August 2019

Northwest Arctic Borough

Comprehensive Economic Development Strategy

Prepared for

NORTHWEST ARCTIC BOROUGH
INCORPORATED JUNE 2, 1986

Prepared by

McDowell GROUP

Northwest Arctic Borough
Comprehensive Economic Development Strategy

PREPARED FOR:

Northwest Arctic Borough

August 2019

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Acronyms and Abbreviations

ACEP	Alaska Center for Energy & Power
ADEC	Alaska Department of Environmental Conservation
ADEED	Alaska Department of Education and Early Development
ADOLWD	Alaska Department of Labor and Workforce Development
AEA	Alaska Energy Authority
AHFC	Alaska Housing Finance Corporation
AIDEA	Alaska Industrial Development and Export Authority
AMDIAP	Ambler Mining District Industrial Access Project
ANEP	Alaska Native Engineering Program
ANTHC	Alaska Native Tribal Health Consortium
ARUC	Alaska Rural Utility Cooperative
ATC	Alaska Technical Center
AVEC	Alaska Village Electric Cooperative
CDL	Commercial Driver's License
CEDS	Comprehensive Economic Development Strategy
CNA	Certified Nurse's Aide
CUAP	Community Utility Assistance Program
DMTS	DeLong Mountain Transportation System
EDA	U.S. Economic Development Administration
EDC	Economic Development Commission
GUA	Guide Use Area
H&G	headed and gutted
IHS	Indian Health Service
KEA	Kotzebue Electric Association
KIC	Kikiktagruk Iñupiat Corporation
KSFA	Kotzebue Sound Fisheries Association
kWH	kilowatt hour
Maniilaq	Maniilaq Association
MOC	Memorandum of Commitment
MOU	Memorandum of Understanding
NAB	Northwest Arctic Borough
NANA	NANA Regional Corporation, Inc.
NIHA	Northwest Iñupiat Housing Authority
NMS	NANA Management Services
NPS	US National Park Service
NWABSD	Northwest Arctic Borough School District
NWALT	Northwest Arctic Leadership Team
PCE	Power Cost Equalization
PILT	Payment in Lieu of Taxes
SWOT	Strengths, Weaknesses, Opportunities, Threats
UAA	University of Alaska Anchorage
UAF	University of Alaska Fairbanks
USPS	US Postal Service
VIC	Village Improvement Commission
VIF	Village Improvement Fund
VSW	Village Safe Water

CEDS Overview

The Northwest Arctic Borough (NAB) is the second largest region in Alaska geographically and home to approximately 7,800 residents, most of whom are Iñupiaq. The land is rich in natural and subsistence resources and scenic beauty. Despite overall increases in population, the NAB has faced continued out-migration and decreased labor force participation over the past decade. Its economy relies heavily on the mining sector, the largest private employer and by far the largest contributor to NAB government General Fund revenue. Without government support through programs like the Power Cost Equalization (PCE) program and infrastructure funding, cost burdens to households and businesses would be prohibitive. Unconnected by a unified road system, NAB depends on water and air transportation to import goods and fuel. High transportation costs, reliance on diesel fuel for heating and electricity generation, and other factors affect economic development initiatives.

To address economic development effectively, the NAB updated its five-year plan (2019-2023) Comprehensive Economic Development Strategy (CEDS). The process was managed by the Borough and the Economic Development Commission of Northwest Arctic (EDC). EDC developed a vision statement, and provided input on regional Strengths, Weaknesses, Opportunities, and Threats (SWOT), three overarching goals, nine priority objectives, and an action plan, including priority actions, timeline, responsibility, expected costs, and potential funding sources.

Vision Statement: The Northwest Arctic Borough has a robust and diverse economy supporting economic self-sufficiency and *Iñunialautaq* (good life) for all residents.	
Goal A: Improvement and Development of Critical Infrastructure	
Goal: Develop the critical utilities, transportation, energy, and housing infrastructure to lower cost burdens and adapt to climate change while preserving subsistence resources. Improved infrastructure will increase economic development investment; attract new business opportunities; grow, attract, and retain labor force; protect communities from the effects of climate change; and promote sustainability.	**Priority Objective 1:** Enact regional energy plan to reduce costs, increase capacity for bulk fuel storage, improve and increase energy efficiency, and support innovative approaches to alternative energy, where feasible. **Priority Objective 2:** Increase the number of affordable housing units in the borough. **Priority Objective 3:** Support development of Cape Blossom road and port.
Goal B: Natural Resource Development and Economic Diversity	
Goal: Develop natural resources, such as minerals, fisheries, agriculture, oil & gas, and tourism, to increase economic diversity while preserving subsistence resources. Promote revenue diversification and stability, broaden business development opportunities, and enhance employment potential in a culturally appropriate way.	**Priority Objective 1:** Seek opportunities to diversify natural resource development, including fisheries, agriculture, and others. **Priority Objective 2:** Promote economic diversification through entrepreneurship development. **Priority Objective 3:** Engage tribal governments and communities to ensure economic development is done in a culturally appropriate way. **Priority Objective 4:** Develop visitor industry opportunities in the region.
Goal C: Education and Workforce Development	
Goal: Improve academic achievement at the K-12 public education level, increase postsecondary opportunities with vocational and academic training, and enhance employability skills and local workforce. Develop and prepare workforce to meet the competitive needs of economic and business opportunities in a culturally appropriate way.	**Priority Objective 1:** Implement entrepreneurship, business, financial, and technical training for borough residents. **Priority Objective 2:** Increase transfer of culture from one generation to the next to strengthen educational outcomes.

Chapter 1: Introduction

The Northwest Arctic Borough Comprehensive Economic Development Strategy (NAB CEDS) is a five-year strategic plan for economic development. The CEDS process engages community leaders, leverages private sector involvement, and defines a strategic blueprint for regional collaboration. It is required to be updated at least every five years to qualify for U.S. Economic Development Administration (EDA) assistance under its Public Works and Economic Adjustment Assistance programs and is a prerequisite for designation by EDA as an Economic Development District.

Methodology

During the NAB Economic Development Commission's (EDC) November 5-6, 2018 meeting, EDA staff guided commissioners through a Strengths, Weaknesses, Opportunities, and Threats (SWOT) exercise as a starting point to update the 2015 CEDS. (*See Chapter 3 of this report*.) In January 2019, NAB issued an RFP for a contractor to prepare the CEDs. McDowell Group was selected and initiated work in March 2019 (*NAB Assembly Resolution 19-09)*.

Two members of McDowell Group's team traveled to Kotzebue (March 14-15) to initiate the CEDS update by meeting with Mayor Nelson and other NAB staff. A second site visit was conducted May 20-21. During this visit, attempts to visit Buckland and Deering were unsuccessful due to weather. Appendix E includes a list of community, business, and organization representatives interviewed during these visits.

McDowell Group presented an update of the CEDS process, obtained clarification of the SWOT content, and reviewed NAB's overarching goals at the June 7th NAB EDC meeting. McDowell Group staff traveled to Kotzebue for an intensive day-long work session with the EDC on July 8. EDC members provided input about development of the CEDS's vision statement along with a review of SWOT and goal-statement revisions. They also conducted a series of exercises to prioritize objectives for each of the overarching goals. Action plans for the objectives were developed, including action items, timeline, responsibility, expected costs, and potential funding sources.

Throughout this update process, McDowell Group reviewed existing plans and documents to assess overlap in economic development strategies related to NAB infrastructure, energy planning, workforce development, and community planning. The intent of these reviews was to acknowledge current initiatives and planning in the CEDS update. A list of primary documents reviewed may be found in Appendix F. Appendix F also includes a list of various data sources used to prepare the Summary Background section of this report.

A review draft of the CEDS document was submitted to NAB for internal review on July 31. A revised draft was summitted to the EDC for review and approval during its August 19th meeting. EDC forwarded the CEDS draft to the NAB Assembly for discussion and adoption on August 26, 2019.

CEDS Document Organization

This document is organized as follows:

- *Chapter 1: Introduction*, including document organization and methodology
- *Chapter 2: Summary Background*, including NAB socioeconomic data
- *Chapter 3: SWOT Analysis*, describing the economic development strengths, weaknesses, threats and opportunities
- *Chapter 4: Economic Resiliency*, highlighting the resilience themes emerging from stakeholders and socioeconomic data
- *Chapter 5: Strategic Direction*, including the CED's goals, SWOT, priority objectives, and action plan
- *Chapter 6: Evaluation Framework*, providing the measures used to track action plan performance

Appendices provide additional background information including:

- *Appendix A: Other CEDS Objectives,* providing a list of objectives not considered priority, yet are important initiatives supporting economic development
- *Appendix B: Community Profiles*, including brief socioeconomic profiles of each NAB community
- *Appendix C: CEDS Advisory Leadership and Acknowledgement*, including the departments and people involved in leading and implementing the CEDS initiative
- *Appendix D*. Key Regional Partners, providing brief descriptions of NAB's partners involved in implementing the CEDS action plan
- *Appendix E*: List of Stakeholder Interviews: providing the interviewees and organizations represented
- *Appendix F*: Reference Materials, including references for planning documents and sources of socioeconomic information and data used throughout the CEDS process

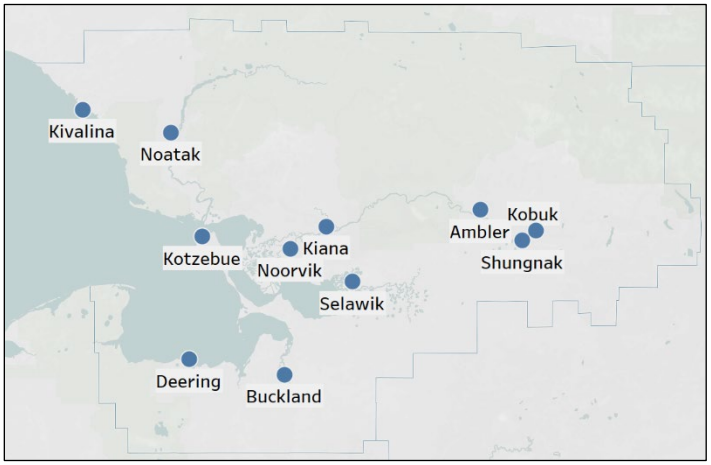
Chapter 2: Summary Background

This chapter discusses factors that affect the NAB economy and have implications for economic development strategic planning.

Regional Overview

Located in the Northwest of Alaska, the NAB is composed of 11 communities unconnected by a unified road system. (Brief community profiles can be found in Appendix B.) Kotzebue serves as the regional transportation and commerce hub. Much of the borough's 36,000 square land miles and 4,900 square water miles are above the Arctic Circle, with the borough extending from the northern coast of the Seward Peninsula in the south to the Brooks Mountain Range in the north. Principle rivers in the area, the Kobuk and Noatak rivers, flow westward into Kotzebue Sound.

Figure 1. Northwest Arctic Borough Communities



The borough's climate is characterized by long, cold winters and cool summers, with inland communities (Ambler, Kobuk, and Shungnak) often experiencing warmer summer temperatures. River and sea ice generally melt around late May and freeze in late October, providing a short maritime shipping season. Daylight extends nearly 24 hours per day in summer and decreases to only a few hours in winter.

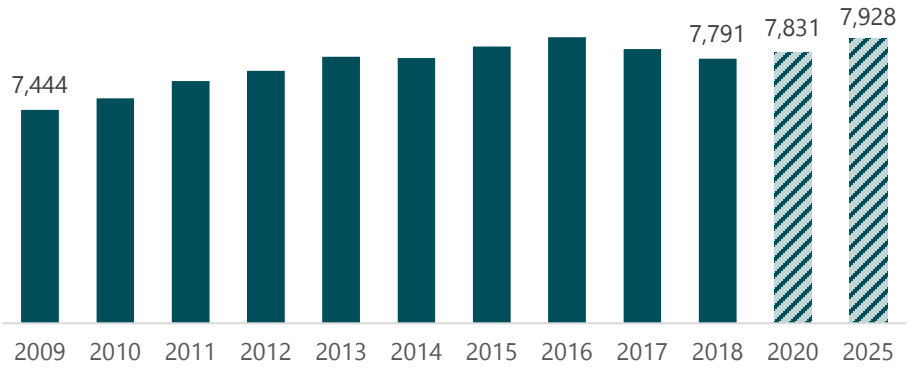
The majority of NAB residents identify as Iñupiaq People, whose culture has flourished in the region for thousands of years. Subsistence activities are an important component of the Iñupiaq culture and the borough economy, with residents harvesting caribou, reindeer, beluga whale, seal, fish, berries, and others.

Demographic and Socioeconomic Characteristics

Population

The NAB population increased by approximately 350 between 2009 and 2018. While population increased steadily between 2009 and 2016, NAB experienced two consecutive years of population decline in 2017 and 2018. Declines are not projected to persist, and population is projected to increase to 7,928 by 2025.

Figure 2. Actual and Projected Population, Northwest Arctic Borough, 2009-2025



Source: ADOLWD DRA and Population Projections, 2018.

Negative net annual migration was offset in many years over the past decade by natural population increases (births minus deaths). However, an increase in negative migration contributed to the recent overall declines.

Table 1. Components of Population Change, 2008-2018

Year	Births	Deaths	Natural Increase	Net Migration (In- minus out-migration)	Population Change	Population at End of Period
2008-09	204	54	150	-151	-1	**7,444**
2009-10	214	38	176	-64	+112	**7,556**
2010-11	212	42	170	-87	+83	**7,639**
2011-12	182	56	126	-57	+69	**7,708**
2012-13	193	37	156	-59	+97	**7,805**
2013-14	177	40	137	-147	-10	**7,795**
2014-15	156	44	112	-33	+79	**7,874**
2015-16	180	55	125	-63	+62	**7,936**
2016-17	190	58	132	-212	-80	**7,856**
2017-18	150	56	94	-159	-65	**7,791**

Source: ADOLWD DRA, 2018.

Between 2017 and 2018, more people moved out of NAB to other locations in Alaska than moved into NAB. Of 374 people leaving NAB for another Alaska community, more than half (194) moved to Anchorage, followed by the Mat-Su (49), Fairbanks (48), and Nome (31).

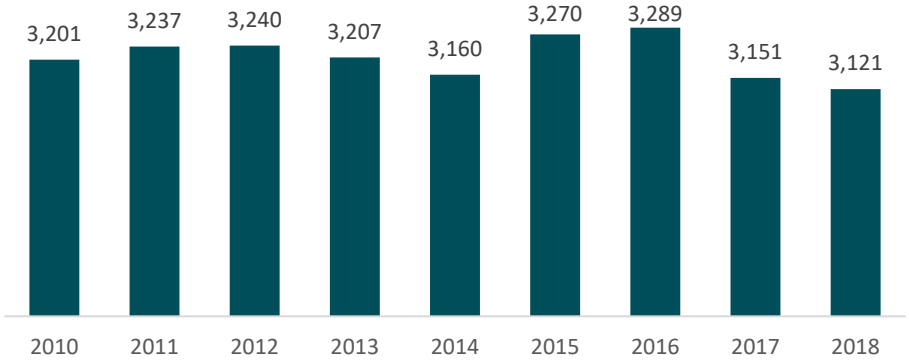
Table 2. Intra-State Migration To and From the Northwest Arctic Borough, 2017-2018*

Location	Moved to NWAB from Location	Moved from NWAB to Location	Net Migration
Municipality of Anchorage	100	194	-94
Matanuska-Susitna Borough	41	49	-8
Fairbanks North Star Borough	25	48	-23
Nome Census Area	21	31	-10
Other Alaska locations	38	52	-14
Total	**225**	**374**	**-149**

* Includes Alaska residents only.
Source: ADOLWD, PFD-Based Migration

As the Borough's largest community, Kotzebue's population is a key factor in overall NAB population. Kotzebue's population experienced a notable increase between 2014 and 2015 (approximately 110 people) before falling back to 2014 levels in 2017.

