

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<sup>35</sup> Alaska Daily News. Oil companies say they'll move ahead to develop giant Pikka oil project on Alaska's North Slope. 16 August 2022. <https://www.adn.com/business-economy/energy/2022/08/16/oil-companies-say-theyll-move-ahead-to-develop-giant-pikka-oil-project-on-alaskas-north-slope/>.

<sup>36</sup> Offshore Technology. April 2023. Oil & Gas Field Profile: Pikka Unit. <https://www.offshore-technology.com/marketdata/oil-gas-field-profile-pikka-unit-nanushuk-conventional-oil-field-us/>.

<sup>37</sup> ConocoPhillips. 2023. ConocoPhillips Welcomes Record of Decision on the Willow Project. <https://static.conocophillips.com/files/resources/nr-corp-willow-alt-e-rod-approved-03-12-23.pdf>.

<sup>38</sup> Department of the Army, Headquarters. The U.S. Army in the Arctic. 19 January 2021. Regaining Arctic Dominance. <https://api.army.mil/e2/c/downloads/2021/03/15/9944046e/regaining-arctic-dominance-us-army-in-the-arctic-19-january-2021-unclassified.pdf>.

<sup>39</sup> Interview with Gilbert and Greenwood, USAF/US Army, 24 May 2023.

<sup>40</sup> Ibid

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Identification and determination of the FFY22 base year critical aircraft was accomplished through inspection and use of the federal fiscal year operations activity reported to BTS Form 41 traffic data for SCC as well as the third-party General Audio Recording Device (GARD) Data provided by Invisible Intelligence's CTAF based data recording technology. Table 3-43 lists the make and model of each reported aircraft operation at SCC along with the AAC, ADG, Taxiway Design Group (TDG), and respective number of annual operations.

Table 3-43: FFY22 Current Fleet Mix at SCC Airport

FFY22 Current Fleet Mix SCC Airport							
Aircraft	AAC	ADG	TDG	Commercial Operations	Military Operations	GA Operations	Total Operations
208 Grand Caravan	A	II	1A	1,720	-	9	1,729
A-119 Koala	-	-	-	43	-	-	43
AC90 Commander	B	I	-	-	-	2	2
B350 Super King Air	B	II	2	-	-	10	10
B737-300	C	III	3	89	-	-	89
B737-400	C	III	3	108	-	-	108
B737-700	C	III	3	472	1	-	473
B737-700F	C	III	3	279	-	-	279
B737-800	D	III	3	909	-	-	909
B737-900ER	C	III	3	8	-	-	8
BE20 Super King	B	II	2	-	22	236	258
BE30 Super King Air	B	II	2	-	-	2	2
Bell UH-1 B212	-	-	-	-	-	33	33
Bht 206 L4 LR	-	-	-	2	-	-	2
Bht 407	-	-	-	6	-	-	6
C130 Hercules	C	IV	-	-	16	-	16
C17 Globemaster 3	B	IV	-	-	5	-	5
C206	A	I	1A	54	-	-	54
C207	B	III	-	-	-	36	36
Casa C212 Aviocar	A	II	-	5	1	1	7
C25A Citation	B	I	1A	-	-	4	4
C441 Conquest	B	II	-	-	-	12	12
C525 Citation	B	I	1A	-	-	2	2
C560 Citation V	B	II	-	-	-	4	4
CH-47 Chinook	-	-	-	-	3	-	3
DC-9-30	C	III	-	28	-	-	28
DC3T Basler Turbo 67	-	-	-	-	-	1	1
DCH3	-	-	-	-	-	1	1
DHC-6 Twin Otter	A	II	1A	674	-	21	695
DHC-8	B	III	3	8	-	-	8
Dornier D228	-	-	-	-	-	4	4

# Deadhorse Airport Master Plan



FFY22 Current Fleet Mix SCC Airport							
Aircraft	AAC	ADG	TDG	Commercial Operations	Military Operations	GA Operations	Total Operations
Dornier D328	B	II	-	-	4	-	4
ERJ-175	C	III	3	230	-	-	230
F-16 Fighting Falcon	D	I	-	-	1	-	1
F2TH Falcon 2000	B	II	1B	-	-	4	4
Gulfstream G280	C	II	1B	-	-	56	56
Gulfstream IV/G400	D	II	2	-	-	2	2
Gulfstream V/G500	D	III	2	-	8	6	14
Helio Courier	-	-	-	2	-	-	2
IAI Astra 1125	C	II	1B	-	-	2	2
KODI Quest Kodiak	A	I	-	-	-	1	1
LJ45 Learjet	C	I	-	-	-	4	4
Lockheed C-130/L-382E	C	IV	-	584	-	-	584
Mooney M-20C Ranger	A	I	-	-	-	4	4
P46T Piper Malibu Meridian	A	I	-	-	-	9	9
PA-31 Navajo	B	I	-	79	-	325	404
PA31-350 Navajo	B	I	-	61	-	-	61
Partenavia P68 Victor	-	-	-	-	-	2	2
Pilatus PC-12	A	II	1A	8	43	81	132
Pilatus PC-24	-	-	-	-	-	12	12
SH-60 Seahawk	-	-	-	-	2	-	2
Sikorsky S-92	-	-	-	-	-	14	14
Socata TBM9	A	I	-	-	-	2	2
<b>Total</b>				<b>5,369</b>	<b>106</b>	<b>902</b>	<b>6,377</b>

