

NORTHWEST ALASKA TRANSPORTATION PLAN

AVIATION: CONDITIONS, ISSUES, AND TRENDS

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TABLE OF CONTENTS

1	Executive Summary.....	1
2	Introduction	1
2.1	Methodology	3
3	Airports by Type and Volume of Traffic.....	4
4	Hub-and-Spokes Patterns and Traffic	7
4.1	Galena.....	7
4.2	Unalakleet.....	8
4.3	Nome	9
4.4	Kotzebue.....	10
4.5	Utqiagvik.....	11
4.6	Deadhorse.....	12
4.7	Fairbanks.....	13
4.8	Anchorage.....	14
4.9	Bypass Mail Hubs.....	15
5	Airports by Level of Service	16
5.1	Primary Airports	16
5.2	Commercial Service Airports	17
5.3	General Aviation Airports	18
5.4	Other Airports.....	19
6	Public Aviation Facilities and Characteristics	19
6.1	Condition, Compliance, and Capacity Issues	21
7	Air Carrier Fleet Serving Northwest Alaska.....	24
7.1	Critical Aircraft.....	26
8	Private Airport Facilities in Northwest Alaska	26
9	Intermodal Connections	27
9.1	Road Connections.....	27
9.2	Marine/Riverine Connections.....	28
9.3	Intermodal Transshipment.....	28
10	Airport Maintenance and Operations Financial Data	28
11	Security Systems	30
11.1	Passenger Screening.....	30
11.2	Fencing.....	30
12	Regional Aviation Needs	30
13	Plans for Aviation Infrastructure.....	31
14	Index of Studies and Sources	32
14.1	Documents and Websites.....	32
14.2	Interviews	32

14.2.1	Public Airport Managers.....	32
14.2.2	Air Carriers/Air Taxis/Medevac Companies	33
14.2.3	Miscellaneous:.....	33
15	Abbreviations	34
16	Glossary.....	35

FIGURES

Figure 1 - Study Area and Subregions.....	2
Figure 2 - Airports with >1,000 Air Carrier Operations.....	4
Figure 3 - Airports with >1,000 Air Taxi Operations	4
Figure 4 - Airports with >1,000 Local GA Operations	5
Figure 5 - Airports with >1,000 Itinerant GA Operations.....	5
Figure 6 - Airports with >200 Military Operations.....	6
Figure 7 - Routes from Galena	7
Figure 8 - Routes from Unalakleet.....	8
Figure 9 - Routes from Nome.....	9
Figure 10 - Routes from Kotzebue	10
Figure 11 - Routes from Utqiagvik	11
Figure 12 - Routes from Deadhorse.....	12
Figure 13 - Routes from Fairbanks.....	13
Figure 14 - Routes from Anchorage.....	14
Figure 15 - Runways >4,000 feet	19
Figure 16 - Runways with Asphalt Surfaces	20
Figure 17 - Airports with <90% Wind Coverage on the Primary Runway	21
Figure 18 - Airports with Non-Compliant Runway Protection Zones for Property Control.....	22
Figure 19 - Airports with Non-Compliant Runway Protection Zones for Land Use	22

TABLES

Table 1 - Airports by Subregion and Hub.....	3
Table 2 - Air Traffic from Galena, 2017	7
Table 3 - Air Traffic from Unalakleet, 2017.....	8
Table 4 - Air Traffic from Nome	9
Table 5 - Air Traffic from Kotzebue.....	10
Table 6 - Air Traffic from Utqiagvik.....	11
Table 7 - Air Traffic from Deadhorse.....	12
Table 8 - Air Traffic from Fairbanks.....	13
Table 9 - Air Traffic from Anchorage.....	14
Table 10 - Bypass Mail Hubs	15
Table 11 - Airport Level of Service	16
Table 12 - Primary Airports.....	16
Table 13 - Commercial Service Airports.....	17
Table 14 - General Aviation Airports.....	18

Table 15 - Other Airports	19
Table 16 – Historic Air Carrier Fleet Operating in Northwest Alaska.....	24
Table 17 - Aircraft Operating in Northwest Alaska	25
Table 18 - Critical Aircraft by Airport	26
Table 19 - Private Airfields in the Region.....	26
Table 20 - DOT&PF Airport M&O Expenses and Revenues by Airport, FY2018.....	29
Table 21 - Air Carrier-Identified Airport Needs.....	31

APPENDICES

Appendix A – Detailed Facility Inventories

1 EXECUTIVE SUMMARY

This report outlines the current aviation system in northwest Alaska, including:

- Air traffic volumes and routes
- Aircraft serving the region
- Airport conditions
- Financial data
- Intermodal connection points

Data came from federal databases, state agencies, local and regional plans, aviation plans, and interviews with stakeholders. Issues identified include all aspects of aviation – from runway condition to navigational aids (navaids) to landside facilities.

Tables containing detailed information for each of the airports evaluated in this report are presented in the appendix.

2 INTRODUCTION

Aviation is critical to the transport of people and goods to, from, and within Northwest Alaska. With 54 communities in the region and only six of them on the contiguous road system, aviation provides a year-round connection between Northwest Alaska and the rest of the state.

When community names differ from the airport name, this report defers to the community's name.

Most of the communities receive scheduled Air Carrier service for movement of passengers, freight, and mail, as well as on-demand Air Taxi service. Non-commercial air traffic includes General Aviation (GA) and military activity. According to FAA Airport Master Records' estimates, GA activity in the region represents less than 40% of total operations and local GA traffic represents about 35% of total GA operations. A small amount of military traffic operates in the region.



The Northwest Alaska region consists of four subregions - North Slope Borough; Northwest Arctic Borough; Seward Peninsula; and Middle Yukon River (Figure 1).



Figure 1 - Study Area and Subregions

There are six hub airports in the region, including three primary hubs (Nome, Kotzebue, and Utqiagvik [Barrow]), two secondary hubs (Galena and Unalakleet), and Deadhorse, which serves as an informal hub for oilfield activity. Fairbanks serves as an out-of-region hub for some communities, and all the hubs are accessed from Anchorage. The hub-and-spoke structure does not strictly follow subregional boundaries. Table 1 presents the region's hub-and-spoke structures.

Table 1 - Airports by Subregion and Hub

Subregion	Hub	Communities Served
Middle Yukon River	Galena	Huslia ¹ , Kaltag, Koyukuk, Nulato ¹ , Ruby ¹
Middle Yukon River	Fairbanks	Allakaket, Anaktuvuk Pass, Barter Island/Kaktovik ¹ , Bettles, Chandalar Camp, Dahl Creek, Galbraith Lake, Hughes, Huslia ¹ , Manley, Minto, Nenana, Nulato ¹ , Rampart, Ruby ¹ , Tanana, Umiat
Seward Peninsula	Unalakleet	Koyuk ¹ , Shaktoolik ¹ , St. Michael ¹ , Stebbins ¹
Seward Peninsula	Nome	Brevig Mission, Diomed, Elim, Gambell, Golovin, Koyuk ¹ , Savoonga, Shaktoolik ¹ , Shishmaref, St. Michael ¹ , Stebbins ¹ , Teller, Wales, White Mountain
Northwest Arctic Borough	Kotzebue	Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Point Hope, Selawik, Shungnak
North Slope Borough	Utqiagvik (Barrow)	Atkasuk, Nuiqsut ¹ , Point Lay, Wainwright
North Slope Borough	Deadhorse	Barter Island/Kaktovik ¹ , Nuiqsut ¹

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

Flights between communities, while generally following schedules and predetermined routes, can change according to demand for service, weather, and other factors. In general, Air Carrier flights that occurred fewer than 10 times in 2017 were not included in the hub-and-spoke groupings in Table 1. Also, any airport that gets substantial Air Carrier traffic (100 or more flights per year) from more than one hub was included in both hubs' data. Fairbanks is shown as an out-of-region hub because several of the region's airports receive all or most of their Air Carrier traffic from Fairbanks. Many communities in the region get occasional flights from Anchorage, but we are only considering flights between Anchorage and the six hubs in this report.

2.1 Methodology

Much of the commercial air traffic data presented in this report was developed from U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics, Air Carrier Statistics reports. All Air Carriers providing scheduled service are required to report for this database. The USDOT Air Carrier data only includes reporting from Air Taxis that provide scheduled service to one or more communities, so many Air Taxis are exempt from reporting their traffic. Therefore, commercial air traffic is underreported in this data. Estimates of Air Taxi operations are developed from other data sources and summarized in Section 5 of this report, with detailed estimates in the appendix. Without Air Taxi traffic data, regional commercial traffic is underreported, and routing for Air Taxi traffic is impossible to determine.

Route data is reported only for:

1. Substantial traffic between communities within this region (intra-regional)
2. Between communities and Anchorage or Fairbanks (inter-regional)

There may be some Air Carrier traffic that was low volume and/or infrequent; that traffic is not included. FAA Airport Master Records, also known as 5010 forms, provided information (e.g., based aircraft) for individual airports. A list of acronyms in Section 15 and glossary in Section 16 are included for reference.

¹ Communities with service from two hubs

3 AIRPORTS BY TYPE AND VOLUME OF TRAFFIC

The following maps highlight air traffic volumes and types of air traffic throughout the region. Establishing these metrics is important for developing an aviation demand forecast. Table 1.1 in Appendix 1 presents based aircraft and annual aircraft operations. This data represents inspections and counts performed between 2014 and 2018.