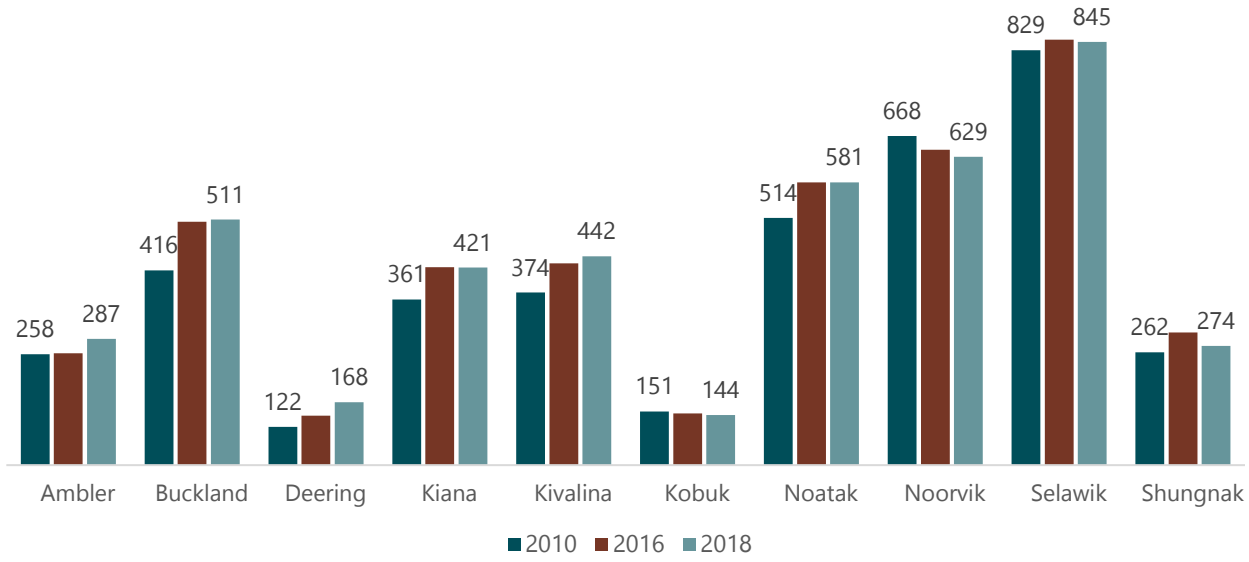
Figure 3. Population, Kotzebue, 2010 and 2018



Source: ADOLWD, DRA, 2018.

While eight of the ten non-Kotzebue communities experienced an overall population increase between 2010 and 2018, only Ambler, Kivalina, and Buckland continued to see population increases over the 2016 to 2018 period.

Figure 4. Population by Community, Northwest Arctic Borough, 2010 and 2018



Source: ADOLWD, DRA, 2018.

More than one-third (38%) of the NAB population was under 20 in 2018, 55% were working-age adults, and the remainder (7.3%) were 65 or older. While the working age population is projected to decline between 2018 and 2025, the elder population is projected to increase significantly, similar to the state overall.

Table 3. Population and Projections by Age Range, Northwest Arctic Borough, 2018 and 2025

Age Category	2018	2025 (Projected)	Percent Change
Youth (Under 20)	2,942	3,039	3.3
Working-Age (20 to 64)	4,278	4,092	-4.3
Elders (65 and Above)	571	797	39.6

Source: ADOLWD, Population and Population Projections, 2018.

Nearly 80% of NAB residents identify as Alaska Native or American Indian alone, followed by White (12%), Black or African American (1.2%), and all other races (1.1%).

Table 4. Race by Count and Percent of Total, Northwest Arctic Borough, 2017

Race	Count	Percent of Total
One race alone	**7,380**	**94.0**
Alaska Native or American Indian	6,243	79.5
White	954	12.2
Black or African American	96	1.2
Other*	87	1.1
Two or more races	**470**	**6.0**
Total	**7,850**	**100.0**
Alaska Native or American Indian alone or in any combination	6,628	84.4

* Other race alone includes Asian, Native Hawaiian or Other Pacific Islander, and other races.
Source: ADOLWD DRA, 2018.

Of Alaska Native and American Indian residents, nearly all are Iñupiat (97%). The Borough also has a smaller population of residents from other tribal groupings including Yup'ik, Aleut, Tlingit-Haida, and Athabascan.

Table 5. American Indian or Alaska Native Alone or in Combination with Another Race, by Selected Tribal Groupings, Northwest Arctic Borough, 2013-2017 Five-Year Estimates[a]

Tribal Grouping	Estimate	Percent of Total
Alaska Native, specified	**6,459**	**98.5**
Iñupiat	6,336	96.6
Yup'ik	76	1.2
Aleut	22	0.3
Tlingit-Haida	14	0.2
Alaskan Athabascan	11	0.2
Alaska Native, not specified	**89**	**1.4**
American Indian	**13**	**0.2**
Total	**6,559**	**100.0**

Note:
a. Due to large margins of error, caution is advised in interpreting these ACS estimates.
b. Due to rounding, percentages may not sum to 100.
Source: USCB ACS 2013-2017.

Among the population over age 25, 81% of NAB residents have at least a high school diploma or equivalent. This includes 16% of residents with an associates, bachelors, or graduate degree.

Table 6. Distribution of Educational Attainment of Population Aged 25 Years and Older, Northwest Arctic Borough, 2013-2017 Five-Year Estimate

Educational Attainment	Count	Percent of Total
No high school diploma	789	19.3
High school	1,902	46.4
Some college	766	18.7
Associate degree	197	4.8
Bachelor's degree	292	7.1
Graduate or professional degree	149	3.6
Associates degree or higher	**638**	**15.5**

Source: USCB ACS, 2013-2017.

Labor Force

Labor force participation in the NAB was 2,924 people in 2018, representing approximately 55% of the working age population. Of those in the labor force, 2,508 (86%) were employed and 416 (14%) were unemployed.

Despite an increase in the working-age population between 2009 and 2018, the NAB labor force participation rate declined. The employment rate also declined steadily over the decade, decreasing 4.7% between 2009 and 2018. The unemployment rate had larger fluctuations, with pronounced unemployment increases in 2010 and 2011 and a notable decline in 2018.

Table 7. Employment, Unemployment and Labor Force Participation, Northwest Arctic Borough, 2009-2018

Year	Employment		Unemployment		Labor Force Participation		Population 16+
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	
2009	2,632	88.1	356	11.9	2,988	59.0	5,062
2010	2,560	86.6	397	13.4	2,957	57.8	5,112
2011	2,524	84.5	463	15.5	2,987	57.6	5,184
2012	2,554	84.3	477	15.7	3,031	57.8	5,248
2013	2,564	83.6	504	16.4	3,068	58.0	5,292
2014	2,494	83.0	512	17.0	3,006	56.2	5,346
2015	2,445	84.0	466	16.0	2,911	53.9	5,405
2016	2,490	84.0	474	16.0	2,964	54.5	5,434
2017	2,486	83.8	479	16.2	2,965	55.0	5,390
2018	2,508	85.8	416	14.2	2,924	54.6	5,360
Change 2009-2018	**-124**	**-4.7**	**60**	**16.9**	**-64**	**-2.1**	**298**

Source: ADOLWD, Labor Force Data, 2018.

Wage and salary employment in NAB varies slightly by season, with employment slightly higher in the second half of the year (July through December).

Table 8. Wage and Salary Employment by Month, Northwest Arctic Borough, 2018

Month	Employment
January	2,731
February	2,771
March	2,791
April	2,867
May	2,910
June	2,824
July	2,922
August	3,010
September	3,022
October	3,136
November	3,084
December	3,066
Annual Average	**2,928**

Source: ADOLWD, Quarterly Census of Employment and Wages, 2019.

In 2017, more than 90% of total employment in the NAB was in wage and salary jobs, with the remainder representing self-employed individuals. Both components of employment declined between 2008 and 2017, but self-employment decreased at a higher rate (9.0%) with fluctuations over the decade.

Table 9. Employment Type, Northwest Arctic Borough, 2008-2017

Year	Wage and Salary Employment		Self-Employment		Total Employment	
	Number	Percent Change	Number	Percent Change	Number	Percent Change
2008	2,981	-	289	-	3,270	-
2009	2,966	-0.5	281	-2.8	3,247	-0.7
2010	3,009	1.4	300	6.8	3,309	1.9
2011	2,965	-1.5	275	-8.3	3,240	-2.1
2012	2,978	0.4	279	1.5	3,257	0.5
2013	3,013	1.2	265	-5.0	3,278	0.6
2014	2,950	-2.1	306	15.5	3,256	-0.7
2015	2,957	0.2	259	-15.4	3,216	-1.2
2016	2,903	-1.8	256	-1.2	3,159	-1.8
2017	2,902	0.0	263	2.7	3,165	0.2
Change 2008-2017	**-79**	**-2.7**	**-26**	**-9.0**	**-105**	**-3.2**

Source: Bureau of Economic Analysis, 2018.

Approximately two-thirds of jobs were with private sector employers in 2017, with the remaining one-third employed by public organizations including federal, state, local and tribal governments. While private sector employment remained relatively flat between 2008 and 2017, public employment decreased by 9.5% over the same period. Government employment declines were most significant in 2016 and 2017.

Table 10. Employment by Sector, Northwest Arctic Borough, 2008-2017

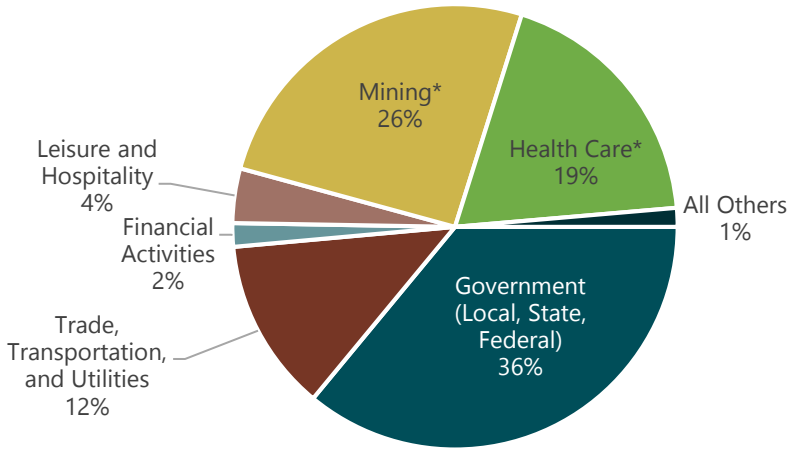
Year	Private Sector		Public Sector		Total Employment	
	Number	Percent Change	Number	Percent Change	Number	Percent Change
2008	2,087	-	1,183	-	3,270	-
2009	2,052	-1.7	1,195	1.0	3,247	-0.7
2010	2,129	3.8	1,180	-1.3	3,309	1.9
2011	2,091	-1.8	1,149	-2.6	3,240	-2.1
2012	2,114	1.1	1,143	-0.5	3,257	0.5
2013	2,132	0.9	1,146	0.3	3,278	0.6
2014	2,091	-1.9	1,165	1.7	3,256	-0.7
2015	2,049	-2.0	1,167	0.2	3,216	-1.2
2016	2,056	0.3	1,103	-5.5	3,159	-1.8
2017	2,094	1.8	1,071	-2.9	3,165	0.2
Change 2008-2017	**-7**	**0.3**	**-112**	**-9.5**	**-105**	**-3.2**

Source: Bureau of Economic Analysis, 2018.

Economic Clusters

Mining and government employment are the two leading sectors in the NAB economy, respectively accounting for 26% and 36% of employed residents. Given these predominant industries, the borough economy is sensitive to changes in commodity (metal) prices as well as federal and state government budgets.

Figure 5. Average Annual Employment by Industry, Northwest Arctic Borough, 2018



Note: Mining industry employment based on *The Economic Impacts of Alaska's Mining Industry 2018* report; Health care employment based on estimates of employment by Maniilaq Association.
Source: ADOLWD, Alaska Miners Association, Maniilaq Association.

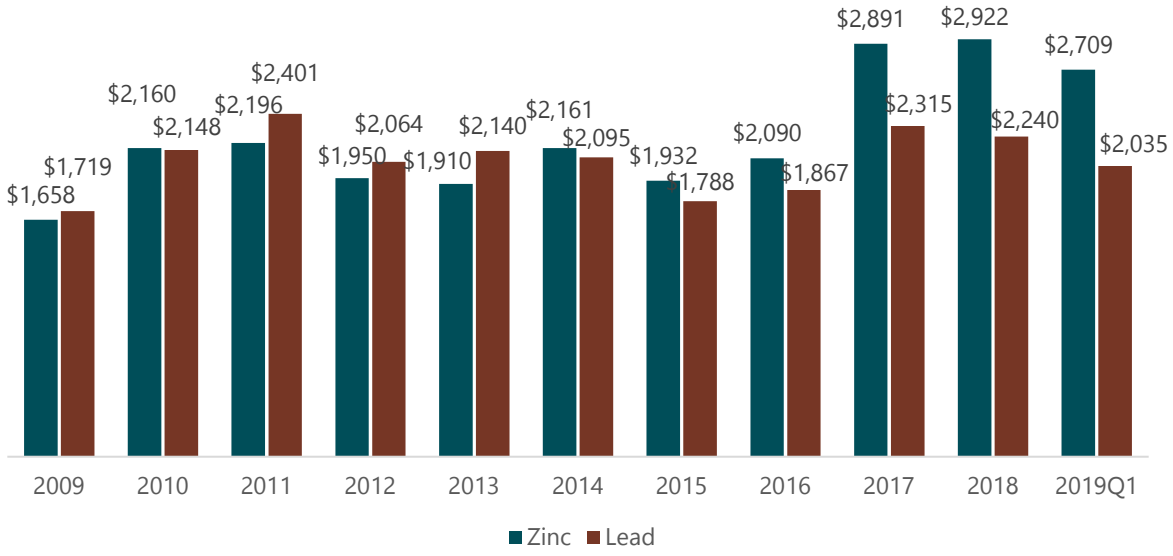
The following sections describe key sectors in the NAB economy and industries with development potential.

Mining

Mining is the NAB's most important non-government industry. In 2018, approximately 750 people were employed in the mining sector in the Borough, including those directly employed in mining and mining support services. This represents an increase of approximately 100 jobs over 2017 due to increased direct employment at Red Dog and the Upper Kobuk projects.

Due to the mining sector's strategic importance, metal prices can have a significant impact on the borough economy. Average annual zinc and lead prices remained relatively stable from 2009 to 2016, with notable increases between 2016 and 2018. Zinc prices rose to a decade high of $2,922 per metric ton in 2018, while lead approached a decade high of $2,315 per metric ton in 2017. Both commodity prices decreased in the first quarter of 2019.

Figure 6. Average Annual Metal Prices per Metric Ton, 2009-2018



Source: International Monetary Fund – Primary Commodity Prices.

RED DOG MINE

The NAB has only one operating mine within its boundary; Red Dog Mine, an open-pit zinc, lead, and silver mine located approximately 90 miles northeast of Kotzebue on land owned by NANA Regional Corporation. The resource is within lands owned by NANA Regional Corporation and operated by Teck Alaska under a 1982 operating agreement. The mine has been in production since 1989 and has an expected mine life through 2031. Red Dog is both the largest zinc and lead producer in the US, producing 583,200 metric tons of zinc concentrate and 98,400 metric tons of lead in 2018.[1]

[1] Teck. *Annual Report 2018*. 2019.

The NAB is paid an annual Payment in Lieu of Taxes (PILT) by Red Dog. The PILT is based on the operation's annual fixed asset value. The new PILT agreement signed by Teck Alaska and the NAB in 2017 set the PILT rate at 3.75% retroactively in 2016 and increasing to 4.0% by 2021. The new PILT agreement also established the Village Improvement Fund (VIF) to support critical infrastructure, services, and programs in the 11 villages of the NAB. Annual payments are dependent on Red Dog Mine profitability but have a guaranteed minimum of $4 million and a maximum of $8 million.

In FY2018, Red Dog Mine paid $14.9 million in PILT to the NAB and $8.0 million to the VIF. Since 1989, the mine has contributed $222.3 million in PILT to the NAB, direct payments to the Northwest Arctic Borough School District (NWABSD), and the VIF. Red Dog Mine is the most important source of Borough revenue, which receives no other property or sales tax.

Teck American, Inc. has been evaluating regional development opportunities focused on the adjacent underground prospects, Aktigiruq and Anarraaq, located on state land seven miles northwest of Red Dog Mine. Teck American has conducted preliminary exploration at the Anarraaq-Aktigiruq Project with promising results. Both deposits have the potential to extend mining operations at Red Dog Mine beyond the current estimated mine life of 2031, if deemed economically and environmentally viable.