Source: FAA Characteristics Database, February 2023

For critical aircraft determination the most demanding aircraft operational and physical characteristics are examined, demanding in this instance meaning the largest and/or fastest aircraft. Table 3-44 groups base year activity by these characteristics and presents not only the most frequent aircraft user types, but also the most demanding. Though almost half of base year operations were performed by aircraft with an airport reference code (ARC) of A-II, the most demanding aircraft with over 500 operations were that of both Alaska's Boeing 737-800 with an ARC of D-III and Lynden's Lockheed C-130/L-382E Hercules with an ARC of C-IV.

# Deadhorse Airport Master Plan



Table 3-44: FFY22 Base Year Aircraft Activity by Operational and Physical Characteristics

FFY22 Aircraft Activity by Operational and Physical Characteristics		
Aircraft Approach Category	Operations	Percent
A	2,633	41
B	816	13
C	1,877	29
<b>D</b>	<b>926</b>	<b>15</b>
-	125	2
Total	6,377	100
Airplane Design Group	Operations	Percent
I	548	9
II	2,917	46
III	2,182	34
<b>IV</b>	<b>605</b>	<b>9</b>
-	125	2
Total	6,377	100

Source: FAA Characteristics Database, February 2023

The previously approved 2019 ALP identifies these two aircraft as runway 6/24's critical aircraft. BTS Form 41 traffic data supports that these aircraft remain the critical aircraft.

Current 2023-year data was gathered using Invisible Intelligence's General Audio Recording Device (GARD) system which monitors Unicom frequencies to provide real time air traffic reporting. The GARD system was implemented at SCC to monitor air traffic over a five-month span, January through May. Table 3-45 lists the operations recorded during this timeframe.

Table 3-45: Invisible Intelligence GARD Data January – May 2023 Fleet Mix

Invisible Intelligence GARD Data January - May 2023 Current Fleet Mix SCC Airport					
Manufacturer	Model	AAC	ADG	Operations	Percent of Operations
Boeing	737-790	C	III	180	9.0
	737-890	D	III	257	12.8
	737-8FH	D	III	9	0.4
	737-900ER	C	III	8	0.4
	737-990ER	C	III	3	0.1
CASA	C212-DF	A	II	8	0.4
Cessna	150	A	I	5	0.2
	180	A	I	1	0.0
	441	B	II	6	0.3
	208B	A	II	425	21.1
	O2-A	-	-	7	0.3
	P210N	A	I	14	0.7

# Deadhorse Airport Master Plan



Invisible Intelligence GARD Data January - May 2023 Current Fleet Mix SCC Airport					
Manufacturer	Model	AAC	ADG	Operations	Percent of Operations
	T207A	A	I	248	12.3
	TU206G	A	I	4	0.2
Curtiss-Robertson	4C-1A	-	-	10	0.5
Curtiss-Wright	C-46F	-	-	2	0.1
DeHavilland	Beaver DHC-2	A	I	6	0.3
	DHC-8-106	B	III	34	1.7
Diamond Aircraft Ind Inc	DA20-C1	A	I	11	0.5
Douglas	DC-6A	B	III	3	0.1
	DC-6B	B	III	13	0.6
Embraer	EMB-110P1	B	II	31	1.5
	ERJ 170-200 LR	C	III	59	2.9
Ernst, Robert	PITTS S2E	-	-	2	0.1
Eurocopter	AS 350 B2	-	-	13	0.6
Gill, John	Sonex Waix	-	-	11	0.5
Learjet Inc	LJ45	C	I	15	0.7
Lockheed	L382 Hercules	C	IV	8	0.4
Moonlina Inc.	Vans RV-7	-	-	2	0.1
Pilatus	PC-12/47	A	II	8	0.4
	PC-12/47E	A	II	2	0.1
Piper	J3C-65	A	I	18	0.9
	PA-28-161	A	I	51	2.5
	PA-31-350	B	I	228	11.3
Raytheon Aircraft Co.	B200	-	-	76	3.8
Robinson Helicopter	R66	-	-	4	0.2
Rockwell International	690B	B	I	4	0.2
	NA-265-65	-	-	4	0.2
Sikorsky	S-92A	-	-	3	0.1
Viking Air Limited	DHC-6-400	-	-	8	0.4
Vulcanair	P68C	-	-	20	1.0
Operations recorded with no make and model				190	9.4
Total				2,011	100.0