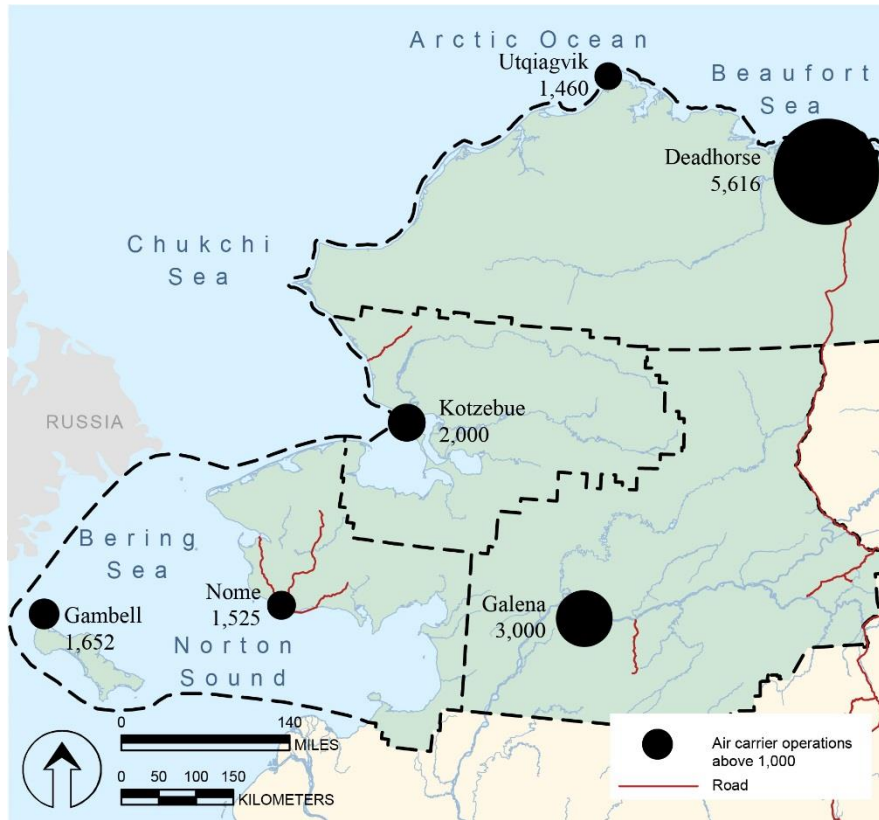


Figure 2 - Airports with >1,000 Air Carrier Operations

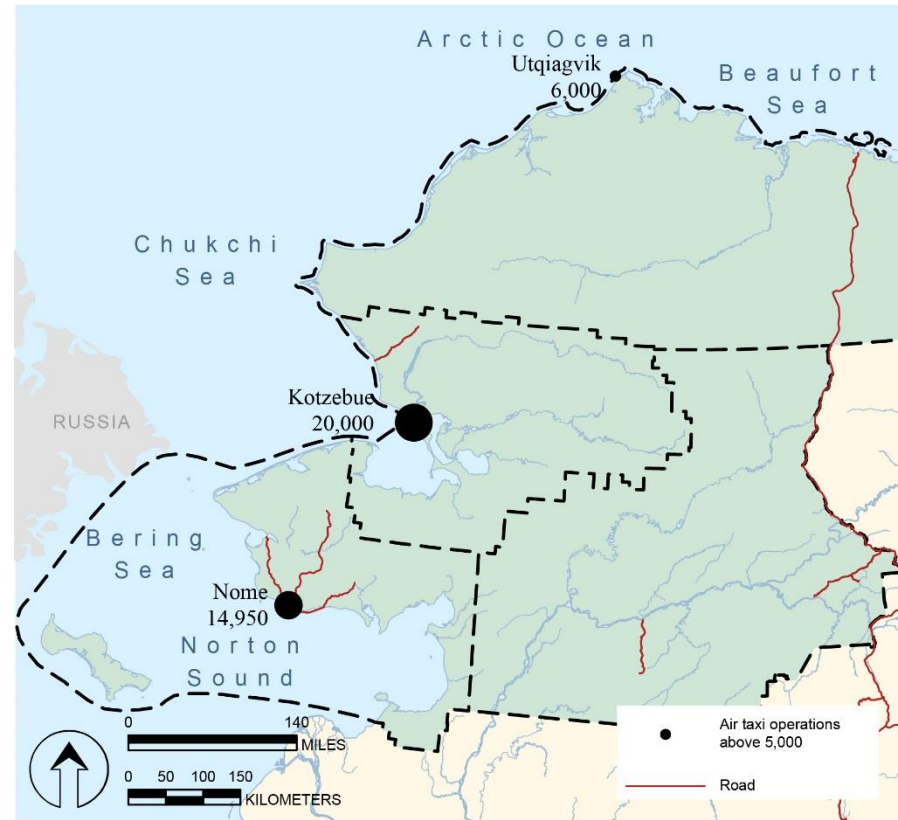


Figure 3 - Airports with >1,000 Air Taxi Operations

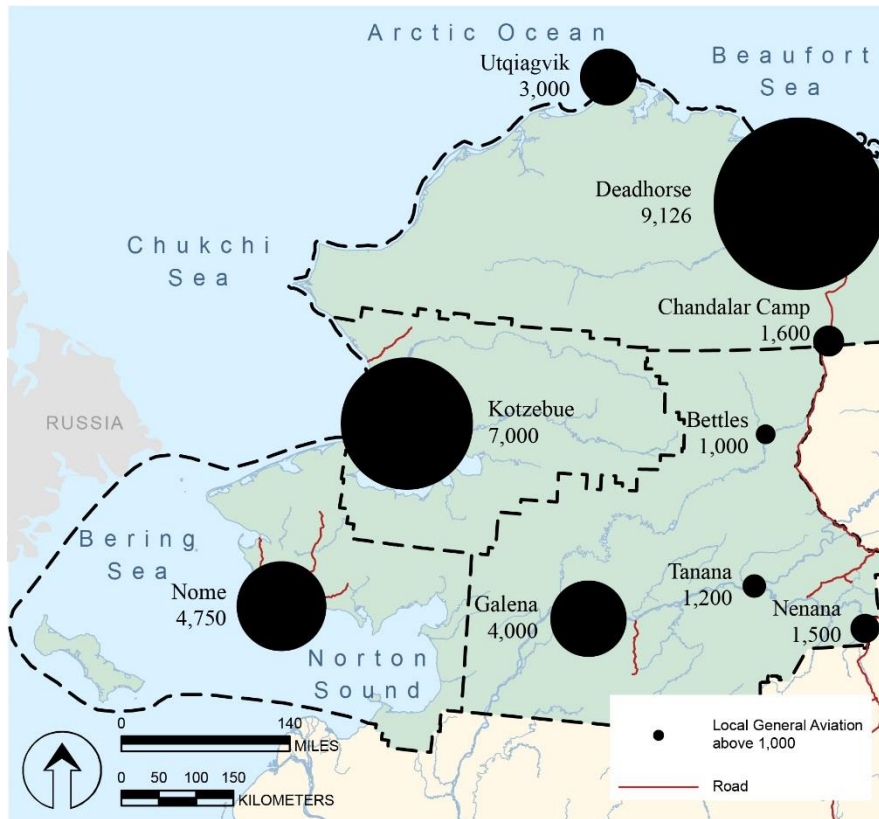


Figure 4 - Airports with >1,000 Local GA Operations

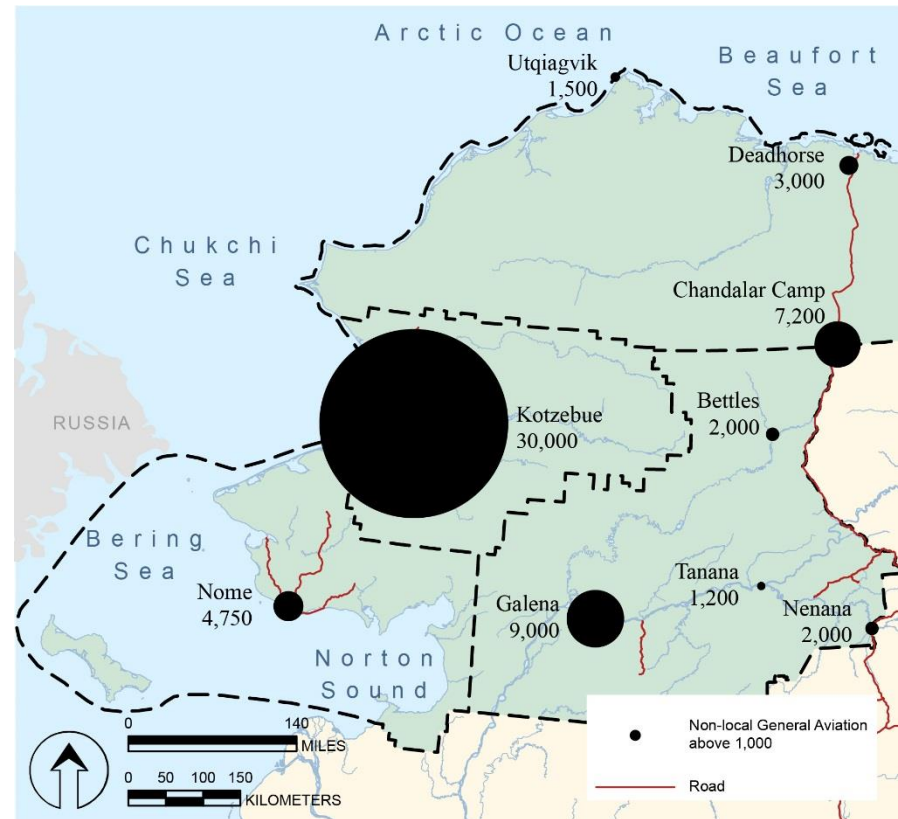


Figure 5 - Airports with >1,000 Itinerant GA Operations

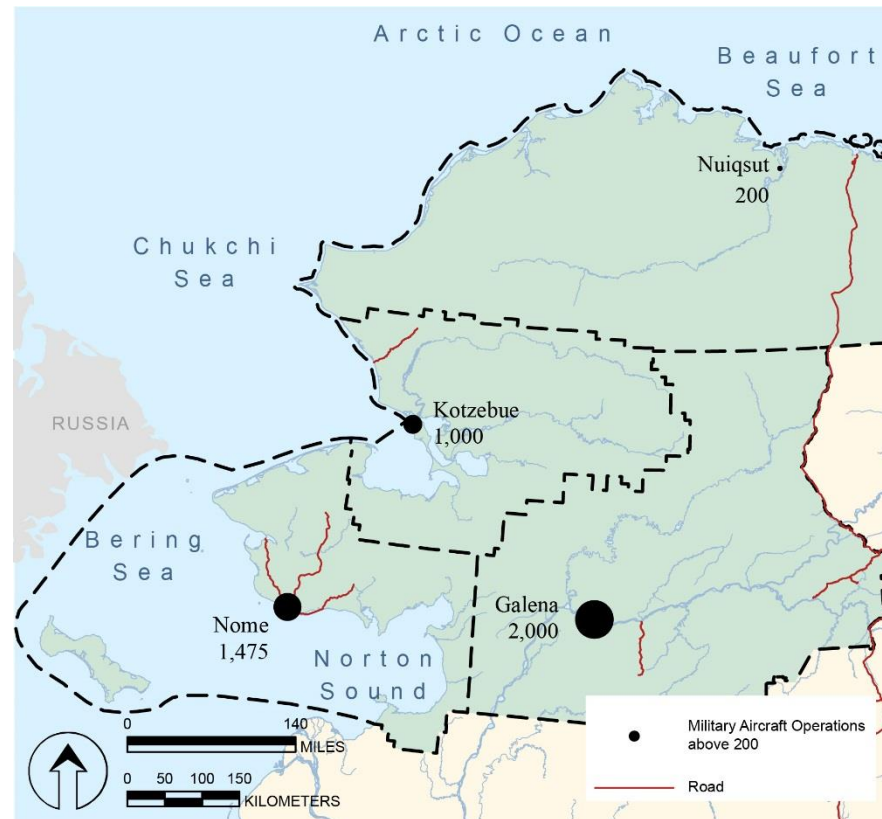


Figure 6 - Airports with >200 Military Operations

4 HUB-AND-SPOKES PATTERNS AND TRAFFIC

Hub-and-spoke route maps for the six regional hubs and the out-of-region hubs of Fairbanks and Anchorage are presented below. Each map is accompanied by a table presenting calendar year 2017 Air Carrier traffic data reported to the USDOT. Detailed facility data (e.g. approaches, runway lengths) are in the Appendix.

4.1 Galena

As a former U.S. Air Force (USAF) facility, Galena has a long, paved runway able to accommodate larger aircraft. As such, it serves as a bypass mail hub (see Section 4.9) and a regional hub in the Middle Yukon, serving five communities.

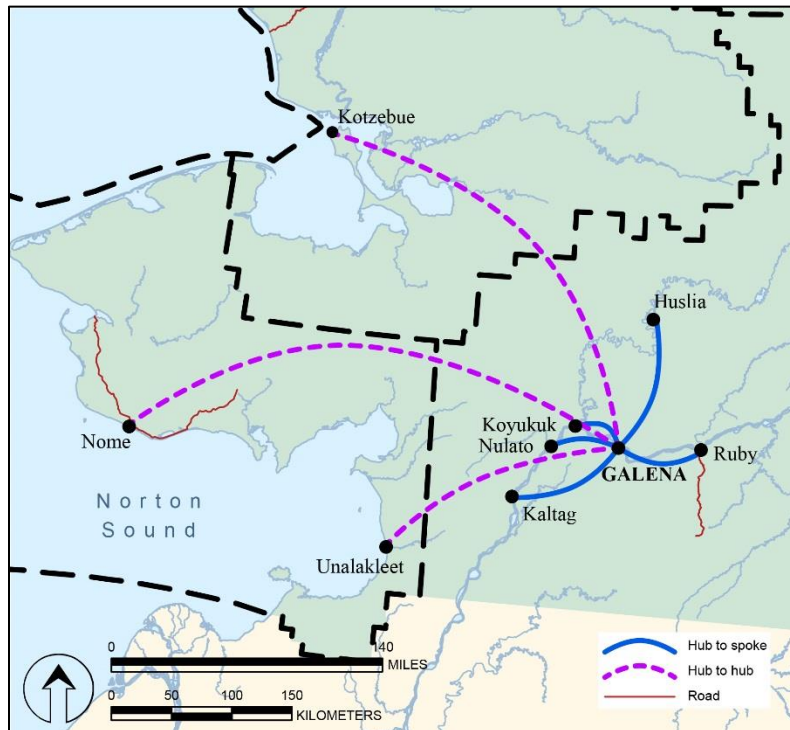


Figure 7 - Routes from Galena

Table 2 - Air Traffic from Galena, 2017

From Galena - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Huslia	304	341	16,096	331,641
Kaltag	376	879	10,384	155,263
Kotzebue	12	53	577	-
Koyukuk	200	167	9,494	84,854
Nome	17	68	-	-
Nulato	428	863	24,771	201,908
Ruby	282	177	9,264	102,296
Unalakleet	16	27	-	-

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.2 Unalakleet

Situated on the coast of Norton Sound, Unalakleet serves four communities in the Seward Peninsula region and acts as a bypass mail hub. Unalakleet's runway is 5,900 feet long and paved. In addition to supporting local air traffic, the airport is also used to transport commercial fish from the region to Anchorage.

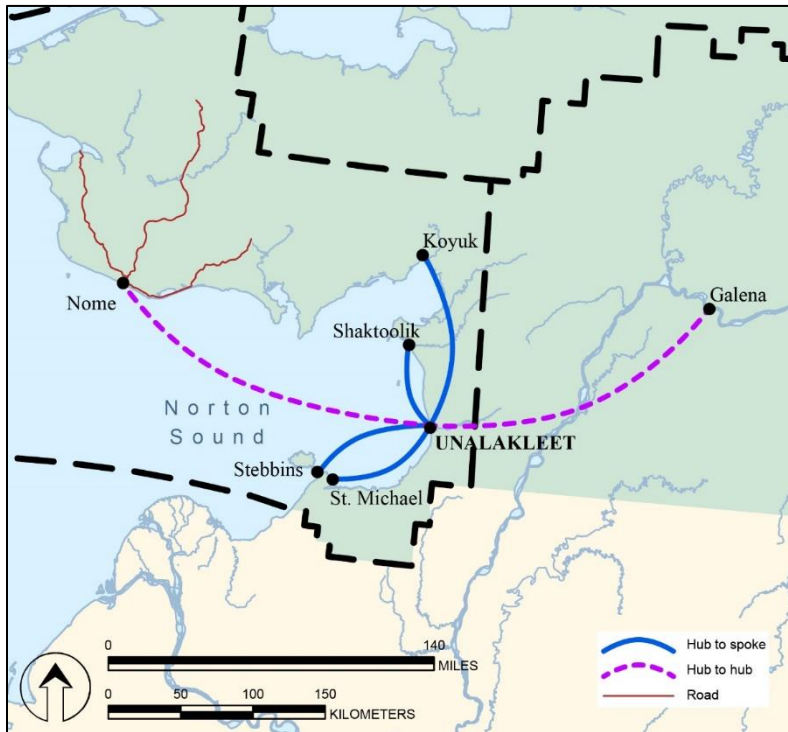


Figure 8 - Routes from Unalakleet

Table 3 - Air Traffic from Unalakleet, 2017

From Unalakleet - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Galena	33	3	10	-
Koyuk	564	1,070	63,595	663,374
Nome	413	2,282	55,797	30,519
Shaktoolik	1,085	1,688	80,259	531,070
St. Michael	1,377	1,324	111,735	1,032,027
Stebbins	783	1,184	84,764	786,272

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.3 Nome

Nome Airport serves communities across the Seward Peninsula, Norton Sound, and Saint Lawrence Island. With paved primary and crosswind runways, Nome experiences considerable aviation activity. Daily jet service from Anchorage connects the region to the rest of Alaska and beyond. With the adjacent Port of Nome and seasonal road connections to Teller and Council, Nome Airport is an important inter-modal facility.

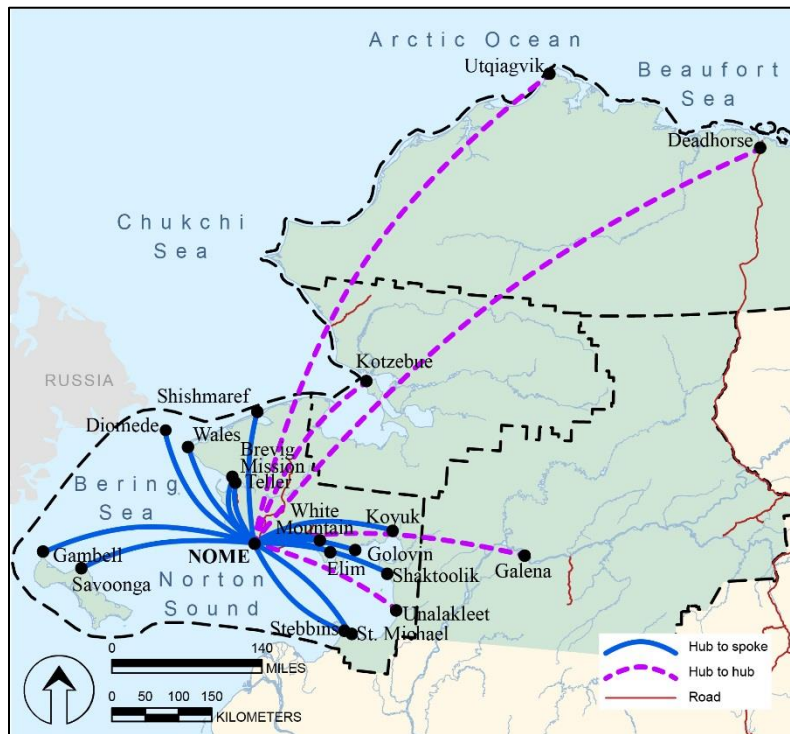


Figure 9 - Routes from Nome

Table 4 - Air Traffic from Nome

From Nome - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Brevig Mission	631	2,000	115,715	674,235
Deadhorse	26	-	48,332	-
Diomedes	24	68	763	16,158
Elim	633	1,602	101,143	576,728
Galena	13	84	10	-
Gambell	776	2,652	211,838	1,100,391
Golovin	454	1,466	136,360	282,870
Kotzebue	493	1,378	131,562	33,335
Koyuk	209	873	64,662	1,746
Savoonga	1,048	3,310	316,727	1,445,497
Shaktoolik	249	613	27,073	2,647
Shishmaref	1,071	2,834	207,188	1,283,146
St. Michael	172	992	56,640	5,848
Stebbins	482	1,211	42,782	3,793
Teller	599	1,163	72,762	352,529
Unalakleet	456	2,251	83,716	18,777
Utqiagvik	11	38	910	-
Wales	435	1,068	125,862	409,344
White Mountain	720	1,277	136,585	314,174

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.4 Kotzebue

Kotzebue is the hub for the Northwest Arctic Borough. Daily jet service to Anchorage provides a year-round connection to the contiguous road system. With a paved primary runway, an unpaved crosswind runway, and an unofficial floatpond, Kotzebue accommodates commercial, GA, and military aircraft. Air taxi providing services to tourists visiting national parks, river travelers, and hunting parties increase air traffic seasonally.

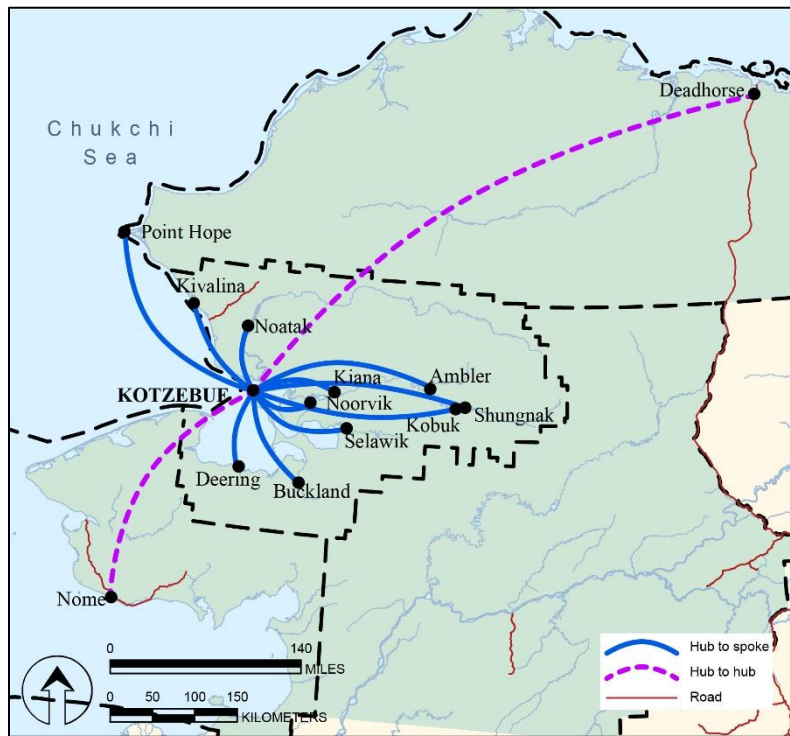


Figure 10 - Routes from Kotzebue

Table 5 - Air Traffic from Kotzebue

From Kotzebue - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Ambler	632	1,785	223,647	431,610
Buckland	1,136	3,856	208,480	976,128
Deadhorse	83	-	175,917	-
Deering	484	1,108	85,925	275,184
Kiana	783	2,725	136,704	671,183
Kivalina	906	2,846	232,345	873,706
Kobuk	280	987	111,745	216,126
Noatak	1,118	3,429	181,836	900,385
Nome	678	1,909	34,335	1,243
Noorvik	1,179	3,710	206,599	978,574
Point Hope	1,581	4,339	501,616	1,808,387
Selawik	1,505	4,696	207,965	1,231,243
Shungnak	477	1,659	154,381	456,458

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.5 Utqiagvik

Utqiagvik is the hub for four North Slope communities and provides daily jet service to Anchorage, Deadhorse, and Fairbanks. It also supports regional oil and gas exploration efforts and houses the North Slope Borough's search and rescue fleet.

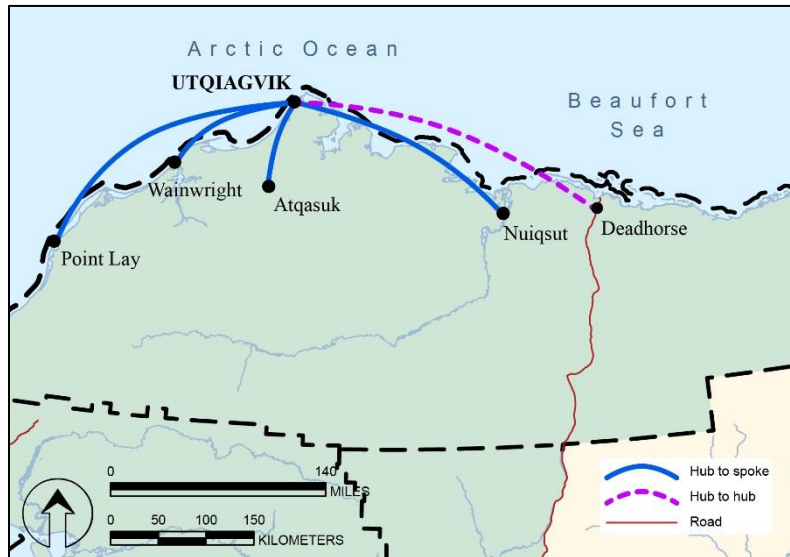


Figure 11 - Routes from Utqiagvik

Table 6 - Air Traffic from Utqiagvik

From Utqiagvik - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Atkasuk	594	1,916	195,859	502,285
Deadhorse	310	621	133,997	60,267
Nuiqsut	449	1,624	93,206	12,472
Point Lay	570	1,524	141,517	528,637
Wainwright	1,021	3,148	413,207	1,308,635

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.6 Deadhorse

Deadhorse Airport primarily supports the oil and gas industry on the North Slope. The communities of Kaktovik and Nuiqsut are also served from this hub. Deadhorse is connected to the contiguous road system and is an important intermodal connection point for the region.

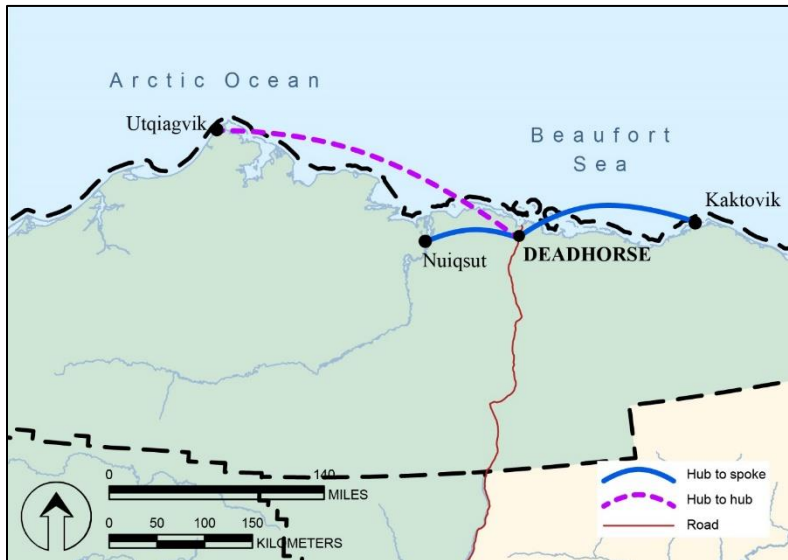


Figure 12 - Routes from Deadhorse

Table 7 - Air Traffic from Deadhorse

From Deadhorse - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Kaktovik	416	1,373	315,744	354,874
Nuiqsut	497	1,393	256,979	488,074
Utqiagvik	1,095	1,698	641,904	9,656,579

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.7 Fairbanks

As the second busiest airport and second largest community in Alaska, Fairbanks plays an important role in the region's transportation network. Daily jet service connects Fairbanks to Deadhorse and Utqiagvik. Smaller prop aircraft provide flights to 16 communities in the Middle Yukon and North Slope. Freight and mail shipped to Fairbanks via road passes through the airport bound for destinations throughout the Middle Yukon region.