UPPER KOBUK

Trilogy Metals, in partnership with land-owner NANA Regional Corporation, is pursuing the Upper Kobuk Mineral Projects in the resource-rich Ambler Mining District.

Arctic

The Arctic project is the most advanced exploration project in the Ambler Mining District. Located approximately 20 miles northeast of Kobuk, 26 miles from Shungnak, and 40 miles east-northeast of Ambler, the project includes State and federal mining claims. The deposit has 39.5 million metric tons of indicated and inferred resources containing copper, zinc, lead, gold, and silver.

Trilogy announced results of the Arctic Pre-Feasibility Study (PFS) in 2018, which found an open-pit mine and mill processing 10,000 metric tons of ore per day over a minimum 12-year mine life could be economically feasible. The base-case scenario assumes construction of the Ambler Mining District Industrial Access Project (AMDIAP), a proposed private road to be owned by the Alaska Industrial Development and Export Authority (AIDEA) that would connect the Ambler Mining District to the Dalton Highway.

Bornite

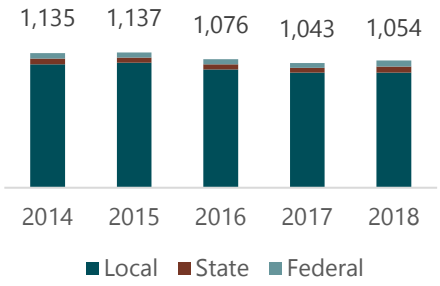
Bornite is another exploration target in the Upper Kobuk Mineral Projects. Located 11 miles southwest of the Arctic project, Bornite is on NANA lands. The project has 182.4 million metric tons of indicated and inferred resources, including 6.4 billion pounds of copper and 77 million pounds of cobalt.

While no PFS has been completed for Bornite and the minerology of the two projects differ, Bornite could provide additional material to feed the Arctic operation mill.

Government

Government employment accounts for the highest percentage of wage and salary jobs in the NAB's cash economy, accounting for 36% of total employment in 2018. Most of this employment is in local government (90%), followed by state and federal employment (5% each). Both local and state government saw two consecutive years of employment decreases between 2016 and 2017 before increasing slightly to 1,054 in 2018.

Figure 7. Government Employment, Northwest Arctic Borough, 2014-2017



Source: ADOLWD – QCEW.

Oil and Gas

In 2008, the United States Geological Survey (USGS) published the *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle* report, which evaluated petroleum potential in the Arctic based on resources technically recoverable using existing technology. The evaluation estimated undiscovered oil resources of 85.99 million barrels and 106.57 million barrels of natural gas liquids in the North Chukchi-Wrangel Foreland Basin and 2.47 million barrels of oil and 11.37 million barrels of natural gas liquids in the Hope Basin, located offshore of the NAB.[1]

In 2008, Royal Dutch Shell (Shell) purchased federal oil exploration leases in the Chukchi Sea. Shell drilled an exploratory well in 2015, but results were not enough to warrant further exploration. High exploration and operating costs and weak commodity prices likely contributed to lack of financial feasibility. Shell relinquished the federal leases in 2016.

[1] United States Geological Survey. *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*. 2008.

Healthcare

Maniilaq Association is the largest healthcare provider and employer in the Northwest Arctic Borough, serving all borough communities and Point Hope. The Association employs approximately 550 borough residents and provides services to all in the region regardless of race.[2]

The Association manages the Maniilaq Medical Center, an 80,000 square foot hospital that provides primary care, outpatient and inpatient care, physical therapy, and emergency services. The hospital includes a pharmacy, dental and eye clinics, and a long-term care facility. Outpatient behavioral health services are offered by Maniilaq in Kotzebue; the region currently has no inpatient behavioral health services. Maniilaq Association also operates village health clinics staffed by Community Health Aides in each service area community.

There are very few other healthcare providers in the NAB.

Tourism

Kotzebue has several of the infrastructure assets needed to support a visitor industry, including daily jet service from Anchorage to the Ralph Wien Memorial Airport. Other key infrastructure includes the 78-room Nullaġvik Hotel, a NANA property built in 2011. Also located in Kotzebue is the Suilianich Art Center, which provides opportunity for visitors and residents to purchase art made by residents throughout the region and includes artist workstations where visitors can watch local artists work. The Northwest Arctic Heritage Center, a museum and visitor center operated by the US National Park Service, is also located in Kotzebue. Finally, Kotzebue's natural attractions include stunning views of Kotzebue Sound and the Chukchi Sea beyond, rich local wildlife, five nearby national parks/monuments/preserves, and several resident dog teams.

The region hosts several events throughout the year which are mainly attended by visitors from nearby regions. These events include the dog mushing races like the Kobuk 440 between Kobuk and Kotzebue and the Arctic Circle Champion Sled Dog Race and the Archie Ferguson/Willie Goodwin Sr. Memorial snowmachine race.

[2] Maniilaq Association. https://www.maniilaq.org/about-us/. Accessed July 2019.

VISITOR STATISTICS

While visitor statistics specific to the Northwest Arctic Borough are unavailable, the *Alaska Visitor Statistics Program* includes the borough in its profile of visitation to Alaska's Far North communities, which together had an estimated 33,000 visitors in 2016 (the latest year for which data were available). More than one-quarter (26%) of visitors to the Far North were traveling for business purposes, a higher percentage compared to those visiting other Alaska regions. The most common activity for travelers to the region was wildlife viewing (24%), including 11% who participated in bird watching. On average, visitors to the Far North spent $826 per person in the region.

NATIONAL PARK SERVICE VISITATION

The Northwest Arctic Borough is near five national parks/ monuments and preserves, which are managed by the US National Park Service (NPS), including:

- Bering Land Bridge National Preserve,
- Cape Krusenstern National Monument,
- Gates of the Arctic National Park and Preserve,
- Kobuk Valley National Park, and
- Noatak National Preserve.

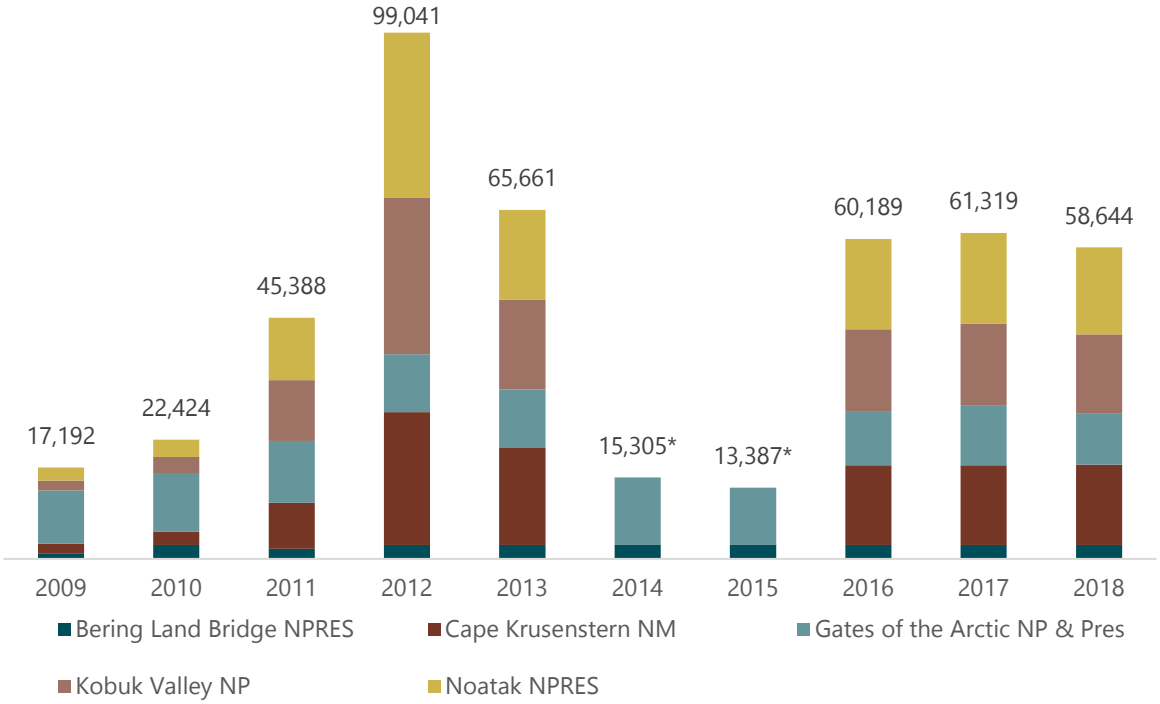
Figure 8. National Parks/Preserves and Monuments, Northwest Arctic Borough

Source: US National Park Service.

The NPS tracks visitor statistics based on individual visits to each park, including regional resident visitation. While not all park visitors stopped in the NAB, the following statistics provide guidance on trends in visitation.

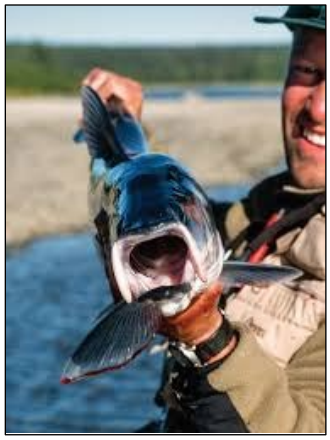
The five parks saw approximately 59,000 recreational visits in 2018, a slight decrease from 2016 and 2017 visitation. Park visits increased dramatically between 2009 (17,000 recreational visits) and 2012 (99,000 visits) due to significant increases at Cape Krusenstern National Monument, Kobuk Valley National Park, and Noatak National Preserve.

Figure 9. US National Park Service Visitation by Select Park, 2009-2018



* 2014 and 2015 visitation statistics unavailable for Cape Krusenstern NM, Kobuk Valley NP, and Noatak NPRES.
Source: US National Park Service

SPORT FISHING



In addition to subsistence uses, sport fishermen also use the Northwest Arctic Borough's abundant fish resources. Sportfishing harvests in the Northwest Drainages Management Area – including all drainages of Norton sound, the Seward Peninsula, Kotzebue Sound and the Chukchi Sea to Point Hope – decreased significantly in 2017 (the latest year for which data is available).[3] The number of sport fishermen participating declined by 50% to 500 in 2017 compared to 1,036 in 2008. The number of fish harvested through sport fishing declined precipitously from 4,350 in 2008 to slightly over 400 in 2017, with significant declines in the number of salmon and Dolly Varden harvested.

[3] Alaska Department of Fish and Game. *Northwest Drainages Management Area Sport Fishing Survey*. Accessed July 2019.

Table 11. Sport Fishing Participants and Fish Harvested, Northwest Drainages Management Area, 2008-2017

Year	Number of Fishermen	Fish Harvested					
		Salmon	Dolly Varden	Arctic grayling	Sheefish	Other	Total
2008	1,036	2,621	852	293	61	538	4,365
2009	1,386	229	1,373	439	946	500	3,487
2010	1,257	747	491	366	595	622	2,821
2011	1,157	786	865	486	385	142	2,664
2012	1,060	482	781	626	104	1,596	3,589
2013	1,150	732	1,074	563	198	579	3,146
2014	937	399	216	237	244	255	1,351
2015	1,411	1,198	221	664	1,191	348	3,622
2016	1,173	350	1,081	496	667	212	2,806
2017*	550	80	245	24	46	22	417

* Alaska Board of Fish changed the regulations no longer requiring Alaska resident anglers to purchase a sport fishing license, thereby decreasing the number of taken fish reported.
Source: Alaska Department of Fish and Game.

GUIDED SPORTS HUNTING

Guided hunting occurs in remote parts of Alaska, contributing significantly to rural economies. Non-Alaska residents are required to use a hunting guide for mountain goats, dall sheep, and brown/grizzly bear. However, many nonresident hunters hire a guide for other species, especially moose, caribou, and black bear, for a higher-quality hunt with the guide's extensive knowledge of the land and the target species. Guides often spend money locally for goods and services, such as transportation and groceries. Guiding related jobs include registered guides, assistant guides, packers, and camp/office support staff. Within the Northwest Game Management Unit, which includes Guide Use Area (GUA) 23 (mostly covering NAB territory), there were approximately 298 guided hunters (or 9% of all guided hunters in Alaska) in 2012; on average, each spending approximately $970 for their pre- and post-hunt stays.[4] In 2012, there was one registered guide living in Kobuk and one in Kotzebue.[5] In 2013, 15 permits were issued to guides offering hunts in GUA 23.[6]

Commercial Fishing

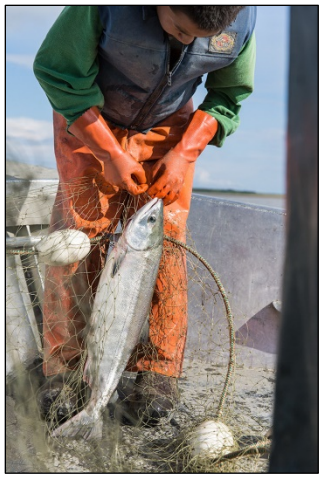
The predominant species in the Kotzebue Sound salmon fishery is chum, also referred to as keta. The fishery is small compared to other commercial fisheries in Alaska, in part because the region has relatively little infrastructure to support the industry. Lack of infrastructure means reliance on airline cargo capacity to ship fish to processing facilities elsewhere in Alaska. In 2018, this limitation was lifted in late July with the arrival of a floating processor repositioned from Bristol Bay.

[4] McDowell Group, *The Economic Impacts of Guided Hunting in Alaska.* 2014. Prepared for the Alaska Professional Hunters Association.
[5] Alaska Department of Commerce, Community, and Economic Development, Business and Professional Licensing.
[6] Alaska Department of Fish and Game.

During the 1980s and 1990s the presence of a major buyer in Kotzebue contributed to a more or less stable fishery. Fisheries volume decreased significantly in 2002 due to low prices and harvest restrictions following an extended period of poor returns – resulting in all major buyers exiting the market. Only one buyer operated in the fishery between 2004 and 2012.

The commercial fishing industry in the NAB expanded significantly between 2014 and 2018. Record harvests (695,153 fish) in 2018 were driven by strong runs, higher prices, and the presence of a floating processor. Salmon harvest is expected to be strong in the 2019 season, potentially reaching a record harvest of 700,000 salmon – with two major buyers again expected to participate in the fishery.

Local participation in the salmon fishery is highly variable, depending on fishing opportunities and other trends discussed above. Over the last 30 years, the number of NAB resident fishermen who fished has generally ranged between a low of around 50 to a high of roughly 100. Even at the high end, only about two-thirds of permits issued to NAB residents were fished (see table next page).



In 2019, the NAB EDC commissioned a study to investigate the financial feasibility of a small-scale salmon processing facility in Kotzebue. The study examined the viability of five different seafood products, including headed and gutted (H&G) fish, fillets, hot smoked fillets, cold smoked salmon strips, and canned salmon – with a focus on sales into the local market only. The study found two products (H&G and salmon strips) were feasible at a 30% discount from local retail prices, though likely not at wholesale prices (the price processors typically receive in the marketplace). With none of the processing options found to be particularly profitable, the study suggested looking at alternative options to support the commercial salmon industry in the region. One specific option mentioned was the development of cold storage capacity.[7]

The study described above did not address the feasibility of a more traditional processing plant marketing products globally. Further research, as well as communication with harvesters and buyers, could identify additional opportunities to support and grow the local seafood industry.

[7] Specifically, the study reported the following: "Providing cold storage would be much simpler and perhaps a less risky way to achieve the goal of supporting the fishery. Finding a way of handling waste and lowering energy costs are also ways that the community could help reduce risks faced by buyers and make the Kotzebue fishery more attractive."