Source: Invisible Intelligence GARD, June 2023

Invisible Intelligence's GARD data shows that between January and May of 2023, the Cessna 208 remained the most frequent user at SCC while the Boeing 737-800 series and the Lockheed L382 Hercules remained to be the most demanding aircraft. Table 3-46 groups the GARD data into operational and physical characteristics.



Table 3-46: Operational and Physical Characteristics GARD Data, January – May 2023

January - May 2023 GARD Data Aircraft Activity by Operational and Physical Characteristics			
Aircraft Approach Category	Operations	Fiscal Year Estimate Adjustment	Percent
A	801	1,266	40
B	319	504	16
C	273	431	14
D	266	420	13
-	352	556	18
Total	2,011	3,177	100
Airplane Design Group	Operations	Fiscal Year Estimate Adjustment	Percent
I	605	956	30
II	480	758	24
III	566	894	28
IV	8	13	0
-	352	556	18
Total	2,011	3,177	100

Source: Invisible Intelligence GARD, June 2023

Operational totals for the five-month monitoring period were adjusted to give an estimated annual operations count. Though the operational estimate shows a substantial reduction in operational counts from FFY22, it is notable that this data was recorded over the non-peak season, per Figure 3-12 Peak Month Analysis. Additionally, an increase in activity is forecasted to begin this winter (2024) as discussed in previous sections. As increased oilfield exploration is projected, as is an increase in operational counts for the L382 Hercules. Due to its size, it remains the only aircraft that can carry large, oversized freight by air.

Employee transport is accomplished mostly by Alaska Airline’s regularly scheduled and chartered flights. Continued use of the 737-800 series aircraft is expected. Alaska Airlines predicts adding additional 737-MAX8 and 737-MAX10 aircraft to their fleet mix. Both these aircraft have an ARC of D-III<sup>41</sup>. SCC’s Runway 6/24’s existing ARC as defined by the Airport Layout Plan (ALP) is D-IV; due to no significant future changes in fleet mix, this forecast projects future critical aircraft to remain at D-IV.

<sup>41</sup> Interview with Craig, Alaska Airlines, 3 July 2023.



## 3.11 TAF Forecast Comparison

FAA’s Advisory Circular 150/5070B, Airport Master Plans, states the general requirement of FAA approval of a master plan forecast is to ensure acceptable forecasting analysis and consistency with the TAF. Any significant differences are to be investigated, explained, and documented within the report. Master plan forecasts for total operations, total enplanements, and based aircraft are considered to be consistent with the TAF if they meet the following criteria:

- Forecasts differ by less than 10 percent in the five-year forecast period.
- Forecasts differ by less than 15 percent in the ten-year forecast period.

It is generally common to have inconsistencies between the TAF and forecasts developed for non-towered airports. The TAF for SCC was developed using current FAA Form 5010 data for operations and based aircraft. This data is notoriously unreliable at non-towered airports because of the difficulty to keep up to date. SCC’s Master Record shows operations last updated in 2019. This data is now several years old and grossly overestimates local and itinerant operations as is evident in the data collected by GARD. Due to the nature of how the TAF is developed, and the efforts taken to determine accurate current operations at SCC airport, the data within the TAF should be regarded as unreliable and out of date.

The SCC airport forecast and TAF data is provided for comparison in Table 3-47. Fields in bold font denote a difference within acceptable limits and fields that are underlined denote differences that are not within acceptable limits.

Table 3-47: SCC Airport Forecast & FAA TAF Comparison

SCC Airport Forecast & FAA TAF Comparison				
	FFY	Airport Forecast	TAF	AF/TAF Percent Difference
<b>Enplanements</b>	FFY22	71,948	69,932	3
	FFY27	84,454	69,932	<u>21</u>
	FFY32	96,960	69,932	<u>39</u>
	FFY42	121,971	69,932	74
<b>Total Operations</b>	FFY22	6,377	21,324	-70
	FFY27	8,020	21,324	<u>-62</u>
	FFY32	8,537	21,324	<u>-60</u>
	FFY42	9,624	21,324	-55
<b>Based Aircraft</b>	FFY22	10	10	0
	FFY27	10	10	<b>0</b>
	FFY32	10	10	<b>0</b>
	FFY42	10	10	0

Compiled by DOWL, June 2023



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