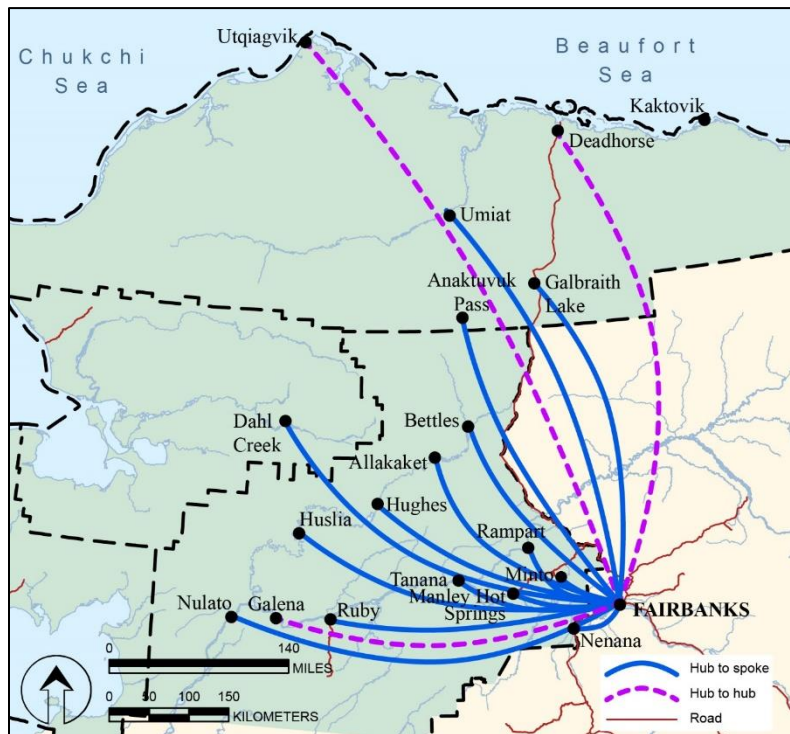


Figure 13 - Routes from Fairbanks

Table 8 - Air Traffic from Fairbanks

From Fairbanks - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Allakaket	416	1,764	186,594	269,134
Anaktuvuk Pass	953	3,599	386,035	593,269
Barter Island/Kaktovik	223	1,412	281,572	157,731
Bettles	540	1,866	98,246	33,860
Chandalar Camp	-	-	-	-
Dahl Creek	57	125	72,713	-
Deadhorse	567	3,712	247,945	24,421
Galbraith Lake	50	463	1,920	-
Galena	1,464	7,029	299,023	803,606
Hughes	205	942	161,091	114,285
Huslia	268	2,186	256,914	82,045
Manley Hot Springs	133	82	15,490	24,320
Minto	65	123	10,934	12,492
Nenana	5	-	-	-
Nulato	144	1,364	137,321	440
Rampart	285	621	139,388	29,092
Ruby	374	1,687	181,410	-
Tanana	1,072	2,409	276,607	-
Umiat	16	51	4,828	1,303
Utqiagvik (Barrow)	55	141	721,185	23,696

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.8 Anchorage

Anchorage is the largest and busiest airport in Alaska and the second largest cargo hub in the United States. Many of the goods bound for Northwest Alaska pass through Anchorage. Anchorage airport provides service to all six of the region's hub airports, as well as the out-of-region hub Fairbanks.

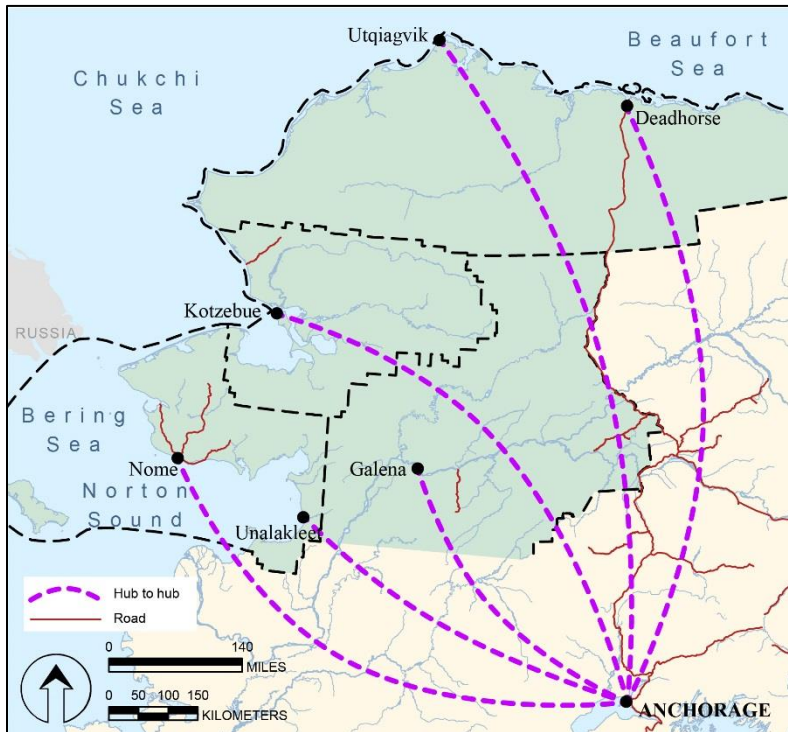


Figure 14 - Routes from Anchorage

Table 9 - Air Traffic from Anchorage

From Anchorage - To:	Flights	Passengers	Freight (lbs)	Mail (lbs)
Deadhorse	820	34,944	2,253,351	170,764
Galena	96	275	410,998	1,561,847
Kotzebue	1,498	34,146	6,635,665	14,085,487
Nome	1,296	34,118	8,026,894	15,512,717
Unalakleet	881	7,754	1,319,669	4,737,595
Utqiagvik (Barrow)	462	34,916	7,300,029	1,061,700

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

4.9 Bypass Mail Hubs

Beginning in 1972, rural Alaska communities have relied on the USPS Bypass Mail program to subsidize private air carriers' shipped freight (on pallets weighing at least 1,000 pounds). The Bypass Mail program is essentially a subsidy to airline carriers shipping freight from merchants in Anchorage or Fairbanks to rural customers. Instead of processing freight via USPS facilities, customers pay standard postal rates and the USPS makes up the difference between these rates and air carrier expenses.

The aim of the program is to reduce the cost of living in rural Alaska, shorten shipping time, and reduce overall costs for the USPS. The system is an additional driver for aviation demand in rural Alaska, making up as much as 60 percent of some carriers' annual revenue. The Rural Service Improvement Act of 2002 further required that all flights carrying freight from hubs to villages must provide passenger service on return trips.

Following are the bypass mail hubs and routes in the region.

Table 10 - Bypass Mail Hubs

Bypass Mail Hubs	Communities
Fairbanks	Allakaket ² , Anaktuvuk Pass, Barter Island/Kaktovik, Bettles, Deadhorse, Manley Hot Springs, Minto, Nenana, Rampart, and Tanana
Galena	Hughes, Huslia, Kaltag, Koyukuk, Nulato, and Ruby
Kotzebue	Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Point Hope, Selawik, and Shungnak
Nome	Brevig Mission, Diomedes, Elim, Golovin, Savoonga, Shishmaref, Teller, Wales, and White Mountain
Savoonga	Gambell
Unalakleet	Koyuk, Shaktoolik, St. Michael, and Stebbins
Utqiagvik (Barrow)	Atkasuk, Nuiqsut, Point Lay, and Wainwright

Source: U.S. Postal Service, Bypass Mail in Alaska Handbook, 2018 listing.

² Mail bound for Alatna goes to Allakaket via air and is then ferried across the Koyukuk River by boat to Alatna

5 AIRPORTS BY LEVEL OF SERVICE

The National Plan of Integrated Airport Systems (NPIAS) defines and groups airports by level of service to their surrounding communities. Airports in Northwest Alaska are categorized as:

- **Primary Air Carrier Service** (public airports with >10,000 annual passenger enplanements)
- **Non-Primary Commercial Service** (public airports with 2,500-10,000 annual passenger enplanements)
- **General Aviation** (public-use airports with <2,500 annual passenger enplanements)
- **Utility**
- **Non-NPIAS airports**

Airports considered in this study are summarized by level of service classification in Table 11. All data are for calendar year 2017.

Table 11 - Airport Level of Service

Airports by Level of Service	Commercial Operations	Enplaned Passengers	Enplaned Cargo (Freight & Mail in lbs)	Deplaned Passengers	Deplaned Cargo (Freight & Mail in lbs)
Primary/Regional	76,822	242,932	58,182,396	241,602	5,355,731
Commercial Service	49,672	60,089	883,659	60,737	19,086,790
General Aviation	52,832	47,424	1,024,109	49,368	90,567,704
Other	176	184	2,949	184	669,500
Total	179,502	350,629	60,093,113	351,891	115,679,725

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data. Level of Service categories obtained from FAA Airport Master Record (5010) data, 2018.

5.1 Primary Airports

The region's six hub airports are Primary Airports.

Table 12 - Primary Airports

Airport	Commercial Operations	Enplaned Passengers	Enplaned Cargo (Freight & Mail in lbs)	Deplaned Passengers	Deplaned Cargo (Freight & Mail in lbs)
Deadhorse	5,776	41,847	21,019,209	41,185	1,930
Galena	5,988	9,664	1,223,342	9,991	426,635
Kotzebue	25,026	67,951	15,322,925	67,585	1,191,659
Nome	20,644	61,401	10,285,798	61,449	1,322,470
Unalakleet	10,718	16,111	5,752,280	15,823	463,381
Utqiagvik (Barrow)	8,670	45,958	4,578,842	45,569	1,949,656
Total	76,822	242,932	58,182,396	241,602	5,355,731

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data. Level of Service categories obtained from FAA Airport Master Record (5010) data, 2018.

5.2 Commercial Service Airports

Table 13 - Commercial Service Airports

Airport	Commercial Operations	Enplaned Passengers	Enplaned Cargo (Freight & Mail in lbs)	Deplaned Passengers	Deplaned Cargo (Freight & Mail in lbs)
Anaktuvuk Pass	2,728	3,856	192,515	4,054	934,057
Buckland	3,352	4,456	42,926	4,563	1,243,218
Gambell	2,698	3,493	61,507	3,499	186,130
Huslia	2,042	2,897	23,710	2,748	6,531
Kiana	3,268	3,485	35,681	3,483	320,181
Kivalina	3,196	3,454	36,121	3,652	216,218
Noatak	3,484	4,716	72,987	4,543	818,100
Noorvik	3,846	4,444	31,123	4,514	1,220,812
Nulato	1,826	2,440	20,715	2,445	1,445,866
Point Hope	3,932	4,964	99,034	5,342	639,132
Savoonga	3,188	4,188	94,371	4,190	1,334,211
Selawik	3,654	5,260	33,115	5,309	429,088
Shishmaref	2,576	3,360	42,935	3,355	1,783,003
Stebbins	4,108	2,687	27,084	2,710	1,277,887
Tanana	3,110	2,633	22,748	2,524	949,562
Wainwright	2,664	3,756	47,087	3,806	6,282,794
Total	49,672	60,089	883,659	60,737	19,086,790

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data. Level of Service categories obtained from FAA Airport Master Record (5010) data, 2018.

5.3 General Aviation Airports

The following table presents airports in the region classified as General Aviation airports. These airports likely receive commercial service through both scheduled Air Carriers and Air Taxis, but annual passenger enplanements do not regularly reach the level of 2,500 or more per year.

Table 14 - General Aviation Airports

Airport	Commercial Operations	Enplaned Passengers	Enplaned Cargo (Freight & Mail in lbs)	Deplaned Passengers	Deplaned Cargo (Freight & Mail in lbs)
Allakaket	1,564	1,819	20,323	1,858	456,726
Ambler	2,666	2,175	53,467	2,308	681,579
Atkasuk	1,872	2,335	74,734	2,470	805,267
Barter Island/Kaktovik	1,564	3,212	85,595	3,392	1,243,218
Bettles	1,994	1,835	21,533	1,902	133,541
Brevig Mission	2,554	2,413	18,118	2,304	801,308
Chandalar Camp	34	18	200	16	-
Deering	2,256	1,536	71,897	1,558	367,351
Diomedede	88	88	843	72	45,021
Elim	3,004	2,313	37,160	2,338	686,521
Galbraith Lake	102	856	0	1,047	1,930
Golovin	2,816	2,029	37,849	2,079	429,088
Hughes	940	1,087	25,026	1,077	286,150
Kaltag	1,430	1,626	162,776	1,694	320,181
Kobuk	2,066	1,357	57,587	1,460	391,960
Koyuk	3,144	2,342	27,497	2,416	818,100
Koyukuk	1,196	870	11,078	896	216,218
Manley Hot Springs	376	101	7,037	94	39,910
Minto	364	201	911	129	23,429
Nenana	14	4	0	36	27,295
Nuiqsut	1,970	2,362	69,061	3,298	934,057
Point Lay	1,366	1,859	26,011	1,930	752,660
Rampart	666	621	19,169	639	186,130
Ruby	1,696	1,982	19,450	1,976	343,185
Shaktoolik	3,732	2,779	19,999	2,768	663,892
Shungnak	2,704	2,360	37,745	2,274	639,132
St Michael	4,330	2,641	29,807	2,753	1,277,887
Teller	1,942	1,499	14,440	1,447	425,590
Wales	1,794	1,361	52,060	1,433	550,638
White Mountain	2,588	1,743	22,736	1,704	463,381
Total	52,832	47,424	1,024,109	49,368	14,011,345

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data. Level of Service categories obtained from FAA Airport Master Record (5010) data, 2018.

5.4 Other Airports

The following two public airports fall outside of the main airport classifications. Dahl Creek Airport serves a mining camp, and Umiat Airport services oil and gas exploration on the North Slope.

Table 15 - Other Airports

Airport	Commercial Operations	Enplaned Passengers	Enplaned Cargo (Freight & Mail in lbs)	Deplaned Passengers	Deplaned Cargo (Freight & Mail in lbs)
Dahl Creek	134	128	2,949	132	118,862
Umiat	42	56	0	52	550,638
Total	176	184	2,949	184	669,500

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data. Level of Service categories obtained from FAA Airport Master Record (5010) data, 2018.

6 PUBLIC AVIATION FACILITIES AND CHARACTERISTICS

In general, non-hub airport facilities in the region are small, (4,000 ft. or less in length) gravel strips with few services. Airfields consist of a runway and apron, with a connecting taxiway. Snow removal equipment is stored in small single- or double-bay buildings. There are few passenger waiting shelters at these airports.

The region's hub airports have paved runways capable of supporting larger jet aircraft. Passenger terminal facilities are provided by individual Air Carriers. DOT&PF provides Aircraft Rescue and Firefighting personnel and equipment at Deadhorse, Utqiagvik, Kotzebue, and Nome.

Detailed tables with additional information are in Appendix 1. Information on private airports is summarized in Section 8.



Figure 15 - Runways >4,000 feet



Figure 16 - Runways with Asphalt Surfaces

6.1 Condition, Compliance, and Capacity Issues

The FAA sets standards for airfield geometry, on-airport land uses, and safety areas. Identifying airports that are deficient in one or more of these areas is important in planning future projects. The following maps highlight some of these deficiencies.

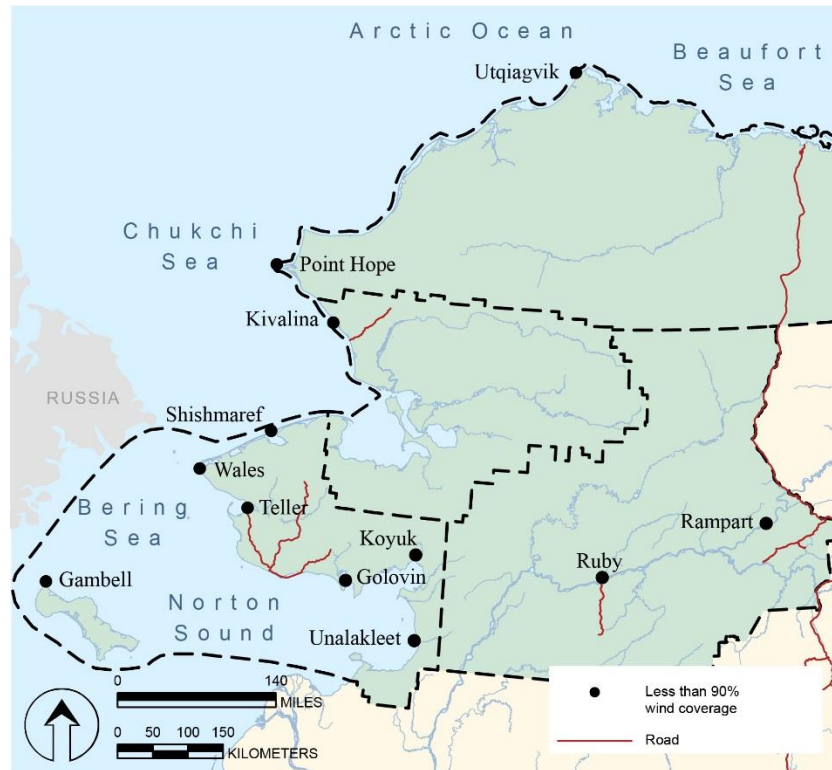


Figure 17 - Airports with <90% Wind Coverage on the Primary Runway

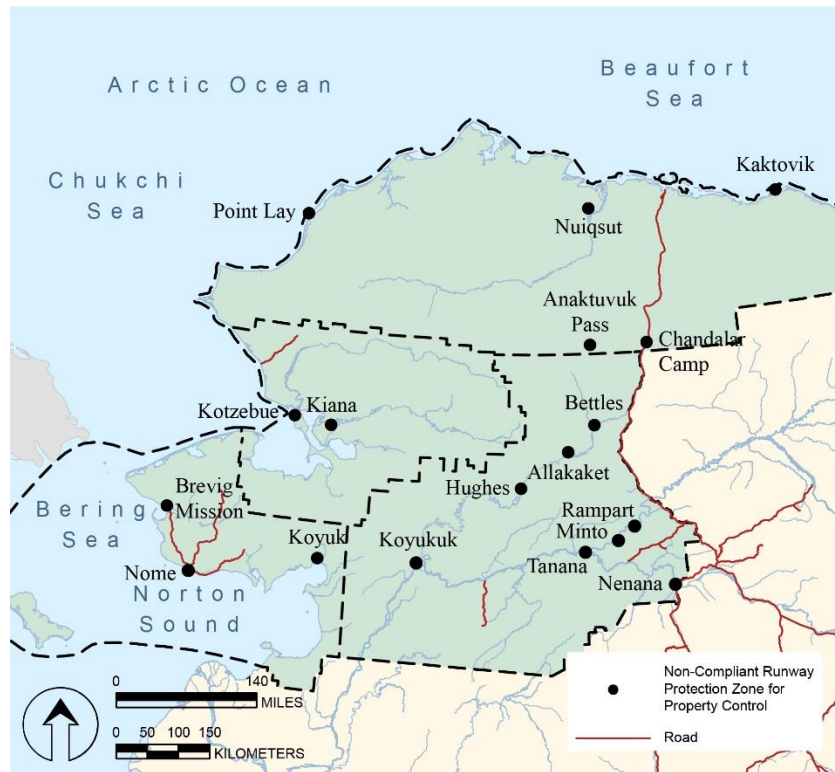


Figure 18 - Airports with Non-Compliant Runway Protection Zones for Property Control