Table 12. Resident Commercial Fishing Permits Held and Permits Fished, Northwest Arctic Borough, 1998-2018

Year	Permits Held	Permits Issued	Permits Fished	Fishermen who Fished	Pounds Landed	Value of Commercial Catch
1998[a]	165	173	47	45	451,843	$70,429
1999 [a]	165	178	60	58	1,072,625	$172,042
2000	162	169	67	65	1,497,625	$345,577
2001	166	172	71	69	1,943,257	$377,402
2002	159	168	7	6	146,984	$38,593
2003 [a]	158	168	9	7	218,251	$26,469
2004	151	160	46	44	516,225	$142,006
2005	148	158	47	45	734,041	$213,505
2006 [a]	140	147	46	46	1,041,033	$229,027
2007	134	142	51	50	1,530,542	$500,676
2008 [a]	131	135	50	50	1,541,922	$385,481
2009 [a]	137	141	65	66	1,504,088	$376,434
2010	136	140	66	68	2,220,914	$936,747
2011	140	144	91	92	2,218,349	$936,565
2012	135	140	83	83	1,784,545	$621,413
2013 [a]	135	140	67	69	2,552,971	$679,711
2014	142	148	93	93	5,244,187	$2,868,496
2015	146	154	105	107	2,757,433	$963,714
2016	151	159	89	87	3,452,805	$1,504,620
2017	152	159	104	104	4,046,764	$2,023,548
2018[b]	155	162	98	97	5,826,749	$2,426,141

Notes:
a. Disclosable pounds and commercial earnings shown.
b. Preliminary data.
Source: Alaska Department of Fish and Game – Commercial Fisheries Entry Commission, 2019.

OFFSHORE RESOURCES

Federal waters in the NAB region are currently closed to commercial fishing under a 2009 plan adopted by the North Pacific Fishery Management Council.[8] The Fisheries Management Plan for the Arctic Management Area – which covers all federal waters north of the Bering Strait – prohibits commercial fishing for finfish, mollusks, and crustaceans.[9] This precautionary closure could be lifted at a future date. Under a bill currently pending in the US Congress (reauthorizing the Magnuson-Stevens Fishery Conservation and Management Act or MSA), ten percent of any future commercial fisheries in the Arctic are set aside as community development quota (CDQ) for coastal villages located north and east of the Bering Strait. The CDQ program, which is currently limited to areas of Western Alaska south of Kotzebue, is widely seen as successful and a major source of community development funds in member communities. Kotzebue would play a key role in any Arctic CDQ entity, if one were established.

[8] https://www.npfmc.org/wp-content/PDFdocuments/fmp/Arctic/ArcticFMP.pdf
[9] While halibut and salmon are managed under other authorities, no fisheries are established for this species in federal waters of the arctic.

Infrastructure Related to Economic Development

Village Improvement Fund

Established to provide funding for critical infrastructure and programs in all 11 communities of the NAB, the Village Improvement Fund (VIF) was created in 2017 by a Memorandum of Commitment (MOC) between the Borough government and Teck Alaska Incorporated (Teck). Teck agreed to make annual payments to the Fund based on Red Dog Mine profitability, with minimum payments of $4 million and maximum of $8 million annually, including an initial, one-time $11 million payment. Annual payments are divided 70% for development projects and 30% for investment in a sustainability fund.

Each community is expected to have a priority list from which projects are selected for VIF funding. Applications are submitted to the Village Improvement Commission (VIC), which includes representation from all communities, and are evaluated based on 14 key criteria. Funding criteria include whether the project can be self-sustaining in the long term. VIF funding may be used to provide matching funds required by other project funding sources.

As of February 2019, approved projects include an energy efficiency study in Ambler, support for the Kivalina evacuation road, and water/sewer system rehabilitation in Shungnak.

Transportation

SURFACE TRANSPORTATION

There are no inter-connecting community roads; where possible, land travel is over trails by snowmachine or all-terrain vehicles. During winter months, however, ice roads have been constructed between the communities of Kotzebue, Noorvik, and Kiana.

The AIDEA-owned DeLong Mountain Transportation System (DMTS), north of Kivalina, was open in 1989 to support the development of the Red Dog mine. The system includes an all-weather gravel industrial haul road from the mine to the port, a shallow water dock, and an offshore conveyor system to load ore concentrate to lightering vessels that convey the concentrate to larger ships further offshore. Teck Alaska, as the operator of Red Dog mine, pays toll fees for use of road and port to AIDEA, recovering the cost of construction of the DMTS and providing a return on AIDEA's investment. The initial construction and subsequent upgrade of the DMTS cost $265 million. By the end of 2018, the state had received more than $475 million from Red Dog mine for use of the system.

AIDEA submitted a final revised application for the Ambler Mining District Industrial Access Project in 2016. The proposal is for the construction and operation of a 211-mile-long, all-season, controlled-access gravel industrial road connecting the Ambler Mining District with the Dalton Highway. The project design is modeled on AIDEA's successful DMTS, with the goal of forming a public-private partnership to finance, construct, operate, and maintain the access project. The U.S. Army Corps of Engineers is currently preparing an Environmental Impact Statement under the Alaska Native Interest Lands Conservation Act.

MARITIME TRANSPORTATION

With no road access to the regional hub of Kotzebue, the borough relies on maritime and air transportation of freight throughout the region. Lack of deep-water port facilities means deep-draft vessels carrying goods and fuel must lighter their contents into Kotzebue from 12 to 15 miles offshore. Maritime service is only available during the three months in which Kotzebue Sound is ice free. The US Army Corps of Engineers completed a harbor feasibility study for the Cape Blossom deep water port project in early 2019. Among six alternatives studied, the Corps recommended one that calls for a 10-mile road connecting Cape Blossom to Kotzebue and includes significant uplands development.

Freight and fuel may be transported from Kotzebue to villages in the region using river barges. However, changes in river depth mean the barges can't always serve all communities. Development of the Cape Blossom port may allow for shipment by river barge 10 to 15 days earlier than freight brought into Kotzebue, when rivers are at their normal maximum depth and most navigable.

The DMTS includes a shallow water dock to receive Red Dog mine supplies, fuel, equipment, and personnel. It also includes an offshore conveyor system to load ore concentrate to lightering vessels that convey the concentrate to larger ships further offshore.

AIR TRANSPORTATION

Due to the limited maritime shipping season, the region also relies on air transportation, and freight is flown in year-round. Freight shipment by air is significantly more expensive compared to maritime. Freight shippers benefit from the Alaska Bypass program, a program funded by the US Postal Service (USPS), which allows shippers to pay parcel post rates for delivery of many kinds of products to specified remote Alaska communities. Rates paid through this program are the lowest air transportation rates available to deliver freight to the region and are lower than other standard USPS rates.

Alaska Airlines operates daily jet service into the Ralph Wien Memorial Airport in Kotzebue, with Ravn Air providing additional passenger transportation.

Water/Sewer/Sanitation

Aging and inadequate water and sewer infrastructure in NAB communities contributes to the high cost of living in the region. Village water and sewer systems are among the highest energy users in many communities, and infrastructure improvements would likely reduce energy consumption and utility costs.

The Borough is currently partnering with the Alaska Native Tribal Health Consortium (ANTHC) on the Community Utility Assistance Program (CUAP), which aims to reduce water utility rates and customer

delinquency rates. The program is funded by the Borough which coordinates joint fuel purchases for community water and sewer systems, reducing utility costs. ANTHC contributes by training and supporting utility operators and staff and providing other process support. Nine of the ten NAB villages currently participate in the program and eight villages have increased customer collection rates to 70% or higher, a significant improvement from previous rates.

Communications

OTZ Telephone Cooperative provides telephone, wireless/cellphone, and internet services to select communities in NAB. Broadband services are also provided by GCI, which expanded service to several NAB communities in the past five years through the Terrestrial for Every Rural Region in Alaska (TERRA) network. The TERRA network provides high-speed internet service and data streaming to rural communities.

In 2017, an Anchorage-based company, Quintillion, completed the first phase of a project to link Alaska to global commerce centers, laying fiber-optic cable from Nome to Prudhoe Bay. An arm of the cable extends into Kotzebue. Quintillion sells data capacity to telecommunications providers in the region. While Kotzebue has seen significant improvements in internet access through GCI's TERRA network and Quintillion fiber-optic connectivity, low bandwidth remains an obstacle for other communities in the region.

Households in most communities continue to rely on satellite communication networks, including approximately 15% of households in Kotzebue and approximately 60%-70% of households in other NAB communities.

KOTZ Radio is the public broadcasting station in the region and provides emergency communication services like weather advisories and search-and-rescue alerts to borough residents.

Energy

High energy costs contribute significantly to the high cost of living in the NAB. Virtually all NAB households use heating oil for home heat, with limited use of wood fuel and other heat sources.[10] Transportation costs for diesel fuel are the main contributor to high heating bills in the region. However, per gallon rates can differ significantly between communities and between household and commercial purchases.

In January 2018, heating oil prices averaged $4.80 per gallon in the region, compared to the statewide and national averages of $4.44 and $3.08, respectively.[11] Heating oil prices are based on same-day fuel purchase prices as quoted by retail fuel sellers at the time they are surveyed.[12]

[10] US Census Bureau – American Community Survey 2013-2017 5-Year Estimates.
[11] Alaska Department of Commerce, Community, and Economic Development – Division of Community and Regional Affairs. *2018 Fuel Price Survey.* Accessed July 2019.
[12] NAB communities of Deering, Kiana, Kotzebue, and Noorvik were surveyed for the *2018 Fuel Price Survey.*

In 2019, retail prices for a gallon of gasoline ranged from $4.38 to $9.79 and a gallon of home heating oil from $3.35 to $9.53. Schools, water treatment plants, and power plants purchase fuel at lower wholesale prices.

Table 13. Retail Fuel Costs, Price per Gallon, by Community, 2019

Community	Gasoline ($)	Heating Oil ($)
Ambler[a]	9.79	9.53
Buckland[a]	6.15	6.04
Deering[b]	4.38	3.35
Kiana[a]	6.18	5.67
Kivalina[c]	5.00	4.53
Kobuk[a]	9.27	9.27
Kotzebue[d]	6.03	5.97
Noatak[c]	9.26	9.26
Noorvik[c]	6.06	5.64
Shungnak[c]	8.50	8.5
Selawik[b]	6.63	6.36

Notes: All prices include sales tax, ranging from 3%-6%.
[a] indicates City retail price
[b] indicates IRA Tribal Council retail price
[c] indicates Alaska Native Industries Cooperative Association retail price
[d] indicates Crowley retail price
Source: NAB Energy Manager, Ingemar Anugi Mathiasson (by email, August 2, 2019).

The region also relies on diesel fuel for electrical power generation. Lack of a unified electrical grid in the borough further increases household and business costs. Residential and small commercial electricity rates per kilowatt hour (kWH) ranged between $0.38 in Kotzebue to $0.80 in Noatak in 2019. The statewide Power Cost Equalization (PCE) program subsidized residential and community facility electricity costs in rural Alaska. In FY2018, average PCE payments per eligible customer in the NAB ranged from $390 to $3,336. Commercial customers and public schools are not eligible for PCE subsidized electricity.

Table 14. Electricity Rate and PCE Payments by Community, Northwest Arctic Borough, 2019

Community	Residential Rate/kWH[a]	Average PCE Rate per kWH[b]	Average Annual PCE Payment per Customer[b]	Small Commercial Rate/kWH[a]
Ambler	$0.61	$0.28	$1,500	$0.61
Buckland	$0.47	$0.13	$390	(c)
Deering	$0.65	$0.26	$1,375	(c)
Kiana	$0.62	$0.29	$1,415	$0.62
Kivalina	$0.59	$0.31	$1,635	$0.59
Kobuk	$0.61	$0.35	$2,049	$0.61
Kotzebue	$0.38	$0.18	$849	(c)
Noatak	$0.80	$0.52	$3,336	$0.80
Noorvik	$0.55	$0.26	$1,767	$0.55
Selawik	$0.58	$0.27	$1,863	$0.58
Shungnak	$0.61	$0.35	$2,163	$0.61

Notes:
a. Residential and small commercial rates/KWH based on 501-700 KWH usage.
b. PCE rates and annual payments based on FY2018 actual payments.
c. Commercial rate unavailable
Source: Alaska Energy Authority – PCE Annual Community Summaries FY2018; Alaska Village Electric Cooperative – Rate Schedule 2019.

Fuel is delivered to Kotzebue twice a year by one major importer, with delivery restricted to the three months in which the Kotzebue Sound is ice free. Kotzebue has no port facility configured for the vessels that carry diesel fuel, and the cargo must be lightered into Kotzebue from 15 miles offshore, contributing to high delivery prices. Fuel is transported from Kotzebue to the villages by barge, where it supplies small, local power generation facilities, schools, homes, and other community energy needs. When river conditions do not allow for barge access, fuel is shipped to the villages via airplane, further increasing cost. Many communities in the region also lack adequate bulk fuel storage capacity to coordinate fuel purchases, which would reduce the per unit fuel price for participating organizations.

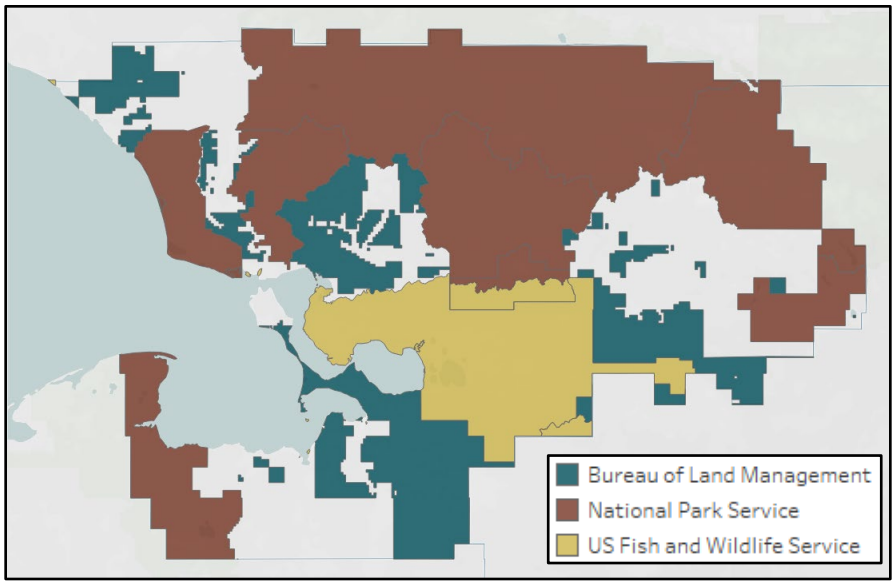
In 2015, NWALT published the *Northwest Arctic Regional Energy Plan* to address high energy costs in the region. The plan outlines proactive measures to develop alternative energy resources in the borough to decrease communities' reliance on imported diesel fuel. Proposed projects include wind generation studies in several communities, hydroelectric and biomass projects, and increased bulk diesel fuel purchasing, as well as upgrades to high energy users like water and sewer systems and efforts to reduce residential fuel consumption.

Other Factors Affecting Economic Performance

Land Status

The federal government owns significant land in the NAB, including the National Park Service (with five national parks/preserves and monuments in the area), US Bureau of Land Management, and the US Fish and Wildlife Service. Land ownership by federal, state, and local entities can restrict development opportuniteis in the borough.

Figure 10. Federal Lands in Northwest Arctic Borough



Source: ESRI.

Banking and Finance

Only one national bank has a physical branch in the NAB. Due to frequent challenges with credit history and other loan requirements, residents and businesses often face difficulty securing traditional bank financing.

Based on publicly-available data, there were nine banks actively originating small business loans in the borough in 2017, including banks with a local presence in NAB or elsewhere in Alaska and national credit card firms.[13] Lenders originated 38 small business loans to NAB businesses in 2017, the majority of which were for $100,000 or less. While businesses with annual gross revenue below $1 million received slightly more loans compared to others, businesses with revenue above $1 million received more than 70% of financing dollars in 2017.

Table 15. Small Business Loans Originated in Northwest Arctic Borough, 2017

Category	Number	Total Amount
Loan Amount		
Less than or equal to $100,000	33	$479,000
$100,001-$250,000	1	$125,000
Greater than $250,000	4	$2,419,000
Business Gross Annual Revenue		
Less than or equal to $1 million	21	$845,000
Greater than $1 million	17	$2,178,000
Total	**38**	**$3,023,000**

Source: Federal Financial Institutions Examination Council.

Borough government operates a Small Business Grant program to provide financial assistance to locally owned and operated businesses. Grants are payable directly to suppliers for business supplies, facility construction or improvement, training or licensing, or other start-up costs. In FY2019, the Borough budgeted $30,000 for small business grants.