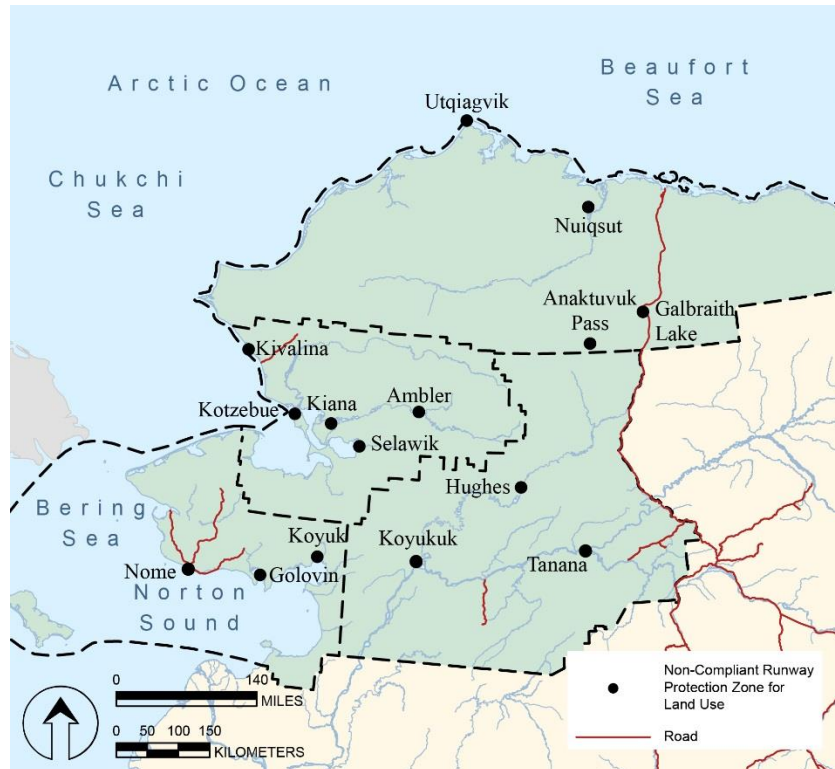


Figure 19 - Airports with Non-Compliant Runway Protection Zones for Land Use

FAA Airport Master List data indicates that some regional airports have capacity concerns.

- **Unmet demand for lease lots** - Koyuk, Nome, Unalakleet, and Utqiagvik
- **Unmet demand for aircraft tiedowns** - Deadhorse
- **Unmet demand for automobile parking** - Kotzebue and Utqiagvik

7 AIR CARRIER FLEET SERVING NORTHWEST ALASKA

The following table presents the fleet that provides scheduled air service throughout the region.

Table 16 – Historic Air Carrier Fleet Operating in Northwest Alaska

Aircraft	Flights	Passengers	Freight (lbs)	Mail (lbs)
Cessna 208 Caravan	23,075	85,105	3,188,722	7,393,779
Cessna C208B/Grand Caravan	22,044	75,267	1,319,284	6,370,655
Piper PA-31 (Navajo)/T-1020	16,590	45,743	734,026	2,775,400
Beech 1900 A/B/C/D	9,136	41,102	1,426,361	6,397,235
Casa/Nurtanio C212 Aviocar	4,498	3	3,935,578	5,697,215
Beech 200 Super King Air	2,852	11,115	143,728	229,446
Cessna C206/207/209/210 Stationair	2,843	3,416	64,447	604,514
Boeing 737-400	1,804	93,292	9,582,121	7,270,744
Boeing 737-100/200	1,179	-	9,791,114	15,145,757
De Havilland DHC8-100 Dash-8	1,022	16,149	326,672	553,250
Boeing 737-800	733	59,165	1,524,137	763,244
Boeing 737-700/700LR/Max 7	671	44,232	1,474,317	918,249
Lockheed L100-30/L-382E	665	-	8,887,845	7,844,904
McDonnell Douglas DC-9-30	607	-	2,480,475	9,744,883
Shorts 330 ³	340	-	392,169	521,649
McDonnell Douglas DC-6A	270	-	1,609,240	2,682,194
Pilatus PC-12	263	1,003	89,710	3,423
De Havilland DHC8-400 Dash-8	255	8,289	243,040	890
Boeing 737-300	192	-	1,602,008	2,229,632
Robinson R44	162	214	-	-
Hughes-500/530	154	179	1,500	-
Bell 212 Twin Two Twelve	103	219	1,499	45,450
Beech Bonanza 35A/C/D/E/G/H/J/K/S/V/ 36A	89	123	1,578	151
McDonnell Douglas DC9 Super 80/MD81/82/83/88	67	-	325,376	1,276,795
Piper PA-32 (Cherokee 6) ²	47	48	12,558	1,270
Gipps Aero Ga8 Airvan ²	26	44	-	-
Hu-1h 204B	16	7	28,000	-
Curtiss C46/20t/A/D/F/R Commando ²	12	-	86,053	-
Other	19	97	4,908	10,378
Total	89,734	484,812	49,276,466	78,481,107

Sources: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018, and interviews with all Air Carrier operating in the Region.

Additionally, the following aircraft now also regularly operate in the region: A-Star helicopter, Bell 206, Bell 412, Embraer EMB-120 Brasilia, Helio Courier, MD-80, SAAB 2000, and SAAB 340A/B.

³ After interviews with air carriers, these aircraft were identified as no longer operating regularly in the region.

The following table shows number of aircraft by type, configuration, where based, and compatibility with instrument approaches in the region. This information was obtained from interviews of all air carriers providing scheduled service in the region. Table 17 reflects the fleet changes between 2017 and 2018.

Table 17 - Aircraft Operating in Northwest Alaska

Aircraft	Number	Configuration	Based	IFR Capable	LPV Capable
A-Star	2	Passenger/Cargo	1 Alpine, 1 Nome	2	2
Beech 1900	20	Passenger/Cargo	2 Nome, 18 out of region	20	13
Beech 1900	3	Cargo	Out of region	3	0
Beech Bonanza	1	Passenger/Cargo	Out of region	1	1
Beech King Air 200	4	Passenger/Cargo	4 Nome	4	4
Bell 206	4	Passenger/Cargo	1 Deadhorse, 1 Umiat	3	3
Bell 212	2	Passenger/Cargo	2 Deadhorse	2	2
Bell 412	3	Passenger/Cargo	3 Nome	3	3
Boeing 737-200	1	Cargo	Out of region	1	1
Boeing 737-300	1	Cargo	Out of region	1	1
Boeing 737-400 ⁴	?	Passenger/Cargo	Out of region	Yes	No
Boeing 737-700	?	Passenger/Cargo	Out of region	Yes	No
Boeing 737-800	?	Passenger/Cargo	Out of region	Yes	No
Casa 212	6	Cargo	3 Nome, 1 Kotzebue	6	6
Cessna 207	25	Passenger/Cargo	All Over	10	0
Cessna Caravan/G. Caravan	49	Passenger/Cargo	All Over	49	24
De Havilland Dash 8	10	Passenger/Cargo	All Over	10	10
Embraer 120	2	Cargo	Out of region	2	0
Helio Courier	4	Passenger/Cargo	Out of region	4	4
Lockheed L382-G	3	Cargo	Out of region	3	3
McDonnell Douglas DC 6	4	Cargo	Out of region	4	4
McDonnell Douglas DC 9	5	Cargo	Out of region	5	5
McDonnell Douglas MD 500	3	Passenger/Cargo	3 Nome	3	3
McDonnell Douglas MD 80	4	Cargo	Out of region	4	4
Pilatus PC-12	3	Passenger/Cargo	Out of region	3	3
Piper PAS-31 Navajo	34	Passenger/Cargo	4 Nome	34	24
Robinson R44	3	Passenger/Cargo	3 Nome	3	3
SAAB 2000	?	Passenger/Cargo	Out of region	Yes	Yes
SAAB 340A/B	?	Passenger/Cargo	Out of region	Yes	Yes
UH1 Huey	1	Passenger/Cargo	1 Nome	1	1

Source: Interviews with air carriers serving Northwest Alaska, Southeast Strategies, 2018/19.

⁴ Use of the Boeing 737-400 dropped considerably after Alaska Airlines retired the aircraft from their fleet; Northern Air Cargo still operates the aircraft in the region

7.1 Critical Aircraft

The following table presents the critical aircraft for the region in 2017 as developed from USDOT Air Carrier data. The FAA definition of critical aircraft is the largest aircraft to perform 500 annual operations (250 flights) on the airport. The Airport Reference Code (ARC) denotes the size and landing speed category of critical aircraft and determines the safe landing criteria for each airport.

Table 18 - Critical Aircraft by Airport

2017 Critical Aircraft	ARC	Communities ⁵
Cessna Caravan/ Grand Caravan	A-II	Allakaket, Ambler, Anaktuvuk Pass, Atkasuk, Bettles, Brevig Mission, Buckland, Dahl Creek, Deering, Elim, Galena, Golovin, Hughes, Huslia, Kiana, Kivalina, Kobuk, Koyuk, Koyukuk, Nenana, Noatak, Noorvik, Nuiqsut, Nulato, Point Hope, Point Lay, Rampart, Ruby, Selawik, Shaktoolik, Shishmaref, Shungnak, St. Michael, Stebbins, Tanana, Teller, Umiat, Wainwright, Wales, and White Mountain
Casa 212	A-II	Savoonga
De Havilland Dash 8	A-III	Galbraith Lake and Unalakleet
PA-31 Navajo	B-I	Manley Hot Springs, and Minto
Beech 1900	B-II	Barter Island/Kaktovik, Kaltag
Beech King Air 200	B-II	Gambell
Boeing 737-400	C-III	Kotzebue, Nome
Boeing 737-800	D-III	Deadhorse, Utqiagvik (Barrow)
Bell 212 (helicopter)	N/A	Diomedede

Source: USDOT, Bureau of Transportation Statistics, Air Carrier Data, 2018.

8 PRIVATE AIRPORT FACILITIES IN NORTHWEST ALASKA

There are several private airport facilities located in the region. While these facilities are not included in the 54 airports studied here, it is important to understand how these private facilities contribute to regional air traffic. The oil and gas industry has active pumping facilities and exploratory sites that are accessed by air transportation, and their air traffic in the region is significant. Other private facilities such as the Red Dog Mine airport also contribute air traffic.

Table 19 - Private Airfields in the Region

Airfield	Code	Associated Community	Surface	Length (ft)	Width (ft)
Inigok	4AK1	Deadhorse	Gravel	5,000	150
Ugnu-Kuparuk	UBW	Kuparuk	Asphalt	6,551	150
Badami	AK78	Deadhorse	Gravel	5,100	75
Alpine Airstrip	AK15	Deadhorse	Gravel	5,005	100
Pt. Thomson Airstrip	37AA	Deadhorse	Gravel	5,000	150
CD-3 Airstrip	AK20	Nuiqsut	Gravel	3,500	170
Red Dog Mine	DGG	N/A	Asphalt	6,312	100

Source: Airport Master Records (5010 data), Federal Aviation Administration. Accessed late 2018.

⁵ Chandalar Camp does not receive scheduled air service; the critical aircraft for this airport is unknown.

Several oil companies have joined forces to create a cooperative air transportation system for accessing these facilities. The flight cooperative is based in Anchorage and provides scheduled service between Anchorage, Fairbanks, Deadhorse, Kuparuk, and CD-3 Airstrip with industry-owned Casa-212 and DHC-6-300 Twin Otter aircraft. This cooperative also leases and/or charters jet aircraft to bring oilfield workers and freight between Anchorage, Fairbanks, Deadhorse, and Kuparuk. These aircraft travel to:

- Alpine - 27 flights per week
- Kuparuk - 15 flights per week
- Deadhorse - 6 flights per week
- CD-3 Airstrip - 4 flights per week.

Jet aircraft travel to Kuparuk 6 flights per week and to Deadhorse 11 flights per week. Other Air Carriers may also be contracted to support the oil industry in the region. For 2017, one cargo-only carrier reported 208 flights into Alpine Airstrip carrying 7,616,736 lbs. of freight with Lockheed L-382e aircraft.

The Red Dog Airport is a private airport that provides access to the Red Dog Mine (mainly producing zinc, lead, and germanium). The airport received 806 Air Carrier flights in 2017, carrying 11,516 passengers, and 2,705,268 lbs. of freight. These flights mainly originated in Anchorage and Kotzebue. The aircraft making those flights were Boeing 737-100/200s, 400s, 700s, Piper PA-31 Navajos, Cessna Caravan/Grand Caravan, Beech 1900s.

In addition, private mining and oil companies may charter aircraft to move about the region in support of their developments. While that traffic may access public airports, it may not be reported in USDOT Air Carrier statistics databases. Some of this traffic may be reported as Air Taxi or GA. Some of the airports likely receiving more traffic than reported are Barter Island/Kaktovik, Dahl Creek, Deadhorse, Galbraith Lake, Nuiqsut, Point Lay, and Umiat.

Bettles Airport supports a tourist lodge and access to four National Parks and Preserves and receives a large volume of GA traffic.

9 INTERMODAL CONNECTIONS

While much of the passenger and freight movement within the region is by air, it is important to identify intermodal connections to understand the region's supply chain logistics. Transferring freight between modes can increase the cost of shipping and expose freight to delays. Table 1.6 in the Appendix describes the transportation facilities and links for the region's 54 communities. The table shows which communities are coastal, which ones have harbors and/or barge landings, and which have road connections.

9.1 Road Connections

The Dalton Highway is a 414-mile road stretching from the Elliot Highway north of Fairbanks to Deadhorse on the North Slope. Chandalar Camp, Galbraith Lake, and Deadhorse are located on the Dalton Highway, and receive much of their cargo and fuel via road. The Dalton Highway terminates at Deadhorse, and some of the cargo brought in by road is distributed to other North Slope communities from Deadhorse via air. Chandalar Camp receives GA and Air Taxi traffic, but no scheduled Air Carrier air traffic. Galbraith Lake received limited scheduled air service from Fairbanks, primarily in support of the Trans-Alaska Pipeline maintenance.

The communities of Manley Hot Springs and Minto are located on the Elliot Highway north of Fairbanks. Cargo and fuel are generally delivered to these communities by road.

Nenana is located southwest of Fairbanks on the Parks Highway. Much of the cargo and passenger traffic to Nenana is via road. There is no scheduled Air Carrier air traffic to Nenana, although frequent GA and Air Taxi traffic use the runway and float pond.

Teller Airport is located on the Nome road system, but that road is not maintained in the winter.

In 2016, a 34-mile road connection between Manley Hot Springs and the Yukon River above Tanana was opened, seasonally connecting Tanana to the statewide road system via an ice road on the Yukon River. The Tanana airport still receives scheduled air service, but the traffic volume has dropped since the road was opened.

9.2 Marine/Riverine Connections

Ten communities are either located away from a navigable waterway or the coast and do not have marine or riverine facilities. The remaining 44 communities are located on rivers or the coast and have either a barge landing or a port/harbor. Freezing rivers and sea ice limit winter marine/river access.

Forty-four communities receive fuel and cargo shipments via barge. The regional centers of Nome, Kotzebue, and Utqiagvik (Barrow) receive fuel and cargo via ocean in summer and transship some of that cargo to nearby villages via air.

9.3 Intermodal Transshipment

Shipment of cargo and fuel between transportation modes in the region mainly occurs in summer with some transfer between waterborne goods received at Nome, Kotzebue, and Utqiagvik to air transportation for distribution to nearby communities. In addition, some goods brought up the Dalton Highway to Deadhorse may be transported to nearby communities or camps by air.

10 AIRPORT MAINTENANCE AND OPERATIONS FINANCIAL DATA

The following table shows maintenance and operating expenses and leasing revenues at State of Alaska-owned airports. Seven airports in the region are owned by local governments and are not shown. The city of Nenana owns and manages Nenana Airport. The North Slope Borough owns and operates six airports in the region – Anaktuvuk Pass, Atkasuk, Kaktovik, Nuiqsut, Point Lay, and Wainwright.

Table 20 - DOT&PF Airport M&O Expenses and Revenues by Airport, FY2018

Airport Name	M&O Expenses	Leasing Revenue	Revenue Less Expenses
Allakaket	\$ 89,997.33	\$ 4,415.31	\$ (85,582.02)
Ambler	\$ 154,255.31	\$ 1,711.94	\$ (152,543.37)
Bettles & Bettles VOR	\$ 327,654.71	\$ 51,623.68	\$ (276,031.03)
Brevig Mission	\$ 80,344.30	\$ -	\$ (80,344.30)
Buckland	\$ 120,169.95	\$ -	\$ (120,169.95)
Chandalar Shelf	\$ 3,797.29	\$ 732.93	\$ (3,064.36)
Dahl Creek	\$ 116.08	\$ 14,317.62	\$ 14,201.54
Deadhorse	\$ 2,647,363.89	\$ 2,250,924.06	\$ (396,439.83)
Deering	\$ 132,307.70	\$ -	\$ (132,307.70)
Diomedea	\$ 3,121.11	\$ -	\$ (3,121.11)
Elim	\$ 137,211.22	\$ -	\$ (137,211.22)
Galbraith	\$ -	\$ 5,000.29	\$ 5,000.29
Galena	\$ 749,866.52	\$ 56,714.13	\$ (693,152.39)
Gambell	\$ 182,603.31	\$ -	\$ (182,603.31)
Golovin	\$ 67,697.24	\$ -	\$ (67,697.24)
Hughes	\$ 106,330.03	\$ 250.00	\$ (106,080.03)
Huslia	\$ 88,933.07	\$ 3,054.98	\$ (85,878.09)
Kaltag	\$ 113,672.99	\$ 1,924.61	\$ (111,748.38)
Kiana	\$ 86,790.35	\$ 2,818.43	\$ (83,971.92)
Kivalina	\$ 92,023.12	\$ 2,287.79	\$ (89,735.33)
Kobuk	\$ 100,890.05	\$ -	\$ (100,890.05)
Kotzebue	\$ 1,851,628.03	\$ 100,265.79	\$ (1,751,362.24)
Koyuk	\$ 112,822.06	\$ -	\$ (112,822.06)
Koyukuk	\$ 88,510.91	\$ -	\$ (88,510.91)
Manley Hot Springs	\$ 125,041.77	\$ (100.00)	\$ (125,141.77)
Minto	\$ 36,765.17	\$ -	\$ (36,765.17)
Noatak	\$ 115,627.78	\$ 10,424.92	\$ (105,202.86)
Nome	\$ 1,852,261.45	\$ 167,490.65	\$ (1,684,770.80)
Noorvik	\$ 72,081.37	\$ -	\$ (72,081.37)
Nulato	\$ 97,412.43	\$ -	\$ (97,412.43)
Point Hope	\$ 143,493.47	\$ 1,184.93	\$ (142,308.54)
Rampart	\$ 117,142.36	\$ -	\$ (117,142.36)
Ruby	\$ 114,204.70	\$ -	\$ (114,204.70)
Savoonga	\$ 189,720.85	\$ -	\$ (189,720.85)
Selawik	\$ 86,563.11	\$ -	\$ (86,563.11)
Shaktolik	\$ 67,260.81	\$ -	\$ (67,260.81)
Shishmaref	\$ 238,472.66	\$ 2,948.84	\$ (235,523.82)
Shungnak	\$ 111,035.63	\$ 3,009.13	\$ (108,026.50)
St. Michael	\$ 67,359.77	\$ -	\$ (67,359.77)
Stebbins	\$ 47,626.41	\$ -	\$ (47,626.41)
Tanana	\$ 90,069.74	\$ 2,272.06	\$ (87,797.68)
Teller	\$ 95,025.11	\$ -	\$ (95,025.11)
Umiat	\$ 8,827.87	\$ 27,873.47	\$ 19,045.60
Unalakleet	\$ 636,018.24	\$ 26,021.97	\$ (609,996.27)
Utqiagvik (Barrow)	\$ 1,837,668.98	\$ 199,843.71	\$ (1,637,825.27)
Wales	\$ 126,788.73	\$ 656.44	\$ (126,132.29)
White Mountain	\$ 97,212.00	\$ -	\$ (97,212.00)
Total	\$13,711,786.98	\$ 2,937,667.68	\$ (10,774,119.30)

Source: DOT&PF, Division of Statewide Aviation, 2018.

11 SECURITY SYSTEMS

11.1 Passenger Screening

The major hubs in the region – Utqiagvik (Barrow), Deadhorse, Kotzebue, and Nome - have security screening for passengers and luggage. Other airports in the region do not. The Transportation Security Administration (TSA) provides screening for flights operating with more than 72 seats. Passenger screening is conducted in the Alaska Airlines terminal at each of these airports.

11.2 Fencing

Fencing is used at airports to keep wildlife off runways and taxiways and provide a safe operating area for aircraft. FAA Part 139 airports can also use fencing to prevent inadvertent entry to aircraft movement areas by unauthorized persons or vehicles.

The lack of airport fencing at many small airports has allowed vandalism of lighting and other navigational aids and rutting on runways from ATVs. Air carriers in the region have reported damage to aircraft that is left unattended at non-fenced airports.

12 REGIONAL AVIATION NEEDS

Eleven Air Carrier carriers and one medevac company operating in Northwest Alaska were interviewed for this report. These carriers were asked about improvements to the region's aviation infrastructure. The biggest concern of carriers is the lack of weather reporting at airports. Other concerns include poor maintenance of navigational aids and weather stations, need for better snow removal, and spotty communication in some locations.

To help evaluate and understand the issues, we have categorized them as:

- **Airfield surface/length** – condition of the runway (e.g. muddy), taxiways, and apron; adequacy of the runway length
- **Weather stations/Navigation Aids** – adequacy of weather reporting; adequacy of NAVAIDs and lighting
- **Communication** – ability to talk to Air Traffic Control; cell service coverage
- **Security** – security of property at airports; ability to keep wildlife, people, and vehicles off airfield
- **Maintenance and amenities** – adequacy of airfield maintenance; need for amenities such as fuel or electric

The following table provides an at-a-glance review of concerns noted by the aviation community. Each check mark represents a comment.



Figure 20 - Fencing provides security but is uncommon in the region

Table 21 - Air Carrier-Identified Airport Needs

Airport	Airfield Surface/Length	Weather Stations & NavAids	Communication	Security	Maintenance & Amenities
All Airports ⁶	✓✓	✓✓✓✓✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓
Allakaket		✓✓✓✓			
Ambler	✓		✓		✓
Anaktuvuk		✓			
Brevig Mission	✓				
Diomedes		✓			
Galena		✓✓✓✓			
Hughes		✓✓✓✓✓			
Kiana		✓			
Kivalina	✓				
Kobuk	✓	✓✓✓	✓		✓✓
Kotzebue	✓✓				✓✓✓
Koyukuk		✓✓			
Manley		✓			
Minto		✓✓			
Noatak		✓✓✓			
Nome	✓✓✓✓			✓	
Noorvik			✓		
Nuiqsut	✓✓	✓			✓
Nulato		✓✓✓			
Point Hope	✓				✓✓
Shungnak				✓✓	✓
St. Michael	✓				
Stebbins		✓			
Umiat		✓✓			✓✓
Unalakleet		✓			
Utqiagvik					✓
Wales	✓	✓			

13 PLANS FOR AVIATION INFRASTRUCTURE

DOT&PF produces an airport Needs Directory outlining airport improvement needs for each airport. The Needs Directory for Northwest Alaska airports is presented in the Appendix. While this list mostly presents plans for projects on State-owned airports, some local government airport projects eligible for State funding are also presented. In addition, non-state airports develop their own needs lists and they are presented at the end of the Appendix.

Through a prioritization process, DOT&PF determines which Needs Lists projects to fund according to available funds. The list is updated every three months and the Airport Project Evaluation Board (APEB) meets every six months to evaluate new projects.

⁶ This category represents comments that indicated a need or issue at all airports; this is not a 'total' category

14 INDEX OF STUDIES AND SOURCES

14.1 Documents and Websites

- Alaska Department of Commerce, Community, and Economic Development Community Database - <https://www.commerce.alaska.gov/web/dcra/CommunityDatabaseOnlineMoved.aspx>
- Alaska Department of Education and Early Development, Schools lists - https://education.alaska.gov/DOE_Rolodex/SchoolCalendar/Home/Cities
- Alaska Department of Health and Social Services, Directory of Health Clinics in Rural Alaska - http://dhss.alaska.gov/DirectoryHealthCare/Documents/HC_Sites_Dir.pdf
- Alaska Department of Transportation and Public Facilities, AIP Spending Plan 2012-2022.
- Alaska Department of Transportation and Public Facilities, Airport Leasing Section, FY18 Statewide Airport Revenue and Expense Report.
- Alaska Department of Transportation and Public Facilities, *Alaska Airport Needs Directory, Northern Region*, December 13, 2018.
- Alaska Department of Transportation and Public Facilities, Alaska Aviation System Plan, air traffic forecast data, by DOWL Engineers 2008. Available at <http://www.alaskaasp.com/>
- Alaska Department of Transportation and Public Facilities, *Northwest Alaska Transportation Plan*, 2004.
- Federal Aviation Administration, Airport Master Records (Form 5010). Available at <http://www.gcr1.com/5010Web/>
- Federal Aviation Administration, based aircraft data. Available at <https://www.basedaircraft.com/BaCounts/Default.aspx>
- Federal Aviation Administration, Terminal Area Forecasts Available at <http://taf.faa.gov/>
- Federal Aviation Administration Weather Camera list. Available at <https://avcams.faa.gov/sitelist.php>
- North Slope Borough, Public Works Department, list of airport needs for Borough-owned airports sent to FAA, 2018.
- PDC Engineers, *Nome Airport Master Plan Update*, June 2012.
- PDC Engineers, *Kotzebue Airport Master Plan Update*, September 2015.
- PDC Engineers, Wiley Post/Will Rogers Memorial (Utqiagvik) *Airport Master Plan Update*, January 2014.
- U.S. Postal Service, Bypass Mail in Alaska Handbook. Available at <https://about.usps.com/handbooks/po508/welcome.htm>
- U.S. Postal Service, Post Offices in Alaska. Available at <https://webpmt.usps.gov/pmt011.cfm>
- U.S. Department of Transportation, Bureau of Transportation Statistics, Aviation Data. Available at https://www.transtats.bts.gov/databases.asp?Mode_ID=1&Mode_Desc=Aviation&Subject_ID2=0
- U.S. Department of Transportation, Essential Air Service Subsidy Report for Alaska, September 2018. Available at <https://cms.dot.gov/office-policy/aviation-policy/september-2018-subsidized-essential-air-service-communities-alaska>

14.2 Interviews

14.2.1 Public Airport Managers

- Deadhorse Airport, Tim Parault, Manager, Phone: 907-659-2553.
- Galena Airport, Marvin Thurmond, Manager, Phone: 907-656-1236.
- Kotzebue Airport, Alvin Werneke, Manager, Phone: 907-442-3147.
- Nome Airport, George Koft, Acting Manager, Phone: 907-443-2500.
- Unalakleet Airport, John Wilson, Manager, Phone: 907-625-1025.
- Utqiagvik Airport, John Olsen, Manager, Phone: 907-852-6199.

14.2.2 Air Carriers/Air Taxis/Medevac Companies

- Alaska Airlines, Lynae Craig Manager, Air Traffic & Airfield Operations, Flight Operations, Phone: 206-392-6340.
- Alaska Central Express, Robert Mechigian, Chief Pilot, Phone: 907-344-5100 ext. 6.
- Arctic Transportation/Ryan Air, Mike Brown, Director of Operations, Phone: 907-562-2227.
- Bering Air, David Olson, Director of Operations, Phone: 907-443-5464.
- Everts Air Cargo, Mike Allen and Matt Stone, Operations Dept., Phone: 907-450-2353
- Guardian Flight (Medevac), Tim Manier, Chief Pilot, Phone: 907-245-6230.
- Lynden Air Cargo, Wiley Dickenson, V.P. of Operations, Phone: 907-249-0270; and Mark Greig, Chief Pilot, Phone: 907-249-0245.
- Northern Air Cargo, Gideon Garcia, General Manager, Phone: 907-249-5105, ext. 6151, E-mail: ggarcia@nac.aero
- Pathfinder Aviation, Levi Meyer, Head Pilot, Phone: 937-638-4213, E-mail: lmeyer@pathfinderaviation.com
- RAVN, Deke Abbott, Sr. V.P. for Operations, Phone: 907-266-8369, E-mail: deke.abbott@flyravn.com
- Warbelow, Daryn Young, Director of Operations, Phone: 907-474-0518.
- Wright Air Service, Everett Leaf, Phone: 907-747-0502, E-mail: eleaf@wrightairservice.com

14.2.3 Miscellaneous:

- North Slope Borough, Ken Green, Project Administrator for Borough Airports, 907-646-8274.
- U.S. Postal Service, Japhet DeVien, Deputy Network Specialist, Anchorage, Phone: 907-266-3265.
- U.S. Postal Service, Ron Haberman, District Manager, Anchorage, Phone: 907-261-5418.
- Alaska Department of Transportation and Public Facilities, Tammi Schreier, Northern Region Airport Planning (Security), Phone: 907-451-5250.

15 ABBREVIATIONS

AASP	Alaska Aviation System Plan
AC	Advisory Circular
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALS	Approach Lighting System
ARC	Airport Reference Code
ARFF	Airport Rescue and Fire Fighting
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
AVGAS	Aviation Gasoline
ASOS	Automated Surface Observing System
AWOS	Automated Weather Observing System
BRL	Building Restriction Line
DOT&PF	Alaska Department of Transportation and Public Facilities
DCCED	Alaska Department of Commerce, Community, and Economic Development
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
GA	General Aviation
GPS	Global Positioning System
HIRL	High Intensity Runway Lights
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LIRL	Low Intensity Runway Lights
MALS	Medium Intensity Approach Light System
MALSF	Medium Intensity Approach Light System with sequence flashing Lights
MALSR	Medium-Intensity Approach Lighting System with Runway Alignment Indicators
MIRL	Medium Intensity Runway Lights
MITL	Medium Intensity Taxiway Lights
NAVAID	Air Navigation Facility/Aid
NDB	Non-Directional Beacon
NPIAS	National Plan of Integrated Airport Systems
ODALS	Omnidirectional Approach Lighting Systems
OFA	Object Free Area
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
RAIL	Runway Alignment Indicator Lights
RCO	Remote Communications Outlet
REIL	Runway End Identifier Lights
RSA	Runway Safety Area
RPZ	Runway Protection Zone
RVR	Runway Visual Range
SEP	Single Engine Piston
TAF	FAA Terminal Area Forecasts
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
WAAS	Wide Area Augmentation System

16 GLOSSARY

Activity - Used in aviation to refer to any kind of movement (e.g. passenger enplanements).

Advisory Circular (AC) - A series of Federal Aviation Administration (FAA) publications providing guidance and standards for the design, operation and performance of aircraft and airport facilities.

Airport Improvement Program (AIP) - A congressionally mandated program through which the FAA provides funding assistance for the development and enhancement of airport facilities.

Air Cargo - Air Carrier freight, including express packages and mail, transported by passenger or all-cargo airlines.

Air Carrier - An airline providing scheduled air service for the transport of passengers or cargo.

Air Navigation Facility (NAVAID) - Although generally referring to electronic radio wave transmitters (VOR, NDB, ILS), it also includes any structure or mechanism designed to guide or control aircraft involved in flight operations.

Air Route Traffic Control Center (ARTCC) - FAA-manned facility established to provide air traffic control services to aircraft operating in controlled airspace, en route between terminal areas. Although designed to handle aircraft operating under IFR conditions, some advisory services are provided to participating VFR aircraft when controller workloads permit.

Air Taxi - An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Air taxi operators generally operate small aircraft "for hire" for specific trips.

Aircraft Operations - The airborne movement of aircraft. For purposes of accounting for air traffic activity, an operation is either a takeoff or a landing, thus each flight is two operations. There are two types of operations: local and itinerant defined as follows:

1. Local Operations are performed by aircraft which:
 - (a) Operate in the local traffic pattern or within sight of the airport;
 - (b) Are known to be departing for or arriving from a local practice area.
2. Itinerant operations are all others.

Airport Reference Code (ARC) - A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. It is a combination of the aircraft approach category and the airplane design group.

Approved Instrument Approach - Instrument approach meeting the design requirements, equipment specifications, and accuracies, as determined by periodic FAA flight checks, and which are approved for general use and publication by the FAA.

Apron - A defined area where aircraft are maneuvered and parked and where activities associated with the handling of flights can be carried out.

Based Aircraft - Aircraft stationed at an airport on an annual basis.

Capital Improvement Program (CIP) - A scheduled of planned projects and costs, often prepared and adopted by public agencies.

Charter - A nonscheduled flight offered by either a supplemental or certificated air carrier.

Commuter Air Carrier - An air carrier certificated in accordance with FAR Part 135 which operates aircraft with a maximum of 60 seats and provides at least five scheduled round trips per week between two or more points, or carries mail.

Control Tower - A central operations facility in the terminal air traffic control system consisting of a tower cab structure using air/ground communications and/or radar, visual signaling, and other devices to provide safe and expeditious movement of air traffic.

Critical Aircraft - The aircraft which controls one or more design items based on wingspan, approach speed and/or maximum certificated take-off weight. The same aircraft may not be critical to all design items.

Federal Aviation Administration (FAA) - A branch of the U.S. Department of Transportation responsible for the regulation of all civil aviation activities.

Fixed Base Operator (FBO) - An individual or company located at an airport providing Air Carrier general aviation services.

Fixed Wing - For the purposes of this report, any aircraft not considered rotorcraft.

Flight - The arrival of an aircraft at an airfield. Each flight at a location counts for two operations, a landing and a takeoff.

Flight Service Station (FSS) - Air traffic facility operated by the FAA to provide flight service assistance such as pilot briefing, en route communications, search and rescue assistance and weather information.

General Aviation - All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

Global Positioning System (GPS) - GPS uses a group of many satellites orbiting the earth to determine the position of users on or above the earth's surface. This system will provide at least non-precision approach capability to any airport having published instrument approach procedures.

Instrument Flight Rules (IFR) - These rules govern the procedures for conducting instrument flight. Pilots are required to follow these rules when operating in controlled airspace with visibility of less than three miles and/or ceiling lower than 1,000 feet.

Instrument Landing System (ILS) - ILS is designed to provide an exact approach path for alignment and descent of aircraft. Generally consists of a localizer, glide slope, outer marker, middle marker, and approach lights. This type of precision instrument system is being replaced by Microwave Landing Systems (MLS).

Instrument Runway - A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been approved.

Itinerant - All aircraft and operations at an airport other than local.

Local - Aircraft and operations in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.

Medium-Intensity Approach Lighting (MALSR) - This system includes runway alignment indicator lights. An airport lighting facility which provides visual guidance to landing aircraft.

Navigational Aid (NAVAID) - Any visual or electronic device airborne or on the surface which provides point to point guidance information or position data to aircraft in flight.

Non-Directional Beacon (NDB) - Transmits a signal on which a pilot may "home" using equipment installed in the aircraft.

Non-Precision Instrument Approach - An instrument approach procedure with only horizontal guidance or area-type navigational guidance for straight-in approaches.

Omnidirectional Approach Lighting System (ODALS) - ODALS consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway.

Operation - A landing or a takeoff at a particular airfield. A flight is equal to two operations.

Part 121 Air Carrier - Domestic, Flag, and Supplemental operations. Airplanes having a passenger seating configuration of more than 30 seats, excluding any required crew member seating, or a payload capacity of more than 7,500 pounds (regulated under 14 CFR Part 121).

Part 135 Air Carrier - Commuter and On-Demand operations. Airplanes having passenger seating configuration of not more than 30 seats excluding any required crew member seating (regulated under 14 CFR Part 135).

Precision Approach Path Indicator (PAPI) - Provides visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity focused light beams.

Precision Instrument Approach - An instrument approach procedure in which electronic vertical and horizontal guidance is provided, e.g. ILS and MLS.

Rotorcraft (e.g. Helicopter) - A heavier-than-air aircraft supported in flight by the reactions of the air on one or more power-driven rotors on substantially vertical axis.