Public Safety and Community Wellness

NAB villages are served by the Village Public Safety Officer (VPSO) program, a division of the State Public Safety department with limited funding granted by the state through local Alaska Native nonprofits. The NAB currently has only part-time VPSO presence in each community and not all communities have adequate VPSO facilities. VPSOs are not law enforcement personnel, but act as first responders and work in partnership with the Alaska State Troopers.

In 2017, the Alaska State Troopers made 222 arrests in NAB. More than half (59%) were for violent crimes including assaults and homicide.

[13] Federal Financial Institutions Examination Council. Community Reinvestment Act Data. Accessed 2019.

Table 16. Alaska State Trooper Arrests Made by Violation Group, Northwest Arctic Borough, 2013-2017

Classification	2013	2014	2015	2016	2017
Assaults	90	135	149	106	129
Non-criminal[a]	43	34	32	27	31
Other criminal	14	18	30	15	10
Theft-larceny	9	9	21	11	10
Burglary	6	9	7	14	11
Criminal mischief (vandalism)	5	7	8	15	10
Alcohol	9	14	6	4	2
Driving under the influence	6	10	10	4	3
Public administrative order	3	4	10	6	7
Sexual assaults of minor	3	1	5	13	1
Sexual assaults	4	5	7	4	2
Offense against minors	3	6	2	--	1
Homicide	3	2	2	1	1
Theft-auto	--	2	1	6	--
Weapons	1	2	4	1	--
Robbery	--	2	3	--	2
Drugs	3	--	--	3	--
Driving with suspended license	1	2	--	--	--
Harassment	--	1	2	--	--
Unspecified	--	--	--	1	2
Other traffic infractions	--	2	--	--	--
Truancy	--	1	--	--	--
Total	**203**	**266**	**299**	**231**	**222**

Note:
a. Includes warrant arrests.
Source: Alaska Department of Public Safety, 2018.

According to the US Census Bureau, 69% of NAB residents have some type of health insurance. Census estimates of health insurance coverage understate the total because they do not include Indian Health Service (IHS) coverage. The primary barriers to health care access in the region are distance and the low number of providers.

Table 17. Percent of Population with Health Insurance, Northwest Arctic Borough, 2013-2017

Insurance Type	Percent Covered
Private insurance alone or in combination	32.5%
Public insurance alone or in combination	41.0%
Total percent insured	**68.5%**

Note: Column does not equal total due to residents covered by both private and public insurance.
Source: US Census Bureau – American Community Survey 2013-2017 5-Year Estimates.

Cost of Living

Alaska generally has a higher cost of living than other states because of high transportation costs, among other factors. Cost of living in the NAB is significantly higher than most other Alaska communities. Based on the latest *Alaska Geographic Differential Study*, cost of living in Kotzebue was on average 61% higher than Anchorage, including 30% higher for cost of housing, 35% higher for food, and 67% higher than Anchorage for miscellaneous household expenses.[14] While the precise differential for other NAB communities is not calculated, cost of living in the villages is higher than in Kotzebue.

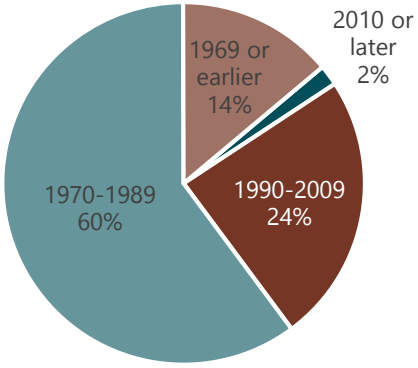
High cost of living in NAB impacts the ability of the region to maintain a stable population and workforce. The same applies to business costs, particularly high transportation, operating, and construction costs.

Housing

There are approximately 2,700 housing units in the NAB, 70% of which are occupied and 30% vacant or only used seasonally. Nearly three-quarters (74%) of housing units are more than 30 years old.[15] High costs to install utility infrastructure restrict new housing construction in the region.

High construction costs in NAB contribute to a low rate of new housing construction and high housing costs. Nearly one-quarter (24%) of borough households spend more than 30% of household income on housing, including utilities and energy.[16] High housing costs also contribute to overcrowding; approximately 39% of occupied units are overcrowded, including 21% classified as severely overcrowded, the second highest overcrowding rate in Alaska.[17]

Figure 11. Housing Units by Construction Year, Northwest Arctic Borough, 2013-2017



Source: US Census Bureau – American Community Survey 2013-2017 estimates.

Table 18. Housing Units Occupancy, Northwest Arctic Borough, 2017

Occupancy	Housing Units	Percent
Occupied	1,886	69.9
Vacant/Seasonal Use	814	30.1
Total	**2,700**	**100.0**

Source: Alaska Housing Finance Corporation – Housing Market Assessment 2017.

[14] McDowell Group. *Alaska Geographic Differential Study 2008*. Prepared for the State of Alaska Department of Administration. April 2009.
[15] US Census Bureau – American Community Survey 2013-2017 5-Year Estimates.
[16] Alaska Housing Finance Corporation. *Housing Market Assessment 2017 – Northwest Arctic Borough*. 2018.
[17] Ibid.

Education/Workforce Development

Early Care

Childcare options for families with children under age six are very limited in NAB and families primarily rely on in-home day care provided by relatives, other family members, or non-family members. As of 2016, one-in-six children under six had an unmet need for childcare in NAB.[18]

The region has no active Head Start or Early Head Start programs. The Nikaitchuat Ilisagviat school in Kotzebue is the only State-licensed childcare facility in the NAB, with limited space for pre-Kindergarten children ages three and up, and available only during regular school seasons. The lack of year-round, affordable childcare opportunities in the borough limits workforce participation and contributes to underemployment among households with young children.

Elementary and Secondary Education

NAB has educational infrastructure from elementary school through postsecondary academic and technical training. NWABSD provides primary and secondary education through the borough, operating a school in each village.

School districts throughout Alaska experience high teacher turnover, with one-in-five teachers (20%) leaving rural districts on average each year.[19] The NWABSD had similar average turnover of 19% per year between 2007 and 2013, the latest years for which data were available.[20] Throughout Alaska, many new teachers are recruited from outside Alaska due to a lack of training capacity and qualified candidates in-state.

Based on the statewide standardized exams, 11% of NWABSD students were proficient in English and Math and 17% were proficient in Science in the 2017-2018 academic year. NWABSD had an 81% four-year graduation rate, higher than the statewide rate of 79%.[21]

Table 19. Graduation Rates and PEAKS Outcomes, NWABSD and Alaska, 2017-2018 Academic Year

District	Graduation Rate	English		Math		Science	
		At least proficient	Below proficient	At least proficient	Below proficient	At least proficient	Below proficient
NWABSD	80.8%*	11.1%	88.9%	11.8%	88.2%	17.3%	82.7%
Statewide	78.5%	42.4%	57.6%	36.6%	63.2%	47.2%	52.9%

* District graduation rate based on 2016-2017 academic year.
Source: Alaska Department of Education and Early Development, 2018.

[18] McDowell Group. *Alaska's Early Care and Learning Data Dashboard*. Prepared for thread. 2017.
[19] DeFeo, Dayna. *Teacher Turnover Costs Alaska $20 Million Each Year*. September 2017.
[20] Northwest Arctic Borough School District. *Presentation to Legislature*.
http://www.akleg.gov/basis/get_documents.asp?session=28&docid=14370. Access July 2019.
[21] Alaska Department of Education and Early Development. *Graduation Data*. 2016-2017.

VOCATIONAL TRAINING AND POST-SECONDARY EDUCATION

The NWABSD also operates the Star of the Northwest Magnet School providing vocational training through partnerships with Alaska Technical Center (ATC) and the University of Alaska Fairbanks (UAF). to students in grades 11 through 14 while they complete their high school requirements. Programs are offered in culinary arts, process technology, healthcare, and education careers, and university credits are available for applicable courses completed. The school is in Kotzebue and open to all Alaska students; it has a dormitory with space for 40 students.

The school district is also the parent organization for ATC, an adult training center located in Kotzebue that provides vocational training in fields such as certified nurse's aide (CNA), construction trades technology, and process technology. The center also provides adult basic education/GED programs, as well as short courses leading to certifications such as commercial drivers licensing (CDL) and water plan operators training.

Kotzebue is also home to Chukchi Campus, a branch of UAF. The campus currently has no full-time faculty and provides mainly distance education courses through UAF and UAA. However, the campus does have facilities available for in-person instruction, including an FAA-certified flight simulator on-site, and employs adjunct teachers.

Borough students have access to several scholarship programs, including the Borough government's Frank R. Ferguson Memorial Scholarship program which offers scholarships for both academic and vocational education. Other scholarship opportunities are available through the Aqqaluk Trust (available to NANA shareholders, descendants, and dependents), Maniilaq Association (available to tribal members), local IRAs, Teck Alaska, Trilogy Metals, and many others.

Climate Change

In NAB, impacts of a warmer climate include coastal erosion, permafrost melt, and sea ice retreat. These trends will negatively affect the region's built infrastructure and are projected to increase maintenance costs and, in extreme cases such as Kivalina, necessitate moving virtually all community assets to a new location.[22] Climate change is also affecting subsistence resources, an important component of the region's economy.

At the same time, receding sea ice may open new business opportunities in the region as marine traffic increases and could foster development of offshore resources. The region is likely to experience additional opportunities as the Federal Department of Defense explores an increased presence in the Arctic.

[22] US Global Change Research Program. *National Climate Assessment*. 2014.

Chapter 3: SWOT Analysis

This chapter discusses the SWOT analysis conducted by NAB with input from the EDC and stakeholders in the context of the information presented in *Chapter 2: Summary Background*.

To meet NAB's overall economic development potential, the borough will need to leverage its strengths and mitigate its weaknesses to take advantage of existing and future opportunities and address outside threats. The SWOT analysis addresses the question, *Where is the NAB now in achieving its economic development potential?* The table summarizes factors identified to answer that question. It is followed by a brief summary of each of the four SWOT analysis components.

Northwest Arctic Borough SWOT Summary

Strengths	Weaknesses	Opportunities	Threats
• Subsistence and culture • Education and Workforce development infrastructure • Northwest Arctic Leadership Team • Partnerships • Natural resources and habitat • Resource development revenue to Borough gov't • Mining industry experience • Innovative approach to energy • Strategic Arctic location • Adaptability • Tribal government	• High cost burden • Revenue diversification • Economic diversification • Infrastructure (utilities, transportation, energy, housing) • Education, workforce training, employability, and job readiness • Remoteness & lack of community connectivity • Community collaboration and engagement	• Development of human capital • Transportation infrastructure improvement • Internet infrastructure • Natural resource development opportunities • International mining developers • Tourism potential • National security	• Climate change • Out-migration • Revenue diversity/ Dependence on State/Federal governments • Commodity prices (metals, salmon, fuel) • Land ownership by Federal/State government • Outside influence on development

Strengths – Existing Internal Advantages

NAB's strengths include its rich cultural history and lifestyle, natural resources wealth, education facilities infrastructure, and it's regional and extra-regional partnerships. Components of these strengths include:

- *Subsistence and culture* – The rich cultural history of the region and its subsistence lifestyle support self-sufficiency and resiliency in an environment of climate and social change.
- *Education and workforce development infrastructure* – Strong partnerships and infrastructure support education and workforce development in-region.

- *Northwest Arctic Leadership Team (NWALT)* – The organization helps maximize resources and reduce duplication of efforts by Maniilaq Association, NANA Regional Corporation, NAB, and NWABSD
- *Partnerships* – A multitude of partnerships in the NAB, including NWALT, EDC, industry (such as Teck Alaska and NANA), and others, work together to foster economic development.
- *Natural resources and habitat* – Abundant wilderness and natural resources have potential to contribute to revenue and economic diversity while supporting subsistence economies.
- *Resource development revenue to Borough government* – PILTS from mining revenue are a critical support for borough government, the school district, and the VIF
- *Mining industry experience* – The Red Dog Mine is the largest lead and zinc concentrate producer and the second largest silver producer in the U.S. and a major source of local jobs and workforce development.
- *Innovative approach to energy* – Investment in alternative energy technology (such as wind and solar) have potential to lower energy costs for residents.
- *Strategic Arctic location* – Emergent national security, geopolitical, economic, and transportation issues in the Arctic may support new infrastructure and economic opportunities.
- *Adaptability* – The people of the region have a tradition of adjusting to meet economic opportunities
- *Tribal government* – Tribal sovereignty entails a unique ability and responsibility to protect tribal lands and self-government, giving structure to and supporting success of communities in developing infrastructure critical to economic and community development.

Weaknesses – Existing Internal Disadvantages

NAB's economic development weaknesses stem from high cost burdens, lack of community connectivity, lack of revenue diversity, and constrained local capacity. Components of these weaknesses include:

- *High cost burden* - High cost of living, including high housing costs, transportation, consumables, and energy, contribute to higher wage requirements and costs of doing business
- *Revenue diversification* – The borough depends heavily on payments in lieu of taxes from Red Dog Mine to fund local government
- *Economic diversification* – Business and job opportunities unrelated to mining have so far been limited.
- *Infrastructure* – Limitations include lack of a deep-water harbor, utility limitations (communications, power, water/sanitation, electricity), transportation challenges, village healthcare access, community facilities, and housing infrastructure.
- *Education, workforce training, employability, and job readiness* – There are gaps between the preparation and proficiency levels of local students and workers and the types of jobs available.
- *Remoteness and lack of community connectivity* –NAB communities are spread over great distances with no road access.
- *Community collaboration and engagement* – There is not a well-established network of collaboration to support organizations and communities on regional economic development issues.

Opportunities – Potential External Improvement

NAB's economic development opportunities include building the labor force, improving transportation and communications infrastructure, expanding natural resource production, promoting tourism, and playing a larger role in the commercial and national security emergence of the Arctic. Components of these opportunities include:

- *Development of human capital* – Improve coordination and existing infrastructure to support workforce development, job readiness, and entrepreneurship skills.
- *Transportation infrastructure improvement* – Develop a deep-water port to lower transportation cost, increase transportation options, and enhance national security.
- *Internet infrastructure* – Expand and improve internet connectivity to enhance entrepreneurship and business development and distance delivery of education while lowering costs.
- *Natural resource development opportunities* – Pursue responsible development of rich reserves of mining, fisheries, agricultural and tourism resources.
- *International mining developers* – Build on existing relationships to attract new, international investment and partners to the region.
- *Tourism potential* – Build on natural scenic beauty and wildlife viewing, proximity to five national parks and preserves, rich cultural heritage, airline service, and existing accommodations and amenities to support tourism industry growth.
- *National security* – Explore potential U.S. Coast Guard or other military tenancy or partnerships that address Arctic and national security.

Threats – Potential Negative Impacts

NAB faces potential threats to economic development including climate change, dependency on state and federal funding, global resource commodity prices, and outside interests and political dynamics. Components of these threats include:

- *Climate change* – Impacts include coastal erosion, melting permafrost affecting infrastructure and maintenance, and impacts on subsistence resources.
- *Out-migration* – Loss of population and qualified workforce seeking lower cost of living and improved employment and education opportunities outside the region undercut local business development.
- *Revenue diversity/dependence on State/Federal* government – Growing pressures on state and federal budgets threaten NAB's ability to attract public funding for resource and infrastructure development.
- *Commodity prices* – High exposure to variable global commodity prices (metals, salmon, fuel) threatens regional revenue sources, infrastructure project feasibility, and exploration and development potential.
- *Land ownership by Federal/State government* – Government rules and regulations regarding adjoining or proximal state or federal lands may constrain development options.
- *Outside influence on development* – Outside environmentalist and other political interests can impact NAB economic development issues.

Chapter 4: Economic Resiliency

This chapter summarizes NAB's approach to maximizing economic development opportunities as well as building resiliency.

This plan's vision statement reflects the need for self-sufficiency, reducing the region's exposure to a single major industry and reliance on the State budget to subsidize the cost of living. Through stakeholder interviews, data analysis, and work with the EDC, key themes emerged to enhance NAB's economic resiliency.