Runway End Identifier Lights (REIL) - These lights aid in early identification of the approach end of the runway.

Runway Safety Area (RSA) - A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

VASI - Visual Approach Slope Indicator. See definition of PAPI.

Visual Flight Rules (VFR) - Flight rules by which aircraft are operated by visual reference to the ground. Weather conditions for flying under these rules must include a ceiling greater than 1,000 feet, three-mile visibility, and standard cloud clearance.

Wide Area Augmentation System (WAAS) - WAAS uses ground stations and several satellites orbiting the earth to augment the GPS signal and provide more accurate position information. This system will provide precision approach capability to any airport having published instrument approach procedures.

Wind Coverage - Wind coverage is the percentage of time for which aeronautical operations are considered safe due to acceptable crosswind components.

APPENDIX A

Table A.1: Based Aircraft and Operations for Northwest Alaska Airports

Community	Based Aircraft			Annual Operations						Operations Date
	Single Engine	Other Aircraft	Total Aircraft	Air Carrier	Air Taxi	GA Local	GA Itinerant	Military	Total Operations	
Allakaket	0	0	0		1,200				1,200	12/31/2016
Ambler	1	0	1		5,000				5,000	12/31/2016
Anaktuvuk Pass	0	0	0		3,200		400		3,600	12/31/2016
Atkasuk	0	0	0		500		30		530	12/31/2016
Barter Island/Kaktovik	0	0	0		2,500		800	50	3,350	12/31/2015
Bettles	10	1	11		1,000	1,000	2,000	150	4,150	12/31/2016
Brevig Mission	0	0	0		70				70	12/31/2016
Buckland	1	0	1		4,250				4,250	12/31/2016
Chandalar Camp	0	0	0		2,500	1,600	7,200		11,300	12/31/2016
Dahl Creek	0	0	0	5	20				25	12/31/2016
Deadhorse	3	7	10	5,616	3,432	9,126	3,000	150	21,324	12/31/2017
Deering	0	0	0		3,500				3,500	12/31/2016
Diomede	0	0	0		224			10	234	12/31/2014
Elim	0	0	0		200				200	12/31/2016
Galbraith Lake	0	0	0	26	175	90	60		351	12/31/2016
Galena	10	3	13	3,000	1,000	4,000	9,000	2,000	19,000	12/31/2016
Gambell	0	0	0	1,652	0		0		1,652	12/31/2014
Golovin	0	0	0		700				700	12/31/2016
Hughes	0	0	0		1,095		365	20	1,480	12/31/2016
Huslia	1	0	1		1,500				1,500	12/31/2016
Kaltag	0	0	0		700				700	12/31/2016
Kiana	0	0	0		5,000				5,000	12/31/2016
Kivalina	0	0	0		5,000				5,000	12/31/2016
Kobuk	0	0	0		500				500	12/31/2016
Kotzebue	37	6	43	2,000	20,000	7,000	30,000	1,000	60,000	12/1/2014
Koyuk	0	0	0		1,000				1,000	12/31/2016
Koyukuk	0	0	0		170				170	12/31/2016
Manley Hot Springs	7	0	7		500	800	400		1,700	12/31/2016
Minto	0	0	0		500		500		1,000	12/31/2016

	Based Aircraft			Annual Operations						
Nenana	15	0	15		2,500	1,500	2,000		6,000	12/31/2013
Noatak	0	0	0		5,000				5,000	12/31/2016
Nome	51	20	71	1,525	14,950	4,750	4,750	1,475	27,450	12/30/2016
Noorvik	0	0	0		5,000				5,000	12/31/2016
Nuiqsut	0	0	0		1,500		100	200	1,800	12/31/2016
Nulato	1	0	1		700				700	12/31/2016
Point Hope	0	0	0		1,200	0	0		1,200	12/31/2016
Point Lay	0	0	0		156			52	208	12/31/2016
Rampart	0	0	0	0	300	0	0	0	300	12/31/2014
Ruby	2	0	2		700				700	12/31/2016
Savoonga	0	0	0	256				4	260	12/31/2014
Selawik	0	0	0		5,750				5,750	12/31/2016
Shaktoolik	0	0	0		700				700	12/31/2016
Shishmaref	0	0	0		1,000				1,000	12/31/2016
Shungnak	0	0	0		5,000				5,000	12/31/2016
St Michael	0	0	0		700				700	12/31/2016
Stebbins	0	0	0		500				500	12/31/2016
Tanana	0	0	0		1,350	1,200	500	50	3,100	12/31/2016
Teller	0	0	0		500				500	12/31/2016
Umiat	0	0	0		100		100		200	12/31/2016
Unalakleet	12	2	14		3,650	38			3,688	12/31/2016
Utqiagvik (Barrow)	3	5	8	1,460	6,000	3,000	1,500	50	12,010	12/31/2014
Wainwright	0	0	0		800		300		1,100	12/31/2016
Wales	0	0	0		300				300	12/31/2016
White Mountain	0	0	0		700				700	12/31/2016
Grand Total	154	44	198	15,540	124,492	34,104	63,005	5,211	242,352	

Source: FAA Airport Master Record (5010) data, downloaded in late 2018.

Table A.2: Community and Transportation Data for Northwest Alaska

Community	Population in 2017	CY17 Enplanements	Health Care Facility	School	Post Office	Road Connection	Barge Landing	Essential Air Service Subsidy	Bypass Mail Hub
Allakaket	164	1,819	Clinic	Yes	Yes	No	No		Fairbanks
Ambler	284	2,175	Clinic	Yes	Yes	No	Yes		Kotzebue
Anaktuvuk Pass	355	3,856	Clinic	Yes	Yes	No	No		Fairbanks
Atkasuk	224	2,335	Clinic	No	Yes	No	No		Utuqiaqvik
Barter Island/Kaktovik	234	3,212	Clinic	Yes	Yes	No	Yes		Fairbanks
Bettles	9	1,835	Clinic	Yes	Bettles Field	No	No		Fairbanks
Brevig Mission	425	2,413	Clinic	Yes	Yes	No	Yes		Nome
Buckland	510	4,456	Clinic	Yes	Yes	No	Yes		Kotzebue
Chandalar Camp			No	No	No	Yes			
Dahl Creek		128	No	No	No	No			
Deadhorse	2,174	41,849	Clinic	No	Yes	Yes	No		Fairbanks
Deering	154	1,536	Clinic	Yes	Yes	No	Yes		Kotzebue
Diomedes Island	102	88	Clinic	Yes	Yes	No	Yes	Yes	Nome
Elim	369	2,313	Clinic	Yes	Yes	No	Yes		Nome
Galbraith Lake		856	No	No	No	Yes			
Galena	472	9,664	Health Center	Yes	Yes	No	Yes		
Gambell	714	3,493	Clinic	Yes	Yes	No	Yes		Savoonga
Golovin	172	2,029	Clinic	Yes	Yes	No	Yes		Nome
Hughes	95	1,087	Clinic	Yes	Yes	No	Yes		Galena
Huslia	293	2,897	Clinic	Yes	Yes	No	Yes		Galena
Kaltag	161	1,626	Clinic	Yes	Yes	No	Yes		Galena
Kiana	417	3,485	Clinic	Yes	Yes	No	Yes		Kotzebue
Kivalina	417	3,454	Clinic	Yes	Yes	No	Yes		Kotzebue
Kobuk	145	1,357	Clinic	Yes	Yes	No	Yes		Kotzebue
Kotzebue	3,154	67,951	Hospital	Yes	Yes	No	Yes		
Koyuk	342	2,342	Clinic	Yes	Yes	No	Yes		Unalakleet
Koyukuk	95	870	Clinic	Yes	Yes	No	Yes		Galena
Manley Hot Springs	112	101	Clinic	Yes	Yes	Yes	Yes	Yes	Fairbanks
Minto	201	201	Clinic	Yes	Yes	Yes	No	Yes	Fairbanks
Nenana	372	4	Clinic	Yes	Yes	Yes	Yes		Fairbanks
Noatak	580	4,716	Clinic	Yes	Yes	No	No		Kotzebue
Nome	3,691	61,651	Hospital	Yes	Yes	No	Yes		N/A

Community	Population in 2017	CY17 Enplanements	Health Care Facility	School	Post Office	Road Connection	Barge Landing	Essential Air Service Subsidy	Bypass Mail Hub
Noorvik	669	4,444	Clinic	Yes	Yes	No	Yes		Kotzebue
Nuiqsut	482	2,362	Clinic	Yes	Yes	No	Yes		Utqiagvik
Nulato	239	2,440	Clinic	Yes	Yes	No	Yes		Galena
Point Hope	677	4,964	Clinic	Yes	Yes	No	Yes		Kotzebue
Point Lay	232	1,859	Clinic	Yes	Yes	No	Yes		Utqiagvik
Rampart	54	621	Clinic	Yes	Yes	No	Yes		Fairbanks
Ruby	170	1,982	Clinic	Yes	Yes	No	Yes		Galena
Savoonga	389	4,188	Clinic	Yes	Yes	No	Yes		Nome
Selawik	758	5,260	Clinic	Yes	Yes	No	Yes		Kotzebue
Shaktolik	861	2,779	Clinic	Yes	Yes	No	Yes		Unalakleet
Shishmaref	278	3,360	Clinic	Yes	Yes	No	Yes		Nome
Shungnak	561	2,360	Clinic	Yes	Yes	No	Yes		Kotzebue
St. Michael	291	2,641	Clinic	Yes	Yes	No	Yes		Unalakleet
Stebbins	645	2,687	Clinic	Yes	Yes	No	Yes		Unalakleet
Tanana	225	2,633	Clinic	Yes	Yes	No	Yes		Fairbanks
Teller	251	1,499	Clinic	Yes	Yes	No	Yes		Nome
Umiat		56	No	No	No	No	No		N/A
Unalakleet	745	16,111	Health Center	Yes	Yes	No	Yes		N/A
Utqiagvik (Barrow)	4,474	45,958	Hospital	Yes	Yes	No	Yes		N/A
Wainwright	570	3,756	Clinic	Yes	Yes	No	Yes		Utqiagvik
Wales	178	1,298	Clinic	Yes	Yes	No	Yes		Nome
White Mountain	212		Clinic	Yes	Yes	No	Yes		Nome

Sources: Alaska Aviation System Plan webpage; Alaska Department of Commerce, Community, and Economic Development Community database; FAA Weather Camera List; Alaska Department of Education Schools List; U.S. Postal Service list of Post Offices in Alaska, Essential Air Service Subsidy Report for Alaska, Sept. 2018; Bypass Mail in Alaska Handbook; Directory of Health Clinics in Rural Alaska; and Southeast Strategies.

Table A.3: Runway Surface, Size, and Amenities for Northwest Alaska Airports

Community	NPAIS Level of Service	RWY Length/Width (feet)	RWY Surface	ALP Date	ALP ARC Existing	Fuel Type Available	Aircraft Repair	Passenger Shelter	Utilities Available	Public Toilet
Allakaket	General Aviation	4,000/100	GRAVEL-G	2009	B-II			No	Electricity	No
Ambler	General Aviation	2,410/60	GRVL-DIRT-F	2013	A-I		NONE	Yes	Electricity	No
Anaktuvuk Pass	Commercial Service	4,800/100	GRAVEL-G		B-II		NONE	No	Electricity	No
Atkasuk	General Aviation	4,370/90	GRAVEL-G		B-I		NONE	No	Electricity	No
Barter Island/Kaktovik	General Aviation	4,500/100	GRAVEL-G		B-II		NONE	No	Electricity	No
Bettles	General Aviation	5,190/150	GRVL-G	1995	C-IV	100LLA1+ B		Yes	Electricity	No
Brevig Mission	General Aviation	2,990/100	GRVL-G	2003	A-I			No		No
Buckland	Commercial Service	3,200/75	GRAVEL-G	2005	B-II			No	Electricity	No
Chandalar Camp	General Aviation	2,529/70	GRAVEL-G	2003	B-I		NONE	No		No
Dahl Creek	Utility	4,780/75	GRAVEL-G	1986	B-III		NONE	No		No
Deadhorse	Primary	6,500/150	ASPH-G	2011	C-IV	100 A	NONE	Yes	Electricity	Yes
Deering	General Aviation	2,660/75	GRVL-DIRT-G	2005	B-II		NONE	No	Electricity	No
Diomedede Island	General Aviation	64/64	CONC-G					No	Electricity	No
Elim	General Aviation	3,401/60	GRVL-DIRT-G	2008	B-II		NONE	No	Electricity	No
Galbraith Lake	General Aviation	5,182/150	GRAVEL-G	2010	B-II		NONE	No	Electricity	No
Galena	Primary	6,000/150	ASPH-CONC-F	2015		100LLA		No	Electricity	Yes
Gambell	Commercial Service	4,499/96	ASPH-CONC-F	2001	B-II		NONE	No	Electricity	No
Golovin	General Aviation	4,000/75	GRAVEL-F	2010	B-II			No	Electricity	No
Hughes	General Aviation	3,381/100	GRAVEL-G	2002	B-II		NONE	No	Electricity	No
Huslia	Commercial Service	4,000/75	GRAVEL-G	2003	B-II			No	Electricity	No
Kaltag	General Aviation	3,986/100	GRAVEL-G	2002	B-II		NONE	No	Electricity	No
Kiana	Commercial Service	3,400/100	GRAVEL-G	2015	B-II		NONE	No	Electricity	No
Kivalina	Commercial Service	3,000/60	GRAVEL-G	2014	A-I		NONE	No	Electricity	No
Kobuk	General Aviation	4,020/75	GRAVEL-G	2007	B-II		NONE	No	Electricity	No
Kotzebue	Primary	6,300/150	ASPH-G	2011	C-III	100 A	MINOR	Yes	Electricity	Yes
Koyuk	General Aviation	3,002/60	GRVL-DIRT-G	1994	A-I		NONE	No		No
Koyukuk	General Aviation	4,000/75	GRAVEL-G	2007	B-II		NONE	No	Electricity	No
Manley Hot Springs	General Aviation	3,400/60	GRAVEL-G	2015	B-II		MINOR	No	Electricity	Yes
Minto	General Aviation	3,400/75	GRAVEL-G	2012	A-I		NONE	No		No
Nenana	General Aviation	4,600/100	ASPH-G		B-III	100LLA	NONE	No	Electricity	No
Noatak	Commercial Service	3,992/60	GRAVEL-G	1996	B-I		NONE	No	Electricity	No
Nome	Primary	6,009/150	ASPH-G	2014	C-III	100LLA A1+	MINOR	Yes	Electricity	Yes

Community	NPAIS Level of Service	RWY Length/ Width (feet)	RWY Surface	ALP Date	ALP ARC Existing	Fuel Type Available	Aircraft Repair	Passenger Shelter	Utilities Available	Public Toilet
Noorvik	Commercial Service	4,000/100	GRVL-DIRT-G	2005	B-II			No	Electricity	No
Nuiqsut	General Aviation	4,589/100	GRAVEL-G		B-II		NONE	Yes	Electricity	No
Nulato	Commercial Service	4,011/100	GRAVEL-G	2015	B-II		NONE	No	Electricity	No
Point Hope	Commercial Service	3,992/75	ASPH-F	2004	B-II		NONE	No	Electricity	No
Point Lay	General Aviation	4,500/100	GRAVEL-G		B-II		NONE	No	Electricity	No
Rampart	General Aviation	3,520/75	GRAVEL-G	2005	B-II		NONE	No	Electricity	No
Ruby	General Aviation	4,000/100	GRAVEL-G	2000	B-II		NONE	No	Electricity	No
Savoonga	Commercial Service	4,400/100	GRAVEL-G	2012	B-II		NONE	No	Electricity	No
Selawik	Commercial Service	2,659/60	GRAVEL-G	2001	A-I		NONE	No	Electricity	No
Shaktolik	General Aviation	4,001/75	GRVL-DIRT-F	2005	B-II			No	Electricity	No
Shishmaref	Commercial Service	4,997/73	ASPH-P	2015	B-II			No	Electricity	No
Shungnak	General Aviation	4,001/60	GRAVEL-F	2005	B-I		NONE	No	Electricity	No
St. Michael	General Aviation	4,001/75	GRAVEL-G	2000	B-II			No	Electricity	No
Stebbins	Commercial Service	2,999/60	GRVL-DIRT-G	2000	B-I		NONE	Yes	Electricity	No
Tanana	Commercial Service	4,400/100	GRAVEL-G	2013	B-III		NONE	No	Electricity	Yes
Teller	General Aviation	2,983/60	GRVL-DIRT-G	2000	B-I			No	Electricity	No
Umiat	Non-NPIAS	5,583/100	GRVL-DIRT-P				NONE	No		No
Unalakleet	Primary	5,900/150	ASPH-G	2009	B-III	100LLA		Yes	Electricity	Yes
Utqiagvik (Barrow)	Primary	7,100/150	ASPH-F	2008	C-IV	100LLA1	MINOR	Yes	Electricity, GA Line	Yes
Wainwright	Commercial Service	4,494/110	GRAVEL-G		B-II		NONE	No	Electricity	No
Wales	General Aviation	3,990/75	GRAVEL-G	2006	B-II		NONE	No	Electricity	No
White Mountain	General Aviation	3,000/60	GRVL-DIRT-G	1994	B-I		NONE	No	Electricity	No

Sources: Alaska Aviation System Plan webpage <http://www.alaskaasp.com/>, includes data from FAA's Airport Master Records.

Table A.4: Lights and Navigational Aids at Northwest Alaska Airports

Community	Edge Light Intensity	Approach Lights	Seasonal Use Notes	Weather Station	Weather Camera	RCO	Approaches	Snow Removal Equipment
Allakaket	MED	UNK/UNK		No	Yes	No	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23	Yes
Ambler	MED	UNK/UNK	Soft Runway in Spring	Yes	Yes	Yes	RNAV (GPS) RWY 1	Yes
Anaktuvuk Pass	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS)-A, NDB-B	No
Atkasuk	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 6, RNAV (GPS) RWY 24, NDB RWY 6	No
Barter Island/Kaktovik	MED	UNK/UNK		Yes		Yes	RNAV (GPS) RWY 7, RNAV (GPS) RWY 25	No
Bettles	MED	MALSR/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 2, RNAV (GPS) RWY 20, VOR RWY 2	Yes
Brevig Mission	MED	UNK/UNK		Yes		Yes	RNAV (GPS) RWY 12, RNAV (GPS) RWY 30	Yes
Buckland	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 11, RNAV (GPS) RWY 29	Yes
Chandalar Camp	UNK	UNK/UNK		No	Yes	No	NONE	Yes
Dahl Creek (Kobuk)	UNK	UNK/UNK	No winter maintenance	No	No	No		No
Deadhorse	HIGH	MALSR/MALSR		Yes	Yes	Yes	ILS OR LOC RWY 6, RNAV (GPS) Z RWY 6, RNAV (GPS) Z RWY 24, VOR RWY 6, VOR Y RWY 24, VOR Z RWY 24	Yes
Deering	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 3, RNAV (GPS) RWY 12, RNAV (GPS) RWY 21, RNAV (GPS) RWY 30	Yes
Diomedede	UNK	UNK/UNK		No	Yes*	No	NONE	Yes
Elim	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 1, RNAV (GPS) RWY 19	Yes
Galbraith Lake	MED	ODALS/UNK		Yes	No	No	NONE	Yes
Galena	HIGH	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 8, RNAV (GPS) RWY 26	Yes
Gambell	MED	UNK/ODALS		Yes	Yes	Yes	RNAV (GPS) RWY 16, RNAV (GPS) RWY 34, NDB/DME RWY 34, NDB RWY 16	Yes
Golovin	MED	UNK/UNK	Soft Runway in Spring	Yes	Yes	Yes	RNAV (GPS) RWY 3, RNAV (GPS)-A	No
Hughes	MED	UNK/UNK		No	No	No	NONE	Yes
Huslia	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 3, RNAV (GPS) RWY 21, VOR/DME RWY 3	Yes
Kaltag	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 3, RNAV (GPS) RWY 21	Yes
Kiana	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 6, RNAV (GPS) RWY 24	Yes
Kivalina	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 12, RNAV (GPS) RWY 30	Yes

Community	Edge Light Intensity	Approach Lights	Seasonal Use Notes	Weather Station	Weather Camera	RCO	Approaches	Snow Removal Equipment
Kobuk	MED	UNK/UNK		No	No	No	RNAV (GPS) RWY 9, RNAV (GPS) RWY 27	Yes
Kotzebue	HIGH	UNK/UNK		Yes	Yes	Yes	ILS OR LOC RWY 9, RNAV (GPS) Z RWY 9, RNAV (GPS) Z RWY 27, VOR RWY 9, VOR RWY 27	Yes
Koyuk	MED	UNK/UNK	Soft Runway in Spring	Yes	Yes	Yes	RNAV (GPS) RWY 1, NDB RWY 1	Yes
Koyukuk	MED	UNK/UNK		No	No	No	RNAV (GPS) RWY 6, RNAV (GPS) RWY 24	Yes
Manley Hot Springs	MED	UNK/UNK		Yes	No	No	RNAV (GPS) RWY 18, RNAV (GPS) RWY 36	Yes
Minto	MED	UNK/UNK		No	Yes	No	NONE	Yes
Nenana	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 4L, NDB RWY 4L	No
Noatak	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 1, RNAV (GPS) RWY 19	Yes
Nome	HIGH	UNK/MALSR		Yes	Yes	Yes	ILS Y OR LOC Y RWY 28, ILS Z OR LOC Z RWY 28, RNAV (GPS) RWY 3, RNAV (GPS) 10, RNAV (GPS) 28, LOC/DME BC RWY 10, VOR/DME RWY 10, VOR RWY 28. NDB-A	Yes
Noorvik	MED	UNK/UNK		Yes	No	No	RNAV (GPS) RWY 6, RNAV (GPS) RWY 24	Yes
Nuiqsut	HIGH	MALSF/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23	No
Nulato	MED	UNK/UNK		No	Yes	No	RNAV (GPS) RWY 3, RNAV (GPS) RWY 21	Yes
Point Hope	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 1, RNAV (GPS) RWY 19, NDB RWY 1, NDB RWY 19	Yes
Point Lay	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23, NDB RWY 5	No
Rampart	MED	UNK/UNK		No	No	No	NONE	Yes
Ruby	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 3, RNAV (GPS) RWY 21	Yes
Savoonga	MED	UNK/UNK	Winter drifts	Yes	Yes	Yes	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23, VOR/DME RWY 23, VOR RWY 23	Yes
Selawik	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 4, RNAV (GPS) RWY 27, RNAV (GPS) Y RWY 22, RNAV (GPS) Z RWY 22, VOR RWY 4, VOR RWY 22	Yes
Shaktolik	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 14, RNAV (GPS) RWY 32	Yes
Shishmaref	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23, NDB RWY 5	Yes
Shungnak	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 9, RNAV (GPS) RWY 27	Yes
St Michael	MED	UNK/UNK		Yes	Yes	No	NONE	Yes

Community	Edge Light Intensity	Approach Lights	Seasonal Use Notes	Weather Station	Weather Camera	RCO	Approaches	Snow Removal Equipment
Stebbins	MED	UNK/UNK		No	No	No	NONE	Yes
Tanana	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 7, VOR/DME RWY 7	Yes
Teller	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 7, RNAV (GPS) RWY 25	Yes
Umiat	UNK	UNK/UNK	No winter maintenance	No	No	No	NONE	Yes
Unalakleet	HIGH	MALSR/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 33, RNAV (GPS)-A, LOC RWY 15, VOR-D	Yes
Utqiagvik (Barrow)	HIGH	MALSR/UNK		Yes	Yes	Yes	ILS OR LOC RWY 7, RNAV (GPS) RWY 7, RNAV (GPS) RWY 25, LOC BC RWY 25, VOR RWY 25	Yes
Wainwright	MED	UNK/UNK		Yes	Yes	Yes	RNAV (GPS) RWY 5, RNAV (GPS) RWY 23	No
Wales	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 18, RNAV (GPS) RWY 36	Yes
White Mountain	MED	UNK/UNK		Yes	Yes	No	RNAV (GPS) RWY 15, RNAV (GPS) RWY 33	Yes

Sources: Alaska Aviation System Plan webpage <http://www.alaskaasp.com/> and PDC Engineers.

*Weather camera available at the Diomedes School.

Table A.5: Airport Compliance for Northwest Alaska Airports

Community	Wind Coverage	Non-Standard Conditions	Compliant Primary RSA	Compliant Primary Runway OFZ	Compliant Primary Runway Threshold Siting	Primary Surface on Property	Compliant RPZ for Property Control	Compliant RPZ for Land Use
Allakaket	>95%	No	Yes	Yes	Yes	Yes	No	Yes
Ambler	>95%	No	Yes	Yes	Yes	Yes	Yes	No
Anaktuvuk Pass	>95%	Yes	No	Yes	No	Yes	No	No
Atkasuk	>95%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Barter Island/Kaktovik	>95%	Yes	No	Yes	Yes	Yes	No	Yes
Bettles	>95%	Yes	No	Yes	Yes	Yes	Yes	Yes
Brevig Mission	>95%	Yes	No	Yes	No	Yes	No	Yes
Buckland	N/A	No	Yes	Yes	Yes	Yes	Yes	Yes
Chandalar Camp	N/A	Yes	No	Yes	Yes	No	No	Yes
Dahl Creek	N/A	Yes	No	No	Yes	Yes	Yes	Yes
Deadhorse	>95%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deering	>95%	No	Yes	Yes	Yes	Yes	Yes	Yes
Diomedea		No			Yes	Yes	Yes	Yes
Elim	>95%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Galbraith Lake	>95%	Yes	No	Yes	Yes	Yes	Yes	No
Galena	>95%	Yes	Yes	Yes	Yes	No	Yes	Yes
Gambell	<90%		Yes	Yes	Yes	Yes	Yes	Yes
Golovin	<90%	No	Yes	Yes	Yes	Yes	Yes	No
Hughes	>95%		Yes	Yes	Yes	Yes	No	No
Huslia	>95%		Yes	Yes	Yes	Yes	Yes	Yes
Kaltag	N/A	No	Yes	Yes	Yes	Yes	Yes	Yes
Kiana	>95%	Yes	Yes	Yes	Yes	Yes	No	No
Kivalina	<90%	Yes	Yes	Yes	Yes	Yes	Yes	No
Kobuk	>95%		No	Yes	Yes	Yes	Yes	Yes
Kotzebue	>95%	Yes	No	Yes	Yes	Yes	Yes	Yes
Koyuk	<90%	Yes	Yes	Yes	Yes	Yes	No	No
Koyukuk	N/A	Yes	Yes	Yes	Yes	Yes	No	No
Manley Hot Springs	>95%		Yes	Yes	Yes	Yes	Yes	Yes
Minto	>95%	Yes	No	Yes	Yes	Yes	No	Yes
Nenana	>95%	Yes	No	No	No	Yes	No	Yes
Noatak	>95%	No	Yes	Yes	Yes	Yes	Yes	Yes

Community	Wind Coverage	Non-Standard Conditions	Compliant Primary RSA	Compliant Primary Runway OFZ	Compliant Primary Runway Threshold Siting	Primary Surface on Property	Compliant RPZ for Property Control	Compliant RPZ for Land Use
Nome	>95%	Yes	No	Yes	No	Yes	No	No
Noorvik	>95%	No	Yes	Yes	Yes	Yes	Yes	Yes
Nuiqsut	>95%	Yes	Yes	Yes	No	Yes	No	No
Nulato	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Point Hope	<90%	Yes	No	Yes	Yes	Yes	Yes	Yes
Point Lay	>95%	Yes	No	Yes	Yes	Yes	No	Yes
Rampart	N/A	Yes	Yes	Yes	Yes	Yes	No	Yes
Ruby	<90%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Savoonga	<90%	Yes	No	Yes	Yes	Yes	Yes	Yes
Selawik	>95%		Yes	Yes	Yes	Yes	Yes	No
Shaktolik	>95%	No	Yes	Yes	No	Yes	Yes	Yes
Shishmaref	<90%	No	Yes	Yes	Yes	Yes	Yes	Yes
Shungnak	>95%		Yes	Yes	Yes	Yes	Yes	Yes
St Michael	>95%	Yes	No	Yes	Yes	Yes	Yes	Yes
Stebbins	N/A	No	Yes	Yes	Yes	Yes	Yes	Yes
Tanana	>95%	Yes	No	Yes	Yes	Yes	Yes	No
Teller	<90%	No	Yes	Yes	Yes	Yes	Yes	Yes
Umiat	N/A	No	Yes	Yes	Yes	No	Yes	Yes
Unalakleet	>95%	Yes	No	Yes	Yes	Yes	Yes	Yes
Utqiagvik (Barrow)	<90%	Yes	No	Yes	Yes	Yes	Yes	No
Wainwright	>95%	Yes	No	Yes	Yes	Yes	Yes	Yes
Wales	<90%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
White Mountain	N/A	Yes	No	Yes	Yes	Yes	Yes	Yes

Source: FAA Airport Master Record (5010) data, downloaded in late 2018.