- **Strengthen Cultural Ties** – NAB's approach to its economic development strategy includes a strong emphasis on the Iñupiaq culture to ensure development does not harm subsistence resources, builds community capacity to lessen outside influence and control, and enhances community wellness and student performance.

- **Diversify Economy –** NAB is highly dependent on the mining industry and plans to pursue opportunities to diversify the economy, including additional natural resource development (such as other mining opportunities and commercial fisheries), tourism, and other initiatives, such as transportation related revenues.

- **Diversify Revenue** – NAB is striving to reduce the economic uncertainty and reliance on State funding to fund government activities by ensuring appropriate Borough government savings and supporting resource and business developments that fiscally contribute to its ability to provide services.

- **Diversify Energy Sources** – Reliance on diesel fuel for heat and energy increases cost of living in the region and makes region vulnerable to changes in fuel prices; While the Power Cost Equalization program reduces the cost of energy for households currently, reductions in the program could significantly impact cost of living. The region is implementing strategy to diversify energy sources away from diesel to alternative sources suited to small scale production with the intent of reducing power costs throughout the region.

- **Develop Competitive Infrastructure** – NAB recognizes the need to incorporate emergent communications technology and transportation infrastructure, competitively positioning the NAB as an attractive region to invest and do business.

- **Enhance Job Skills** – NAB is working toward skills training within the region to position its residents to take advantage of business and industry development opportunities, such as new mining jobs, small business entrepreneurship, and health facilities.

- **Engage in Arctic Strategy** – The borough is seeking to position itself as a strategic Arctic location for defense installations and maritime safety. With climate change, new transportation routes and increased maritime traffic present new opportunities to create new infrastructure for the region.

Chapter 5: Strategic Direction/Action Plan/ Evaluation Framework

This chapter presents the CEDS vision statement, overarching goals, priority objectives and action plan as developed in consultation with the EDC and stakeholders. It also reviews related strategic initiatives already underway in the NAB. Other objectives, deemed important but not highest priority, are listed under each goal. Action plan items include:

- Activities – *What activities need to be completed?*
- Timeline – *What is a realistic timeframe for execution?*
- Responsibility – *Which organization will lead and which organization will support the action item?*
- Expected costs – *How much will this action item cost?*
- Potential funding sources – *Where will funding come from?*

The evaluation measures for each priority objective can be found in Chapter 6. Brief descriptions of key partners and their roles can be found in Appendix D. Detailed actions were not specified for non-priority objectives; however, plans for each of these objectives do exist in other NAB planning initiatives (see Appendix A).

CEDS Vision Statement

The Northwest Arctic Borough has a robust and diverse economy supporting economic self-sufficiency and Iñunialautaq (good life) for all residents.

Strategic Plan

Goal A: ***Develop the critical utilities, transportation, energy, and housing infrastructure to lower cost burdens and adapt to climate change while preserving subsistence resources. Improved infrastructure will increase economic development investment; attract new business opportunities; grow, attract, and retain labor force; protect communities from the effects of climate change; and promote sustainability.***

Improvement and Development of Critical Infrastructure			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
• NW Arctic Leadership Team • Partnerships • Innovative approach to energy • Strategic Arctic location • Adaptability	• High cost burdens (transportation, workforce, housing, consumables, energy) • Infrastructure (utilities, transportation, energy, and housing) • Remoteness and lack of community connectivity • Community collaboration and engagement	• Transportation infrastructure improvement • Internet infrastructure • National Security	• Out-migration • Climate change

Improvement and Development of Critical Infrastructure

Priority Objective 1: Enact regional energy plan to reduce costs, increase capacity for bulk fuel storage, improve and increase energy efficiency, and support innovative approaches to alternative energy, where feasible

Action	Timeline	Lead	Partners	Cost	Funding Sources
Collaborate with partners on pilot projects for testing purposes	2019-2024	NAB	NAB Energy Steering Committee	$30,000 annually	US Department of Energy
Continue to seek funding, opportunities, and monitoring of renewable energy projects	2019-2024	NAB	NAB Energy Steering Committee	$25,000 annually	NAB, NANA
Educate residents on how to reduce energy costs	2019-2024	NAB Energy Steering Committee	Energy providers, NWABSD, ACEP	$250,000	AHFC
Create a business plan for energy efficiency co-op	2019-2024	NAB/NANA	NAB Energy Steering Committee	$50,000	U.S. Department of Energy
Create joint action agency for co-op and use organization to support energy infrastructure build out	2019-2020	NAB/NANA	NAB Energy Steering Committee	$100,000	U.S. Department of Energy
Develop adequate fuel storage in communities	2019-2024	NAB	NAB Energy Steering Committee, NWABSD, Teck Alaska	$10-$15 million	Denali Commission, AEA, VIF
Create co-ops or MOAs to buy fuel together and collaborate in funding approach with partners	2019-2024	NAB	NAB Energy Steering Committee	$100,000	KEA, Municipal utilities, NAB

Priority Objective 2: Increase the number of affordable housing units in NAB

Action	Timeline	Lead	Partners	Cost	Funding Sources
Assess land use policy, right-of-way, and zoning barriers for residential development	2019-2024	NAB	NANA, KIC, City of Kotzebue, NIHA	$150,000	NIHA, U.S. Economic Development Administration NAB Planning Department
Assess utility development barriers for residential development	2019-2024	NAB	NIHA, ANTHC/ARUC, VSW, municipal utilities, KEA, AVEC	$150,000	ANTHC, NIHA, NAB Public Services Department

Priority Objective 3: Support development of Cape Blossom road and port

Action	Timeline	Lead	Partners	Cost	Funding Sources
Support Cape Blossom state and federal government lobbying efforts to enhance community access and address national security	2019-2024	City of Kotzebue, Native Village of Kotzebue	NAB, NANA, KIC, Maniilaq, DOTPF	$100,000	City of Kotzebue, Native Village of Kotzebue, NAB, DOTPF
Execute MOA to maintain road from Sadie Creek to port site with Borough Assembly approval	2019	NAB	City of Kotzebue, KIC, NANA	$25,000	NAB, DOTPF

Goal B: *Develop natural resources, such as minerals, fisheries, agriculture, oil & gas, and tourism, to increase economic diversity while preserving subsistence resources. Promote revenue diversification and stability, broaden business development opportunities, and enhance employment potential in a culturally appropriate way.*

Natural Resource Development and Economic Diversity			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
• Natural resources and habitat • Resource development revenue to the Borough government • Local mining industry experience • Strategic Arctic location • NW Arctic Leadership Team • Tribal Government(s)	• Revenue diversification • Economic diversification • Community capacity	• Natural resource development opportunities • International developers/mining • Tourism potential	• Out-migration • Climate change

Natural Resource Development and Economic Diversity

Priority Objective 1: Seek opportunities to diversify natural resource development, including fisheries, agriculture, and others

Action	Timeline	Lead	Partners	Cost	Funding Sources
Research and examine feasibility of locally sourced plant product manufacturing	2019-2024	EDC	UAF, Teck	$25,000	U.S. Department of Agriculture, NAB, UAF, U.S. Economic Development Administration
Complete feasibility study for hydroponic gardens and/or greenhouses	2019-2021	UAF – Chukchi Campus	NAB Energy Steering Committee, Maniilaq, NAB, NWABSD	$50,000	U.S. Department of Agriculture
Evaluate the recommendations of the Fish/Meat Processing Facility Feasibility Study for implementation	2019-2020	EDC	NMS, KSFA,	$250,000	U.S. Economic Development Administration, U.S. Department of Agriculture, Alaska Department of Environmental Conservation
Explore potential for CDQ expansion to Northwest Arctic fisheries	2019-2021	EDC	NAB, KSFA	$50,000	U.S. Economic Development Administration, U.S. Department of Agriculture,

Priority Objective 2: Promote economic diversification through entrepreneurship development

Action	Timeline	Lead	Partners	Cost	Funding Sources
Research and implement an entrepreneurship development program	2019-2021	NAB	UAA-Center for Economic Development, Wells Fargo, NANA	$350,000	EDA, Teck Alaska, Trilogy Metals

Priority Objective 3: Engage tribal governments and communities to ensure economic development is done in a culturally appropriate way

Action	Timeline	Lead	Partners	Cost	Funding Sources
Build tribal government and local community capacity for early and continuous engagement prior to economic development planning and permitting, and interpretation of project documentation at each stage of development	2019-2024	NAB	NANA, Maniilaq, Teck Alaska, Trilogy Metals, AIDEA, NWALT	$2,000,000	ANTHC, EDC

Priority Objective 4: Develop visitor industry opportunities in the region

Action	Timeline	Lead	Partners	Cost	Funding Sources
Complete a visitor market potential assessment, feasibility study, and implementation plan to assess marketing promotion, facilities, services and amenities, tour packages, and operational needs	2020-2021	EDC	NMS, National Park Service, airlines, Tribes	$80,000	U.S. Economic Development Administration
Advance Sulianich Art Center by creating a consistent and reliable art market and providing workshops instructed by highly skilled artists	2019-2024	NAB	NANA, UAF – Chukchi Campus, NWABSD/ATC, Aggaluk Trust	$150,000 annually	NAB, NANA
Support development of an Iñupiaq Cultural Center	2019-2024	NAB	EDC, Aggaluk Trust, Sulianich Art Center, Alaska Community Foundation	$15 million	U.S. Economic Development Administration

Goal C: *Improve academic achievement at the K-12 public education level, increase postsecondary opportunities with vocational and academic training, and enhance employability skills of local workforce. Develop and prepare workforce to meet the competitive needs of economic and business opportunities in a culturally appropriate way.*

Education and Workforce Development

Strengths	Weaknesses	Opportunities	Threats
• Subsistence and culture • Education and workforce development infrastructure • NW Arctic Leadership Team	• Education, workforce training, employability, and job readiness	• Development of human capital	• Out-migration •

Education and Workforce Development

Objective 1: Implement entrepreneurship, business, financial, and technical training for borough residents

Action	Timeline	Lead	Partners	Cost	Funding Sources
Provide small business education and adult basic education in accounting, computer science, customer services, and small engine repair, child day care, personal in-home care services	2019-2024	ATC	NWABSD, NANA, NAB/EDC, UAF – Chukchi Campus, thread, Maniilaq, Junior Achievement	$3 million	Wells Fargo (grant program), NWABSD

Objective 2: Increase transfer of culture from one generation to the next to strengthen educational outcomes

Action	Timeline	Lead	Partners	Cost	Funding Sources
Establish culture camps in all villages	2019-2024	NAB	Local and Regional Elders Councils, Aqqaluk Trust	$150,000	NAB, ANEP grant, Alaska Humanities Forum, NANA, Teck Alaska, VIF
Promote community mentorship of teachers to integrate cultural activities into the academic curriculum	2019-2024	NAB	NWABSD, NAB, NANA, Maniilaq, UAF, Local and Regional Elder Councils, Tribes	$15,000	NAB, ANEP grant, Alaska Humanities Forum, NANA, Teck, VIF
Implement the Iñupiaq Language Plan to preserve and perpetuate Iñupiaq language and culture	2019-2024	NAB	Regional Elders Council, Iñupiaq Language Commission, Qikiqtagruk Iñupiaq Youth Council, NANA, Aqqaluk Trust, Maniilaq, Inuit Circumpolar Council, First Alaskans Institute	$500,000	ANEP, Rasmuson Foundation, VIF, Alaska Humanities Forum

Chapter 6: Evaluation Framework

The matrix below summarizes the qualitative and quantitative performance measures developed for objectives and action times for each of the three goals.

Goal A: Improvement and Development of Critical Infrastructure	
Action	**Performance Measure**
Priority Objective 1: Enact regional energy plan	
a. Collaborate with partners on pilot projects	• Number of NAB Energy Steering Committee meetings discussing action item
	• Number of partners committed to pilot project administration, implementation, and/or financing
b. Continue to seek funding, opportunities, and monitoring of renewable energy projects	• Number of projects with a financial feasibility analysis
	• Number of projects with a technical feasibility analysis
	• Level of funding received for renewable energy projects
	• Number of NAB communities served
c. Educate residents on how to reduce energy costs	• Development of communication material/plan for distribution
	• Number of communities engaged in education campaign
	• Number of people reached in campaign activities
	• Measured effectiveness of campaign to shift awareness and action to reduce energy costs
d. Create a business plan for energy efficiency co-op	• Completion of business plan development
e. Create joint action agency for co-op to support energy infrastructure build out	• Selection of leadership and members of a joint action agency
	• Number of joint action agency meetings
f. Develop adequate fuel storage in communities	• Level of funding commitment received supporting fuel storage improvements or development
	• Number of completed fuel storage improvements or developments
g. Create co-ops or memorandums of understanding to buy fuel with partners	• Completion of memorandum of understanding with partners to combine purchase commitment
	• Number of annual bulk fuel purchases completed through partnerships
	• Number of unplanned/emergency purchases
Priority Objective 2: Increase affordable housing	
a. Assess land use policy, right-of-way, and zoning barriers for residential development	• Completion of land use assessment related to residential development
b. Assess utility development barriers for residential development	• Completion of utility assessment related to residential development
Priority Objective 3: Support Cape Blossom development	
a. Support Cape Blossom state and federal lobbying efforts	• Number of state and federal agency engagements to support Cape Blossom development
	• Development of lobbying strategy and communication materials
b. Execute memorandum of understanding to maintain road from Sadie Creek to port site	• Implemented memorandum of understanding for road maintenance

Goal B: Natural Resource Development and Economic Diversity	
Action	**Performance Measure**
Priority Objective 1: Diversify natural resource development	
a. Research feasibility of locally-sourced plant product manufacturing	• Identified priority products to be studied
	• Completion of feasibility study for locally-sourced plant product manufacturing
b. Complete feasibility study for hydroponic gardens	• Completion of feasibility study for hydroponic gardens/greenhouses
c. Evaluate recommendation of Fish/Meat Processing Facility Study for implementation	• Selection of recommendations for implementation
d.	• Completion of business plan model
e. Explore potential for CDQ expansion to Northwest Arctic fisheries	• Development of lobbying strategy and material to open Arctic federal fishery
	• Development of study and strategy to evaluation potential impact on NAB
Priority Objective 2: Promote entrepreneurial development	
a. Research and implement an entrepreneur development program	• Selection of program model and level of financial commitment to implement program
Priority Objective 3: Engage Tribal government and communities	
a. Build tribal governments and local community capacity for early and continuous engagement prior to economic development planning and permitting, and interpretation of project documentation at each state of development	• Number of trainings provided to tribal governments and local communities to learn more about the development and permitting process
	• Number of residents attending those trainings
	• Number of community and tribal meetings to impart information
Priority Objective 4: Develop the visitor industry	
a. Complete visitor market potential assessment, feasibility study, and implementation plan	• Completion of market feasibility assessment
	• Completion of an implementation strategy
b. Advance Sulianich Art Center	• Number of workshops provided
	• Number of attendees
	• Annual revenue and costs
c. Support development of Iñupiaq Cultural Center	• Completion of a feasibility analysis

Goal C: Education and Workforce Development	
Action	**Performance Measure**
Priority Objective 1: Implement entrepreneurship, business, financial, and technical training	
a. Provide small business education and adult basic education	• Number of new education classes offered
	• Number of attendees per class
Priority Objective 2: Increase general transfer of culture to strengthen educational outcome	
a. Establish culture camps in all villages	• Number of culture camps created
	• Number of attendees
b. Promote community mentorship of teachers to integrate cultural activities into the academic curriculum	• Number of mentors identified for each community
	• Development of training materials and outcomes of mentorships
	• Number of teacher turnovers per community
c. Implement the Iñupiaq Language Plan to preserve and perpetuate Iñupiaq language and culture	• Number of language events or classes
	• Number of attendees
	• Development of language materials

Appendix A: Other CEDS Objectives

This appendix includes objectives that were not considered priority yet are important initiatives supporting economic development. Plans for each of these objectives do exist in other NAB planning initiatives. A list of plans referenced can be found in Appendix G.)