Table A.6: Transportation Options by Community in Northwest Alaska

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Allakaket	No	No	No	No	Allakaket has no road link, but winter trails connect it with Hughes, Bettles, and Tanana. River transportation is important in summer, but there is no commercial barge access due to shallow water. A state-owned gravel runway is accessible year-round.
Ambler	No	Yes	Yes	No	Ambler's major means of transportation are by barge, plane, small boat, and snow machine. There are no roads linking the city to other parts of the state. A state-owned lighted, gravel airstrip, with a gravel crosswind airstrip is located one and a half miles from the city. In addition, daily scheduled services are provided out of Kotzebue, and air taxis provide charter flights. Crowley Marine Services barges fuel and supplies to Ambler each summer. Boats are used for inter-village travel and subsistence activities. ATVs and snow machines are commonly used in winter.
Anaktuvuk Pass	No	No	No	No	A gravel airstrip is owned and operated by the North Slope Borough and provides Anaktuvuk Pass with year-round access. There is no road to Anaktuvuk Pass, all goods and services are received by air. Snow machines and ATVs are used for local transportation.
Atkasuk	No	No	No	No	Air travel provides the only year-round access, while land transportation provides seasonal access. The North Slope Borough owns and operates the Edward Burnell Sr. Memorial Airport, which has a gravel runway. 'Cat-trains' are sometimes used to transport freight overland from Utqiagvik during winter months. Snow machines, ATVs, and boats are used for local transportation.
Barter Island/Kaktovik	Yes	No	Yes	No	Air travel provides the only year-round access to Kaktovik. In addition to serving as a crucial link for passengers and cargo, aviation is also the primary means by which Kaktovik residents receive mail. The Barter Island Airport is owned by the Air Force and operated by the North Slope Borough. As of 2014, a new airport and runway are being built. In addition to air and overland transportation, marine transportation provides seasonal access to Kaktovik. Barges deliver cargo to the community during the summer. Barges are beached in front of the community, and materials are unloaded there to be hauled to the village. As of 2014, no boat ramp was present in the community, and boats were stored on the beach of Kaktovik Lagoon. The community would like a boat ramp to allow safer ocean launching of boats, and also report that the current launching area is too shallow and should be relocated.
Bettles	No	No	No	No	During four months of the year, the Bettles Winter Road, a 30-mile winter trail, gives residents access to the Dalton Highway, which leads to Fairbanks. The Koyukuk River is used in the summer, but no commercial barge is available. The state-owned airport is classified as a transport center, with a manned FAA contract weather station, a gravel runway, and a float pond. Trucks, cars, snow machines, and ATVs are used for local transportation.
Brevig Mission	Yes	No	Yes	No	Brevig Mission is accessible by air and sea and, in the winter, over land or ice. A cargo ship visits annually. The state-owned gravel airstrip with a gravel crosswind strip enables year-round access. Regular air service is available from Nome, and charters are provided from Nome and Teller. Teller is 5 miles away by boat. A 72-mile gravel road between Teller and Nome is maintained by the state during the summer.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Buckland	Yes	Yes	Yes	No	Buckland's major means of transportation are plane, small boat, barge, and snow machine; there are no roads outside of the village. Buckland has a state-owned gravel airstrip, which serves a number of scheduled and chartered flights. Crowley Marine barges in fuel and various lighterage companies deliver cargo and supplies each summer.
Chandalar Camp	No	No	No	Yes	Chandalar Camp (also called Chandalar Shelf) is a DOT&PF camp used for road and airport maintenance. It is located at about Mile 175 of the Dalton Highway, and most passenger and cargo access is by road. No commercially scheduled air traffic uses Chandalar Camp, but several air taxis use the airport to base hunting operations in spring, summer, and fall.
Dahl Creek	No	Yes	Yes	No	Dahl Creek is the location of a mining camp. It is connected to Kobuk by the Kobuk-Dahl Creek Airport Road, a 2.5 mile gravel road between Kobuk and the Dahl Creek air strip. Kobuk's major means of transportation are barge, plane, small boat, and snow machine. A state-owned lighted gravel airstrip serves scheduled air carriers. Float planes land on the Kobuk River. Crowley Marine Services barges fuel and supplies during the spring and fall, when high water stages occur. There is a barge off-loading area. Boats, ATVs, and snow machines are used for local travel. There are many trails along the river for year-round inter-village travel and subsistence activities, including a 7-mile road to Shungnak.
Deadhorse	Yes	No	No	Yes	The airport at nearby Deadhorse is the primary means of public transportation to Prudhoe Bay. The state-owned asphalt and gravel airstrip at Deadhorse is 6,500' long by 150' wide. A 5,000' by 100' wide private gravel airstrip is owned and maintained by ConocoPhillips Alaska, Inc. A state-owned heliport is located at Prudhoe Bay. The Dalton Highway is used year-round by trucks to haul cargo to the North Slope. There are no services beyond this point, and the highway is hazardous during winter months.
Deering	Yes	Yes	Yes	No	Deering is accessible year-round by plane. A state-owned gravel airstrip, with a gravel crosswind strip, enables flights by several Kotzebue air services. Fuel supplies and goods are delivered yearly by barge. Small boats, ATVs, and snow machines are used for local travel. Winter trails are available to Candle and Buckland.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Diomedes	Yes	Yes	Yes	No	Due to constant winds from the north, accessibility by air to Little Diomedes is often limited. A state-owned heliport allows for weekly mail delivery. In 2012, Diomedes was awarded grant funds to participate in the Essential Air Services program. Weekly flights by helicopter are available year round, weather permitting. There is no airstrip due to the steep slopes and rocky terrain, so ski planes must land on an ice strip in winter. Regular flights are scheduled from Nome, weather permitting. Skin boats are still a popular method of sea travel to cover the 28 miles to Wales. Cargo barge stops are irregular, due to sea or ice conditions, but deliver at least annually. There are plans to construct a breakwater and small boat harbor to allow for more regular sea travel between the Mainland and Diomedes. Transportation on Little Diomedes is primarily by foot on a system of boardwalks and trails. The boardwalks are owned by the city, though are maintained by the IRA through Bureau of Indian Affairs (BIA) funding. A project to reconstruct 1.5 miles of boardwalks was completed during the summer of 2005.
Elim	Yes	No	Yes	No	Elim is best reached by air and sea. It offers a gravel runway. Elim Native Corporation also owns a private airstrip at Moses Point. There is no dock in the village, so supplies must be lightered to shore by a company operating from Nome. Plans are underway to develop a harbor and dock, and an access road is under construction. A cargo ship brings freight annually from Nome.
Galbraith Lake	No	No	No	Yes	Galbraith Lake is a camp that provides access to the TransAlaska Pipeline Pump Station #4. It is located on the west side of the Dalton Highway, between mile 272 and 275. One proposed route from the Dalton Highway to Umiat (West Foothills Transportation Access Project) goes through Galbraith Lake.
Galena	No	Yes	Yes	No	Galena serves as the transportation and commercial center for surrounding villages in the western Interior of Alaska. The former Galena Air Force Station field, now the Edward G. Pitka, Sr. airport, has daily flights to Fairbanks through several small carriers. Barge companies use the Yukon River to deliver goods to Galena. The Yukon River is also used as a transportation corridor to nearby villages year-round. Galena has no paved roads, but there are 45 miles of gravel roadways and 276.8 miles of undeveloped roads which are used for subsistence and recreation. Pickups, cars, snow machines, skiffs, and ATVs are used for local travel. During winter, the frozen rivers are used for travel to Ruby, Koyukuk, Kaltag, and Nulato. A winter trail is available to Huslia.
Gambell	Yes	No	Yes	No	Gambell's isolated location on an island with no seaport results in heavy dependence upon air transport. The state-owned airport has an asphalt runway. Regular flights from Nome and charters from Unalakleet are available. Freight is shipped by barge from Anchorage. Winter transportation on St. Lawrence Island primarily consists of snow-machine travel over packed snow. However, these routes often traverse through treacherous landscapes that offer little or no points of reference during bad weather. Tripods were installed in 2013 marking the winter routes between Gambell and Savoonga, as well as other points on the southern part of St. Lawrence Island. An approximately 7 mile evacuation road was completed in 2013 which extends southward from the village of Gambell.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Golovin	Yes	No	Yes	No	Since there are no roads connecting the city with other areas, access to Golovin is limited to air and sea. However, in the winter the village can also be accessed over land or ice. Both scheduled and chartered flights are available from Nome. A cargo ship brings supplies once each summer from Nome. Locals are interested in a road to White Mountain. The airport was recently relocated, and a new state-owned airport with a gravel runway is available. Scheduled and chartered flights are available (weather permitting) daily from Nome. Barges cannot currently land at Golovin because there is no dock. Supplies are lightered from Nome and offloaded on the beach. There is a small boat dock and a concrete boat ramp.
Hughes	No	Yes	Yes	No	River transportation is very important to Hughes, although barge service is not reliable due to shallow water. Most fuel and heavy freight is brought in by air. A lighted, gravel 3,380' long by 100' wide runway is maintained and owned by the state. Snow machines, ATVs, and skiffs are used for local transportation. The frozen river serves as an ice road during winter and links the village to other area communities.
Huslia	No	No	Yes	No	Water travel is the principal mode of transportation during the summer. Cargo and fuel arrives by barge twice each year, in May and September. Groceries are flown in weekly by bypass mail. Huslia is accessible by air year-round. There is a 4,000' long by 75' wide lighted gravel airstrip that is owned by the state. Snowmachines, ATVs, and skiffs are used for local transportation. Huslia has a network of winter trails, and the frozen river is used as an ice road to neighboring villages.
Kaltag	No	No	Yes	No	The state-owned 3,986' long by 100' wide lighted gravel airstrip provides Kaltag with year-round air service. Barges typically deliver heavy cargo three times a year. Snowmachines, ATVs, and riverboats are used for local transportation. The frozen river, local trails, and the 90-mile Old Mail Trail to Unalakleet are used during the winter for woodcutting and trap lines.
Kiana	No	Yes	Yes	No	Kiana is primarily accessible by air, as well as small boat and snowmobile. The state-owned Bob Baker Memorial Airport has a gravel runway. Daily scheduled flights and charter flights are provided by Bering Air, ERA Alaska, and Ryan Air Service. Crowley Marine Services barges fuel and supplies to Kiana each summer, and local store owners have large boats to bring supplies upriver. Local transportation takes place using boats, ATVs, snowmobiles, and some trucks owned locally. A road connects Kiana to Kobuk camp, and a network of old trading trails is still in use.
Kivalina	Yes	Yes	Yes	No	Kivalina is not connected to any road systems, and basic modes of transportation to and from Kivalina are plane, small boat, and snowmobile. The state owns a gravel airstrip. There is daily air service from Kotzebue and twice weekly service from Point Hope. A new road was constructed in Kivalina in 2009, which doubles as a rock revetment. A road to the town's landfill as well as a dirt road which lead to the airport are no longer in use due to erosion. Two main hunting trails follow the Kivalina and Wulik Rivers and another follows the coast north to south. Northland Services barges fuel, automobiles, groceries, household goods, and general supplies to Kivalina in July and August. Cargo is shipped in daily via plane from either Anchorage or Seattle.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Kobuk	No	Yes	Yes	No	Kobuk's major means of transportation are barge, plane, small boat, and snow machine. A state-owned lighted gravel airstrip serves scheduled air carriers. Float planes land on the Kobuk River. Crowley Marine Services barges fuel and supplies during the spring and fall, when high water stages occur. There is a barge off-loading area. Boats, ATVs, and snow machines are used for local travel. There are many trails along the river for year-round inter-village travel and subsistence activities, including a 7-mile road to Shungnak.
Kotzebue	Yes	Yes	Yes	No	Air is the primary means of transportation year-round. The state-owned Ralph Wien Memorial Airport supports daily jet service to Anchorage and several air taxis to the region's villages. It has a crosswind gravel runway. A seaplane base is also operated by the state. The shipping season lasts 100 days, from early July to early October, when the sound is ice-free. Due to river sediments deposited by the Noatak River four miles above Kotzebue, its harbor is shallow. Deep draft vessels must anchor 15 miles out, and cargo is lightered to shore and warehoused. Crowley Marine Services operates shallow draft barges to deliver cargo to area communities. There are 26 miles of local gravel road used by cars, trucks, and motorcycles during the summer. Snow machines are preferred in winter for local transportation.
Koyuk	Yes	No	Yes	No	There are no roads connecting Koyuk with other villages, regular access is primarily limited to air and sea. Supplies arrive from Nome and are lightered to shore. The lack of an extensive road system increases the importance of the winter trail system. The most well-known trail is the 1,151 mile Iditarod trail from Anchorage to Nome. This trail connects the villages of Unalakleet, Shaktoolik, Koyuk, White Mountain, Koyuk, and Elim. There is also a trail connecting Koyuk to Buckland, and a coastal route between Stebbins and St. Michael, Unalakleet, Shaktoolik, Koyuk, Elim, Golovin, White Mountain and Solomon. Construction has also begun on an 18-mile road segment connecting Koyuk to Six Mile Point. There is no dock in the village, but the city has received funding from NSEDC for a fisherman's floating dock. There is a state-owned airport with a gravel runway; improvements are needed to bring the runway up to the standard minimum length of 4,000 feet. Daily flights are accommodated between Nome and Unalakleet.
Koyukuk	No	No	Yes	No	The state-owned lighted, gravel runway provides year-round transportation. The river is heavily traveled when ice-free, from mid-May through mid-October. Cargo is delivered by barge about four times each summer. Numerous local trails and winter trails to Chance and Nulato are used by residents. Snow machines, ATVs, and riverboats are used for local transportation.
Manley Hot Springs	No	No	Yes	Yes	The Elliott Highway is the only road leading to Manley Hot Springs. Goods and fuel are typically delivered by truck. The highway runs through Manley to the Tanana River Landing, three miles southwest. The Tanana River Landing is used to launch boats for fishing or transportation. Barge services are occasionally provided during summer months, but there is no docking facility due to erosion. The state-owned gravel runway is in service year-round.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Minto	No	Yes	No	Yes	Minto is located off of the Elliot Highway, about 126 miles northwest of Fairbanks. Minto has a state-maintained public airport with a gravel runway in good condition. The Tolovana River provides boat access to the Tanana and Nenana Rivers. The area is too shallow for barge service. Trucks, cars, snow machines, ATVs, and riverboats are used for transportation, recreation, and subsistence purposes. Minto receives funds from the Essential Air Services program that subsidizes the cost of commercial flights.
Nenana	No	Yes	Yes	Yes	Nenana is located in Interior Alaska, 55 road miles southwest of Fairbanks on the George Parks Highway. Nenana is located at mile 412 of the Alaska Railroad, on the south bank of the Tanana River, just east of the mouth of the Nenana River. It lies 304 road miles northeast of Anchorage. Nenana has air, river, road, and railroad access. It lies on the George Parks Highway, the road between Wasilla and Fairbanks. The railroad provides daily freight service. The Nenana Municipal Airport offers a lighted, asphalt runway and a gravel runway that doubles as a winter ski strip. There is also a float pond with parking basins. The Nenana Port Authority operates the dry cargo loading and unloading facilities, dock, bulkhead, and warehouse. The Tanana River is shallow, with a maximum draft for loaded river barges of 4.5 feet. There is a public boat launch with a recreational area to provide access to the Nenana and Tanana rivers. Daily buses to Fairbanks and Anchorage are available year-round.
Noatak	No	No	No	No	Noatak is primarily accessed by air. The state-owned lighted gravel runway is available. Six regional air services provide cargo, mail, and passenger services. There are currently no barge services to Noatak. Small boats, ATVs, and snow machines are used for local transportation. Historic trails along the Noatak River are still used for inter-village travel and subsistence activities.
Nome	Yes	Yes	Yes	No	Nome is a regional center of transportation for surrounding villages. The Port of Nome plays an essential role in regional transportation infrastructure. Nome is primarily accessible by air, although containerized household goods, building materials, vehicles, heavy equipment, and all petroleum products arrive by water during summer months. There are 10-12 cargo barges and 8-10 fuel barges/tankers that make scheduled deliveries each season. An additional trans-loading facility in the Inner Harbor was built in 2013 to address congestion at the existing barge ramp and allow more efficient transfers of cargo and rolling stock. The Small Boat Harbor plays host to about 25 commercial fishing vessels and a large offshore mining fleet which at times exceeds capacity. Alaska DOT's Snake River Bridge Replacement Project was completed in 2013 and will facilitate the increased traffic to and from the Port. Two state-owned airports are located in the community. The Nome Airport, located one mile northwest of the City, has two paved runways. Nome City Field, less than one mile north of the City, offers an additional gravel strip. Scheduled jet flights are available, as well as charter and helicopter services. Regional travel is facilitated by a network of 230 miles of gravel roads between Nome and the communities of Teller, Solomon, and Council. A network of winter trails links with outlying communities during winter months.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Noorvik	No	Yes	Yes	No	Noorvik is accessible by plane and by shallow-draft vessels, with no roads connection to other communities. The state-owned Robert (Bob) Curtis Memorial Airport has a lighted gravel runway. Several regional air taxis provide service to Kotzebue and surrounding cities. Crowley Marine Services barges fuel and supplies during the summer. Boats, ATVs, and snow machines are common means of transportation locally. Construction of two new roads, one from the old airport that will connect to the new Airport road, and the other connecting to the school, is scheduled for the summer of 2014. During the spring break up, some roads have been impacted by flooding or erosion.
Nuiqsut	No	Yes	Yes	No	Air travel provides the only year-round access. The gravel airstrip is owned and operated by the North Slope Borough. Utqiagvik is a primary air hub for surrounding villages. Mail is shipped to Nuiqsut along the Dalton Highway and then flown from Deadhorse. Coastal access for barged fuel and supply deliveries is possible during the ice-free season, which takes place for only a few weeks during the middle of summer. A 60-mile ice road reaches Nuiqsut approximately 5-7 months per year from Deadhorse and Prudhoe Bay, which are connected to the Alaska road system via the Dalton Highway. Additional trails connect Nuiqsut to Anaktuvuk Pass (140 miles) and Atkasuk (150 miles). Snowmobiles and ATVs are commonly used for local transportation. Proposed development of the Colville River Road would provide year-round access to eastern portions of the National Petroleum Reserve Area, and would include a spur road to Nuiqsut.
Nulato	No	No	Yes	No	The state-owned airstrip provides year-round access. The river is the primary mode of local transportation -- barges deliver cargo during summer months, and it becomes an ice road during winter for vehicles and snow machines. Numerous trails are used for trapping and woodcutting. Cars, trucks, snow machines, ATVs, and skiffs are used by residents.
Point Hope	Yes	Yes	Yes	No	The state-owned paved airstrip provides Point Hope's only year-round access. Skiffs, umiats (skin boats), and snow machines are used for local transportation. Barges deliver goods during summer months. Point Hope is located about ten feet above sea level and is susceptible to flooding. Beacon Hill, which is 46 feet above sea level serves as the community's evacuation point and is connected by road. The road is reinforced with a 10 foot gravel berm for protection from storm surges.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Point Lay	Yes	No	Yes	No	Point Lay is accessible year-round by air. Coastal and overland access are seasonal. The U.S. Air Force owns the public gravel airstrip in Point Lay. ERA Alaska provides direct flights from Utqiagvik and Point Hope. Barges typically leave the Seattle area by July 1 and arrive in Utqiagvik by August 1, delivering goods to North Slope Borough communities along the way. Landing craft are used to transfer goods from the barge landing sight to the community. Approximately eight miles of gravel roads are present in Point Lay. During the winter, an extensive network of trails is available for travel between communities and to subsistence sites. The trails are impassible in summer due to the presence of wetlands and many small lakes. Point Lay is connected to Point Hope, Wainwright, and Utqiagvik via a coastal trail. The trail network also connects Wainwright to Deadhorse, Nuiqsut, and Atkasuk, and Nuiqsut south to Anaktuvuk Pass. Snowmobiles are used for winter travel between communities and to subsistence camps.
Rampart	No	No	Yes	No	Rampart is located off of the Elliot Highway and Eureka Road, about 164 miles northwest of Fairbanks. Rampart has a state-maintained public airport with a gravel runway in good condition. Air transportation provides the only year-round access. A 30-mile winter trail exists from the Elliott Highway north to Rampart; it is used only during winter months. The other transportation link is the Yukon River. Fuel and other goods are delivered by barge two or three times each summer. Skiffs and snow machines are used for subsistence hunting and fishing. Rampart receives funds from the Essential Air Services program that subsidizes the cost of commercial flights.
Ruby	No	No	Yes	No	Ruby is accessible by air and water. A state-owned lighted, gravel airstrip is available. There are no docking facilities on the Yukon River, but a boat launch and barge off-loading area are available. Barges make several deliveries each summer. Float planes land on the Yukon River. Trucks, snow machines, ATVs, and riverboats are used for local transportation. Numerous trails and the 35-mile road to Long Creek Mine to the south are used for subsistence activities.
Savoonga	Yes	No	Yes	No	Savoonga's isolated location with no seaport and iced-in conditions during the winter means a dependence on air transport. There is a state-owned gravel airstrip where regular air service is available from Nome and Unalakleet. There is no dock, and supplies are lightered from Nome or off-loaded on the beach.
Selawik	No	Yes	Yes	No	Selawik is accessible by plane and barge. The Roland Norton Memorial Airport provides a gravel runway owned by the city. The state also owns a gravel airstrip with a crosswind strip. Scheduled flights are available to Kotzebue and area villages. Docking facilities and a barge landing area exist. Freight is shipped upriver from Kotzebue each summer by Crowley Marine Services. Boardwalks have been constructed within the village. Boats, ATVs, and snow machines are prevalent forms of local travel.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Shaktoolik	Yes	Yes	Yes	No	Shaktoolik is primarily accessible by air and sea. A state-owned gravel airstrip is available. The Alex Sookiayak Memorial Airstrip allows for regular service from Unalakleet. Summer travel is by ATVs, motorbikes, trucks, and boats; winter travel is by snow machine and dog team. Cargo is barged from Nome, then lightered to shore.
Shishmaref	Yes	Yes	Yes	No	Shishmaref's primary link to the rest of Alaska is by air. A state-owned paved runway is available for charter and freight services from Nome. Most people use boats for trips to the mainland.
Shungnak	No	Yes	Yes	No	Shungnak is accessible by plane, barge, or small boat. The state-owned lighted gravel runway has scheduled regional air services. Fuel and supplies are barged in each summer by Crowley Marine Services of Kotzebue. Small boats, ATVs, snow machines, and dog sleds are used for local travel and subsistence activities. Trails along the river are used for inter-village travel.
St Michael	Yes	No	Yes	No	Saint Michael is accessible by air and sea only. The state owns a gravel airstrip, and a seaplane base is available. Regular and charter flights are available from Nome and Unalakleet. It is near the Yukon River Delta and has a good natural harbor but no dock. Lighterage service is provided on a frequent basis from Nome. Saint Michael receives at least one annual shipment of bulk cargo. A 10.5-mile road exists to Stebbins.
Stebbins	Yes	No	Yes	No	Stebbins is accessible by air and sea. There is a state-owned gravel runway. Regular flights, charters, and freight services are available from Bethel. A cargo ship brings supplies annually. There is no dock, and goods must be lightered out of Nome. Overland travel in the winter is by snow machine.
Tanana	No	Yes	Yes	No	Tanana is located in Interior Alaska about two miles west of the junction of the Tanana and Yukon Rivers. The community lies 130 air miles west of Fairbanks. Tanana is accessible only by air and river transportation. The city maintains 32 miles of local roads. Work began on a new road from Manley Hot Springs to Tanana in the fall of 2013. The city operates a dock on the river; barged goods can be offloaded at a staging and storage area. The state owns and operates the Ralph M. Calhoun Memorial Airport, which has a lighted, gravel runway. Float planes land on the Yukon River. Cars, trucks, snow machines, ATVs, and riverboats are used for local transportation. Groceries and other small items are shipped to the village by air, or by barge during the barging season from May to September.
Teller	Yes	No	Yes	Yes	Teller has a road link to Nome from May to September via a 72-mile gravel road. The community can also be accessed by sea and air. There is a state-owned gravel runway with regular flights from Nome. There is no dock; goods are lightered from Nome and offloaded on the beach. Port Clarence is a nearby natural harbor.

Community	Coastal	Harbor	Barge Landing	Road Connection	Description
Umiat	No	No	No	No	Umiat is located on the Colville River, and serves as a staging area for oil and gas exploration in the National Petroleum Reserve. Air is the primary means of transportation year-round. The Umiat Airport serves as an alternative airport for the Deadhorse and Barrow airports, and is a fuel stop for aircraft and helicopters working in the area. There is currently no road connection to Umiat, but there has been investigation into building a 100-mile link between Umiat and the Dalton Highway (officially called the Foothills West Transportation Access Project). A gravel road connects Umiat village to a floating dock on the Colville River.
Unalakleet	Yes	Yes	Yes	No	Unalakleet has a state-owned gravel runway and a gravel strip. There are regular flights to Anchorage. Cargo is lightered from Nome; there is a dock. Local overland travel is mainly by ATVs, snow machines, and dogsleds in winter.
Utqiagvik (Barrow)	Yes	Yes	Yes	No	Regularly-scheduled jet services provide Utqiagvik's only year-round access. The state-owned Wiley Post-Will Rogers Memorial Airport serves as the regional transportation center for the borough. The airport has an asphalt runway. Marine (summer) and land transportation (winter ice roads) provide seasonal access.
Wainwright	Yes	Yes	Yes	No	Air travel provides Wainwright's only year-round access. A gravel airstrip is owned and operated by the North Slope Borough. A second gravel airstrip exists at the old Wainwright Air Station. Skiffs, ATVs, and snow machines are used for local transportation.
Wales	Yes	Yes	Yes	No	Wales has a state-owned gravel airstrip with scheduled air service and charter flights. Household goods are flown into the village. There is a 6.5-mile road to Tin City. Heavy freight and cargo is delivered to Tin City by barge and hauled by truck to Wales. Snow machines are used in winter. A winter trail connects Wales to the communities of Brevig Mission, located 50 miles away, and Shishmaref, located 70 miles away. Aluminum boats are used for sea travel. On land, snowmobiles and ATVs provide year-round access to subsistence areas. In previous years, fall storms have caused some flooding and damage due to high winds. The beach is used as a road by the 4-wheelers to go from one end of town to another and to go up the coast to the first inlet.
White Mountain	No	No	Yes	No	Access to White Mountain is by air and sea. There are no roads. A gravel runway is operated by the state, and scheduled flights are available daily from Nome. There is no dock in the village; supplies are lightered from Nome and offloaded on the beach. Cargo barges cannot land at White Mountain but fuel supplies can be delivered by barge, significantly lower the cost of heating fuel and gasoline.

Sources: Alaska Department of Commerce, Community, and Economic Development Community Database, HDR Alaska, and Southeast Strategies.