Goal A: Improvement and Development of Critical Infrastructure	
Action	**Supporting NAB planning Initiative**
Objective 1: Develop transportation infrastructure and interties between communities	
Work with upper Kobuk communities on buy-in of road from Dalton Highway to Shungnak and mine site and work with BLM and AIDEA on road route and partnerships	NAB Strategy: Infrastructure 4C
Obtain funding for Kivalina Road and school and lobby at state and federal level for water/sewer and electrical services/infrastructure from Kivalina to new school site	NAB Strategy: Infrastructure 4C
Objective 2: Improve the region's telecommunications	
Develop a fiber optic network throughout the region	2015 CEDS
Objective 3: Evaluate water and sewer systems and make identified efficiency improvements	
Budget for long-term CUAP program funding with Borough Assembly	NAB Strategy: Infrastructure 4B
Address and remedy CUAP program issues with recommendations from ANTHC	NAB Strategy: Infrastructure 4B
Objective 4: Strengthen and improve the processes of the Village Improvement Fund (VIF)	
Support communities with technical assistance and implement online technology that explains the program, application, and processes	NAB Strategy: Economic Development 6D
Visit each village and present on the VIF program	NAB Strategy: Economic Development 6D

Goal B: Natural Resource Development and Economic Diversity	
Action	**Supporting NAB planning Initiative**
Objective 1: Select lands that provide maximum potential for future development in the borough	
Utilize municipal entitlement process to select an additional 300,000 acres of land within the region	2015 CEDS
Objective 2: Develop regional and village comprehensive plans	
Update long-range regional master plan	2015 CEDS, NAB Strategy: Land Use Management and Planning 5C
Assist communities with development and implementation of comprehensive plans for local development	2015 CEDS, NAB Strategy: Land Use Management and Planning 5C
Objective 3: Increase revenue options from mining and resource development	
Assess feasibility of ownership in Ambler Road to gain toll revenue	NAB Strategy: Tax and Revenue 1A
Enforce severance tax or negotiate PILT agreement with new mining developments	NAB Strategy: Tax and Revenue 1A

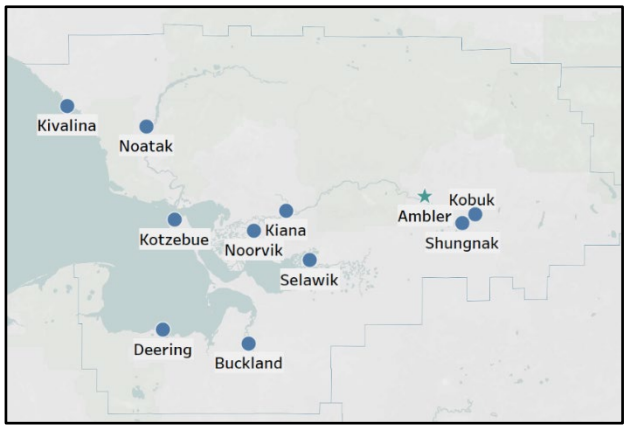
Goal C: Education and Workforce Development	
Action	**Supporting NAB planning Initiative**
Objective 1: Improve K-12 educational quality and student performance	
Explore district curriculum for place-based education	2015 CEDS
Increase language and culture taught in and after school	2015 CEDS
Objective 2: Increase the number of residents who are trained or certified to meet employment needs	
Offer opportunities for professionals to obtain additional certifications such as teachers, accountants, health care professionals, and other professional occupations needed in the region	2015 CEDS
Provide vocational education in the areas of carpentry, plumbing, electrical work, commercial driving, and heavy equipment operation and repair needed in the region	2015 CEDS
Provide targeted postsecondary education in Kotzebue	2015 CEDS
Objective 3: Improve parent/teacher/community connections	
Support pre-Kindergarten school readiness	2015 CEDS
Support existing youth clubs and provide funding for activities as possible	2015 CEDS
Objective 4: Provide career pathways and accessible methods	
Explore advancement of scholarship consortium and continue communication regarding targeted scholarship opportunities	NAB Strategy: Economic Development 6C
Objective 5: Provide support to increase the number of residents who complete their GED	
No action items identified	2015 CEDS

Appendix B. Community Profiles

Ambler – Ivisaappaat

Demographics and Socioeconomics

Year Incorporated	1971
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Ambler
Population (2018)	287
Median Age (2013-2017)	26.9
% Alaska Native/American Indian alone or in combination (2013-2017)	96%
Average Household Size (2013-2017)	3.83
Median Household Income (2013-2017)	$44,500
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Alaska Village Electric Cooperative
Water System	Circ
Wastewater System	Gravity
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	2,400 ft x 60 ft
Runway 2	3,000 ft x 60 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
Ambler Elementary School	10-19
Northwest Arctic Borough School District	10-19
Native Village of Ambler	10-19
US Federal Aviation Admin	10-19
Number of Active Business Licenses (2019):	10

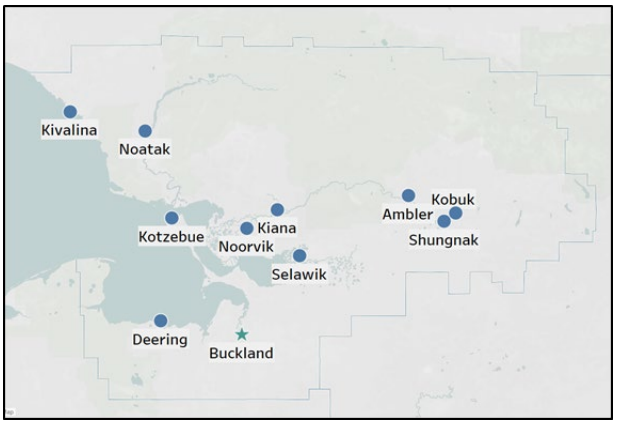
Schools

Ambler K-12 School
Grades: Pre K-12 Enrollment: 75 Year Built: 2004

Buckland – Nunachiaq

Demographics and Socioeconomics

Year Incorporated	1966
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Buckland
Population (2018)	511
Median Age (2013-2017)	22.9
% Alaska Native/American Indian alone or in combination (2013-2017)	97%
Average Household Size (2013-2017)	5.02
Median Household Income (2013-2017)	$41,932
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Alaska Village Electric Cooperative
Water System	Haul, Washeteria
Wastewater System	Haul
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	3,200 ft x 75 ft
	Seasonal
Barge Access	Alaska Village Electric Cooperative

Employment

Top Employers	Employees
Buckland School	20-49
Buckland Clinic	5-9
Maniilaq Association	5-9
Buckland IRA Council	5-9
City Office	5-9
Number of Active Business Licenses (2019):	9

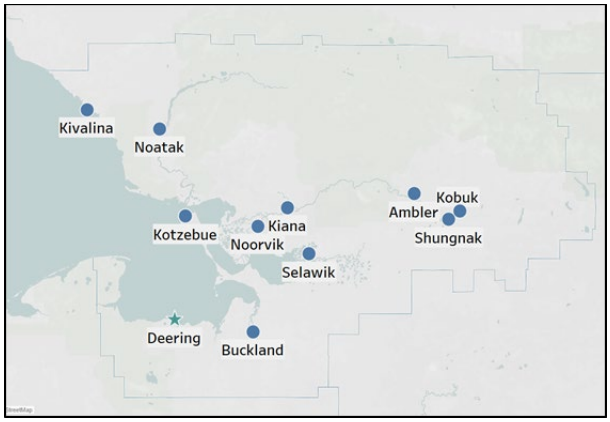
Schools

Buckland School
Grades: Pre K-12 Enrollment: 189 Year Built: 2004

Deering – Ipnatchiaq

Demographics and Socioeconomics

Year Incorporated	1970
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Deering
Population (2018)	168
Median Age (2013-2017)	27.3
% Alaska Native/American Indian alone or in combination (2013-2017)	92%
Average Household Size (2013-2017)	3.53
Median Household Income (2013-2017)	$44,375
Denali Commission Distressed Community (2018)	No



Infrastructure

Electric Utility	Ipnatchiaq Electric Company
Water System	Water delivery, Washeteria
Wastewater System	Vacuum, Honeybucket
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	3,320 ft x 75 ft
Runway 2	2,660 ft x 75 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
Ipnatchiaq Electric Co	5-9
Deering School	5-9
Deering Clinic	5-9
Maniilaq Center	5-9
Number of Active Business Licenses (2019):	6

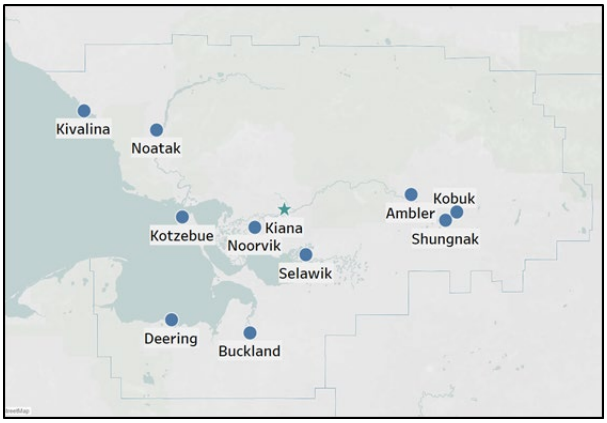
Schools

Deering School
Grades: Pre K-12 Enrollment: 41 Year Built: 1984

Kiana – Katyaak

Demographics and Socioeconomics

Year Incorporated	1964
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Kiana
Population (2018)	421
Median Age (2013-2017)	25.3
% Alaska Native/American Indian alone or in combination (2013-2017)	95%
Average Household Size (2013-2017)	3.51
Median Household Income (2013-2017)	$42,813
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Alaska Village Electric Coop
Water System	Circ
Wastewater System	Gravity
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	3,400 ft x 100 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
Kiana High School	20-49
Raven Air	5-9
Kiana Clinic	5-9
Maniilaq Association	5-9
City of Kiana	5-9
Number of Active Business Licenses (2019):	8

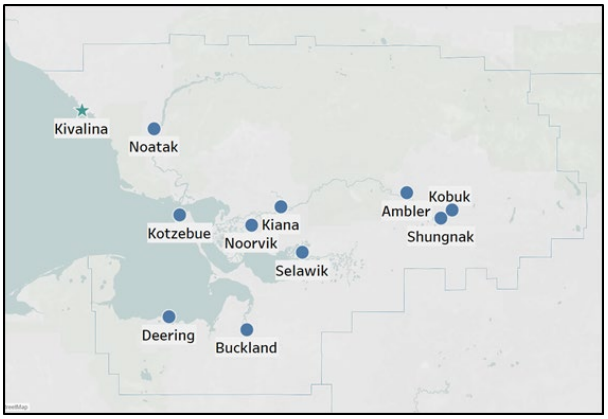
Schools

Kiana School
Grades: Pre K-12 Enrollment: 128 Year Built: 1979

Kivalina – Kivaliniq

Demographics and Socioeconomics

Year Incorporated	1969
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Kivalina
Population (2018)	442
Median Age (2013-2017)	23.8
% Alaska Native/American Indian alone or in combination (2013-2017)	94%
Average Household Size (2013-2017)	5.4
Median Household Income (2013-2017)	$48,750
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Alaska Village Electric Coop
Water System	Haul, Washeteria
Wastewater System	Honeybucket
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	3,000 ft x 60 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
McQueen School	10-19
Kivalina Clinic	5-9
Maniilaq Association	5-9
City of Kivalina	5-9
Kivalina Native Village	5-9
Number of Active Business Licenses (2019):	7

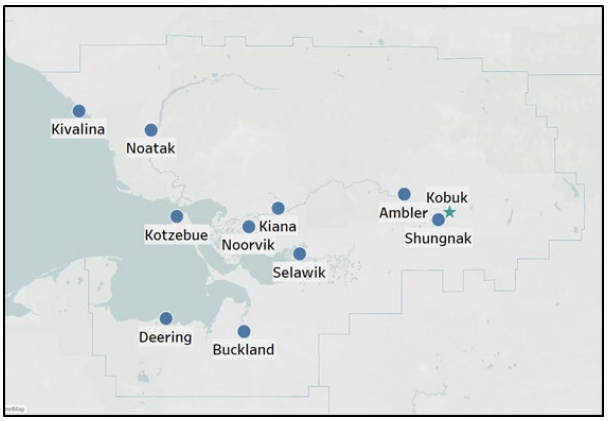
Schools

McQueen School
Grades: Pre K-12 Enrollment: 162 Year Built: 1976

Kobuk – Laugviik

Demographics and Socioeconomics

Year Incorporated	1973
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Kobuk
Population (2018)	144
Median Age (2013-2017)	18.3
% Alaska Native/American Indian alone or in combination (2013-2017)	95%
Average Household Size (2013-2017)	4.75
Median Household Income (2013-2017)	$52,500
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Kobuk Valley Electric Association
Water System	Circ
Wastewater System	Gravity
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	4,020 ft x 75 ft
Runway 2	4,780 ft x 75 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

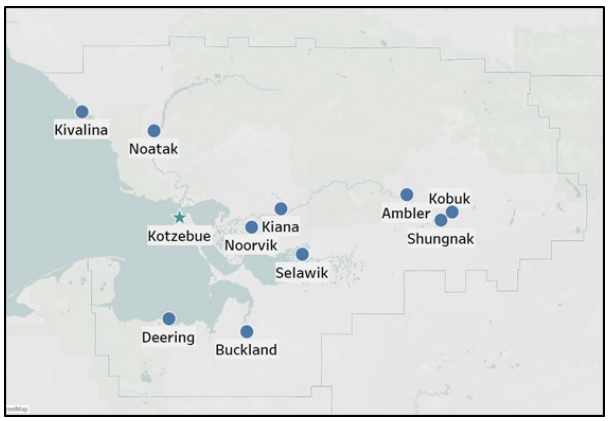
Top Employers	Employees
Kobuk School	10-19
Kobuk Store Inc	5-9
Native Village of Kobuk	5-9
Kobuk Airport-OBU	1-4
Nana Regional Corp Kobuk	1-4
Number of Active Business Licenses (2019):	7

Schools

Kobuk School
Grades: Pre K-12 Enrollment: 49 Year Built: 1967

Kotzebue – Qikiqtagruk

Demographics and Socioeconomics	
Year Incorporated	1958
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Kotzebue
Population (2018)	3121
Median Age (2013-2017)	29.3
% Alaska Native/American Indian alone or in combination (2013-2017)	73%
Average Household Size (2013-2017)	3.44
Median Household Income (2013-2017)	$88,047
Denali Commission Distressed Community (2018)	No



Infrastructure	
Electric Utility	Kotzebue Electric Association
Water System	Piped
Wastewater System	Piped
Landfill Class	II
Road Access	No
Air Access	Asphalt airport
Runway 1	6,300 ft x 150 ft
Runway 2	3,876 ft x 90 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

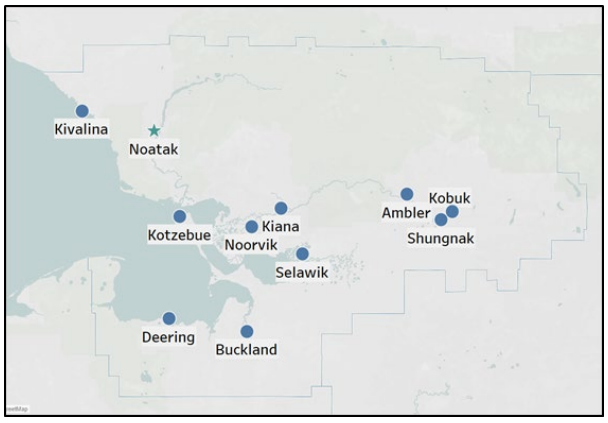
Top Employers	Employees
Maniilaq Association	500-999
Alaska Commercial Co	50-99
Kotzebue High School	50-99
City of Kotzebue	50-99
June Nelson Elementary School	50-99
Number of Active Business Licenses (2019):	124

Schools

Kotzebue Middle/High School
Grades: Pre K-12 Enrollment: 330 Year Built: 1984
June Nelson Elementary School
Grades: Pre K-5 Enrollment: 392 Year Built: 1956

Noatak – Nautaaq

Demographics and Socioeconomics	
Year Incorporated	Not incorporated
Community Type	CDP
Federally Recognized Tribe	Native Village of Noatak
Population (2018)	581
Median Age (2013-2017)	26.4
% Alaska Native/American Indian alone or in combination (2013-2017)	99%
Average Household Size (2013-2017)	4.42
Median Household Income (2013-2017)	$50,000
Denali Commission Distressed Community (2018)	Yes



Infrastructure	
Electric Utility	Alaska Village Electric Coop
Water System	Circ/heated system
Wastewater System	Gravity
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	3,992 ft x 60 ft
Dock/Port	No
Barge Access	None

Employment

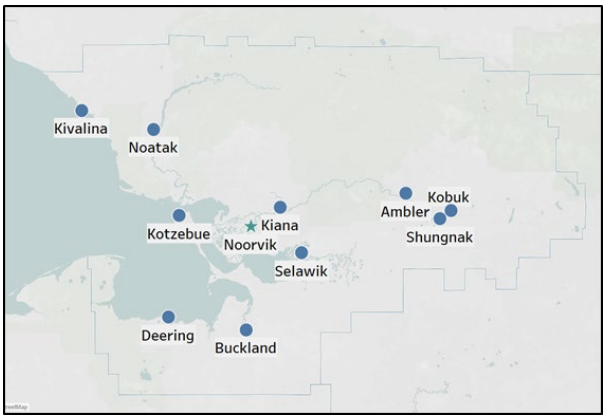
Top Employers	Employees
Napaaqtugmiut School	20-49
Noatak Ira Main Office TPC	20-49
Noatak Native Village	10-19
Noatak I R A Main	10-19
US Federal Aviation Admin	10-19
Number of Active Business Licenses (2019):	8

Schools

Napaaqtugmiut School
Grades: Pre K-12 Enrollment: 174 Year Built: 2008

Noorvik – Nuurvik

Demographics and Socioeconomics	
Year Incorporated	1964
Community Type	2nd Class City
Federally Recognized Tribe	Noorvik Native Community
Population (2018)	629
Median Age (2013-2017)	25.7
% Alaska Native/American Indian alone or in combination (2013-2017)	95%
Average Household Size (2013-2017)	4.55
Median Household Income (2013-2017)	$48,750
Denali Commission Distressed Community (2018)	Yes



Infrastructure	
Electric Utility	Alaska Village Electric Coop
Water System	Pressure, Circ
Wastewater System	Vacuum
Landfill Class	III
Road Access	No
Air Access	No
Dock/Port	Yes
Barge Access	Seasonal

Employment

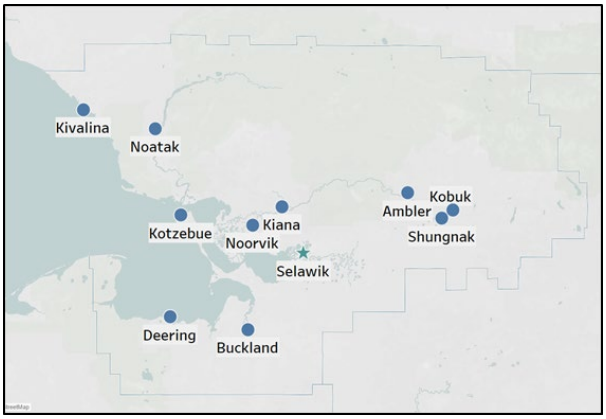
Top Employers	Employees
Napaaqtugmiut School	20-49
Noatak Ira Main Office TPC	10-19
Noatak Native Village	5-9
Noatak I R A Main	5-9
Number of Active Business Licenses (2019):	8

Schools

Aqqaluk High/Noorvik Elementary
Grades: Pre K-12 Enrollment: 204 Year Built: 1974

Selawik – Akuligaq

Demographics and Socioeconomics	
Year Incorporated	1977
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Selawik
Population (2018)	845
Median Age (2013-2017)	24
% Alaska Native/American Indian alone or in combination (2013-2017)	99%
Average Household Size (2013-2017)	4.75
Median Household Income (2013-2017)	$35,625
Denali Commission Distressed Community (2018)	Yes



Infrastructure	
Electric Utility	Alaska Village Electric Coop
Water System	Circ
Wastewater System	Vacuum
Landfill Class	III
Road Access	No
Air Access	No
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
Selawik High School	20-49
Selawik City Office	10-19
Selawik Police Dept	10-19
US Fish & Wildlife Svc	10-19
Number of Active Business Licenses (2019):	6

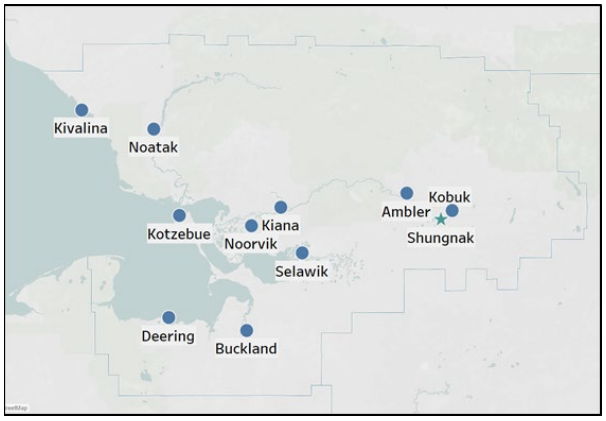
Schools

Davis-Ramoth School
Grades: Pre K-12 Enrollment: 264 Year Built: 1975

Shungnak – Issingnak

Demographics and Socioeconomics

Year Incorporated	1967
Community Type	2nd Class City
Federally Recognized Tribe	Native Village of Shungnak
Population (2018)	274
Median Age (2013-2017)	22.5
% Alaska Native/American Indian alone or in combination (2013-2017)	80%
Average Household Size (2013-2017)	5.09
Median Household Income (2013-2017)	$39,688
Denali Commission Distressed Community (2018)	Yes



Infrastructure

Electric Utility	Alaska Village Electric Coop
Water System	Circ
Wastewater System	Gravity
Landfill Class	III
Road Access	No
Air Access	Gravel airport
Runway 1	4,001 ft x 60 ft
Dock/Port	Yes
Barge Access	Seasonal

Employment

Top Employers	Employees
Northwest Arctic Borough School District	10-19
Shungnak School	10-19
Shungnak Native Store	5-9
Shungnak Clinic	5-9
Shungnak City Office	5-9
Number of Active Business Licenses (2019):	4

Schools

Shungnak School
Grades: Pre K-12 Enrollment: 61 Year Built: 1976

Appendix C: CEDS Advisory Leaders and Acknowledgement

Special acknowledgement to NAB, EDC, and NAB Assembly members who contributed and guided this CEDS process and plan.

Northwest Arctic Borough

- Lucy Nelson, Mayor
- Chuck Greene, Director of Economic Development
- Ingemar Mathiasson, Energy Coordinator
- Jaime Schaeffer, Economic Development Administrator/FRF Memorial Scholarship Coordinator

Economic Development Commission

- Matt Bergan, Chair, Utility/Kotzebue
- Joseph Bia, Jr., Financial/Kotzebue
- Liz Qaulluq Cravalho, NANA
- Ely Cyrus, Tribal Representative/Kiana
- Chuck Greene, NAB Economic Development Director
- Rick Van Nieuwenhuyse, Private Business
- Daisy Weinard, Private Business/Deering
- Fritz Westlake, Vice Chair, Teck/Red Dog
- Mike Zibell, Higher Ed/Noorvik
- *Ex-Officio Member:* John Lincoln/State Representative
- *Ex-Officio Member:* Donny Olson/State Senator

Northwest Arctic Borough Assembly

- Elmer Armstrong, Jr.
- Dood Carr
- Miles Cleveland, Sr.
- Nathan Hadley, Jr.
- Reggie Joule III
- Hannah Paniyavluk Loon
- Kirk Oviok
- Walter Sampson
- Sandy Shroyer-Beaver
- Austin Swan, Sr.
- Nelda Swan
- Larry Westlake, Sr.

Appendix D: Key Regional Partners

Below are organizations that may lead or support CEDS's action plan through contribution of administrative, advocacy, programmatic, and/or financial support.

Alaska Department of Environmental Conservation Division of Water, Village Safe Water is the state agency which works with rural communities to develop sustainable water and sanitation facilities.

Alaska Department of Transportation and Public Facilities (ADOTPF) is the state agency responsible to develop and maintain the state's transportation networks.

Alaska Industrial Development and Export Authority (AIDEA) is a public corporation of the State of Alaska with several established programs aimed at financial assistance for economic development including loan participation, conduit bonding authority, loan guarantees, and development finance.

Alaska Native Tribal Health Consortium (ANTHC) Alaska Rural Utility Cooperative (ARUC) is a statewide program that partners communities to manage, operate, and maintain water/sewer systems in rural Alaska.

Alaska Technical Center (ATC) is an adult training center located in Kotzebue.

Alaska Village Electric Cooperative (AVEC) is a nonprofit electric utility serving residents in villages in the region, excluding Kotzebue, Buckland, and Deering.

Aqqaluk Trust awards scholarships to NANA shareholders, their descendants, and dependents that are pursuing college and post-graduate degrees and post-secondary education. The Trust strategies are to create a successful Iñupiaq language revitalization effort and the youth culture Camp Sivunniigvik.

Denali Commission is an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska.

Iñupiaq Language Commission includes Iñupiaq language speakers from across Northwest Alaska who strive to preserve and perpetuate the Iñupiaq language of Northwest Alaska.

Kikiktagruk Iñupiat Corporation is an Alaska Native Corporation organized to serve the Iñupiat of Kotzebue.

Kotzebue Electric Association (KEA) is a membership organization that generates electricity in the region.

Kotzebue Sound Fisheries Association (KSFA) was initially formed to advocate for the interests of local commercial fishermen.

NANA Management Services (NMS) is a subsidiary of NANA Regional Corporation providing food, accommodations, security, and staffing services.

National Parks Services manages the Kobuk Valley National Park, Cape Krusenstern National Monument, Noatak National Preserve, Bering Land Bridge National Preserves, and Gates of the Arctic National Park and Preserve – all in or proximal to the NAB.

Native Village of Kotzebue is the Federally-recognized Tribal government representing the Qikikitagrukmiut living in the Kotzebue area. The Tribe, a sovereign entity, commonly called the Kotzebue IRA.

Northwest Arctic Energy Steering Committee was created in 2009 to make sure all stakeholders participated in the development and implementation of the NAB's energy strategic plan.

Northwest Arctic Leadership Team (NWALT) is a partnership among Maniilaq Association, NANA Regional Corporation, the Northwest Arctic Borough, and the Northwest Arctic Borough School District to maximize resources and reduce duplication of efforts to address issues affecting the people of Northwest Alaska while honoring and perpetuating the Iñupiat cultural heritage.

- **Maniilaq Association (Maniilaq)** is a nonprofit corporation providing health, social, and tribal services (traditional assistance programs, and environmental and subsistence protection services) to the residents of NAB and Point Hope.
- **NANA Regional Corporation, Inc. (NANA)** is a regional Alaska Native Corporation created pursuant to the Alaska Native Claims Settlement Act. NANA's mission is to provide economic opportunities for its more than 13,000 Iñupiaq shareholders and to protect and enhance NANA lands.
- **Northwest Arctic Borough (NAB)** is a home rule borough. It is the second largest borough in the state (approximately 36,000 square miles or the size of Indiana). NAB's mission is to improve the quality of life for all residents. Product and service delivery is accomplished through three main departments of Planning, Public Services, and Economic Development.
- **Northwest Arctic Borough School District (NWABSD)** provides Kindergarten to Grade 12 education to children living in the Northwest Arctic Borough, by supporting both Iñupiat and Western standards of success in classrooms.

Qikiqtagruk Iñupiaq Youth Council provides a collective voice and represents the tribal youth in all matters that concern them.

Teck Alaska is the owner (along with NANA) and operator of the Red Dog Mine, one of the world's largest lead, zinc, and silver mine located 170 miles north of Kotzebue.

University of Alaska Fairbanks Alaska Center for Energy & Power (ACEP) conducts applied energy research and testing focused on lowering the cost of energy throughout Alaska and development economic opportunities for the State, its residents, and its industries.

University of Alaska Fairbanks (UAF) – Chukchi Campus is the University of Alaska Fairbanks rural education center in Kotzebue to serve NAB communities.

Village Improvement Commission (VIC) is the advisory body of community residents to provide oversight of the Village Investment Fund (VIF) was created in 2017 as part of the NAB and Teck's new Payment in Lieu of Taxes agreement. The VIF is targeted at critical infrastructure, services, and programs for all communities in the NAB.

Appendix E. List of Stakeholders Interviewed

- Guy Adams, Northwest Iñupiat Housing Authority
- Joe Bia Jr., Wells Fargo
- Rob Boudreau, AC Value Center
- Liz Qaulluq Cravalho, NANA Regional Corporation
- Cheryl Edenshaw, Alaska Technical Center
- Stacey Glaser, University of Alaska Fairbanks – Chukchi Campus
- Chuck Greene, Director of Economic Development Director, NAB
- Margaret Hansen, State of Alaska Department of Commerce, Community, and Economic Development Division of Community and Regional Affairs
- Lorraine Hunnicutt, City of Kotzebue
- Ronald Hunnicutt Sr., Crowley
- Jason Jessup, City of Kotzebue
- Linda Joule, Maniilaq Association
- Nathan Kotch Jr., Director of Public Works, NAB
- Noah Naylor, Kikiktagruk Iñupiat Corporation
- Lucy Nelson, Mayor, NAB
- Dr. Annmarie O'Brien, Northwest Arctic Borough School District
- Damon Schaeffer, NANA Regional Corporation
- Eugene Smith, Kikiktagruk Iñupiat Corporation
- Nicole Stoops, Native Village of Kotzebue
- Siikauraq Martha Whiting, Planning Director, NAB

Appendix F. Reference Materials

A variety of data sources were reviewed and referenced in the creation of the NAB CEDS, including Borough government documents, third-party reports, and standard data sources. This section outlines key data sources.

Primary documents reviewed included:

- *City of Kotzebue Capital Improvement Projects FY20/21 Priorities*
- *2019 Kotzebue Sound Salmon Management Plan*
- *Kotzebue Harbor Feasibility Study – Navigation Improvements at Cape Blossom (January 2019)*
- *Northwest Arctic Borough Comprehensive Economic Development Strategy (August 2015)*
- *Northwest Arctic Regional Energy Plan (July 2015)*
- *Northwest Arctic Borough 2019 Strategic Planning Objectives – Short- and Long-Term Goals and Objectives*
- *Northwest Arctic Regional Energy Plan (June 2016)*
- *Northwest Alaska Transportation Plan – Community Transportation Analysis (February 2004)*
- *Rural Alaska Tourism Infrastructure Needs Assessment – Northwest Arctic Borough (1997)*
- *Small Scale Salmon Processing Feasibility Study (March 2019)*

Publicly-available data were analyzed to provide key context for the action plan, including:

- *Alaska Bypass: Beyond Its Original Purposes (November 2011)*
- Alaska Department of Commerce Community and Economic Development (community infrastructure)
- Alaska Department of Labor and Workforce Development (demographics, employment and wages, labor force status, top employers)
- Alaska Department of Public Safety (Alaska State Troopers arrests)
- Alaska Department of Fish and Game (commercial and sport fishing harvest and participation)
- Alaska Department of Transportation and Public Facilities (planned/proposed regional capital projects)
- Alaska Housing Finance Corporation (housing occupancy, overcrowding, cost burdened households)
- Alaska Village Electric Cooperative and Alaska Energy Authority (fuel/electricity pricing, PCE subsidies)
- Bureau of Economic Analysis (personal income and employment)
- *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle (2009)*
- Denali Commission (distressed community status)
- Esri ArcGIS (Federal land ownership)
- Federal Financial Institutions Examination Council (small business loans)
- International Monetary Fund (commodity prices)
- McDowell Group, *Alaska Geographic Differential Study (2008)*
- McDowell Group, *Alaska Visitor Statistics Program 7 (2017)*
- McDowell Group, *The Economic Impacts of Guided Hunting in Alaska (2014)*
- *National Climate Assessment (2014)*
- National Park Service (park visitation)
- Northwest Arctic Borough School District (NWABSD) and Alaska Department of Education and Early Development (school enrollment, grade level proficiency, and graduation rates)
- *Run Forecasts and Harvest Projections for 2019 Alaska Salmon Fisheries and Review of the 2018 Season (March 2019)*
- U.S. Census Bureau's 2013-2017 American Community Survey data (demographics, housing characteristics, household income)

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