Northwest Arctic Borough

NWAB Mtg Packet

September Regular

Sept 21-22, 2026

Agenda

9-21-26 BAF Work Session Agenda 2
9-22-26 Reg Mtg Agenda 3

Boards and Commissions

AUG 2026 FINANCIAL REPORT TO ABLY 4
202608 Rev Exp All run on 20260911 13
MAYORS DONATIONS 38

Enactment of Ordinances

ORD 26-06 am01 - 2nd reading COVER PAGE 43
ORD 26-06am01 second reading 45
ORD 26-11 VIC Mtg Stipend 73
ORD 26-12 Mtg Incentives 76
53J8132-ORD 26-13 VIF Sustainability Fund - 2nd Reading 78

Mayors Report

September Planning Report 26 80
Lux Permit 110-09-26 Approved 82
2026-08-30 Caribou Spotter Flight Report 100
2026-08-31 Caribou Spotter Flight Report 104
2026-09-06 Caribou Spotter Flight Report 108
Sept 2026 Public Service Depart Report 113
NWAB Emergency Response 9-2 - 9-7 118
September_Monthly_assembly Report draft 125
CEDC September Monthly Report 129

Non-Agenda

CCAP-Energy-Plan_Sept-2026 139

Northwest Arctic Borough
Assembly BAF Work Session
Monday, September 21, 2026 – 1:00 P.M.
Assembly Chambers – Kotzebue, AK
1-800-309-2350 Teleconference
6816362#
AGENDA

A. CALL TO ORDER
B. INVOCATION/MOMENT OF SILENCE
C. SAFETY MOMENT
D. ROLL CALL
1. Introduction of Staff and Guests

E. APPROVAL OF AGENDA **TAB 1**
F. COMMUNICATIONS AND APPEARANCES **TAB 3**
1. Financials as of August 31, 2026, Jade Hill
2. Climate Energy Plan, Ingemar Mathiasson

G. PUBLIC HEARINGS, ENACTMENT OF ORDINANCES & EMERGENCY ORDINANCES **TAB 4**
1. **Ordinance 26-06am01** *an ordinance of the Northwest Arctic Borough Assembly providing for the establishment and adoption of the amended line-item budget for fiscal year 2027.*
2. **Ordinance 26-11** *an ordinance of the Northwest Arctic Borough Assembly amending the Borough Code to update the Village Improvement Commission Meeting Stipend, and for related purposes.*
3. **Ordinance 26-12** *an ordinance of the Northwest Arctic Borough Assembly amending the Borough Code to update the meeting incentives cap, and for related purposes.*
4. **Ordinance 26-13** *an ordinance of the Northwest Arctic Borough Assembly amending the Borough Code to specifically address the Village Improvement Sustainability Fund, and for related purposes.*

H. INTRODUCTION OF ORDINANCES **TAB 6**
I. RESOLUTIONS **TAB 7**
J. OTHER BUSINESS **TAB 8**
K. EXECUTIVE SESSION
L. AUDIENCE COMMENTS
M. ASSEMBLY COMMENTS
N. MAYOR'S COMMENTS
O. ADJOURNMENT

Ambler Ivisaappaat, Buckland Nunatchiaq, Deering Ipnatchiaq, Kiana Katyaak, Kivalina Kivalieiq, Kobuk Laugviik, Kotzebue Qikiqtabruk, Noatak Nautaaq, Noorvik Nuurvik, Selawik Akulibaq, Shungnak Isifnaq

Northwest Arctic Borough
Assembly Regular Meeting
Tuesday, September 22, 2026 – 9:00 A.M.
Assembly Chambers – Kotzebue, AK
1-800-309-2350 Teleconference
6816362#

AGENDA

A. CALL TO ORDER
B. INVOCATION/MOMENT OF SILENCE
C. SAFETY MOMENT
D. ROLL CALL/MEMBER EXCUSAL
1. Introduction of Staff and Guests

E. APPROVAL OF AGENDA **TAB 1**
F. APPROVAL OF PREVIOUS MEETING MINUTES **TAB 2**
G. COMMUNICATIONS AND APPEARANCES **TAB 8**
H. BOARDS, COMMISSIONS & COMMITTEES **TAB 3**
1. Budget, Audit & Finance, BAF Chair Magdanz
2. Financial Report, Jade Hill

I. PUBLIC HEARINGS, ENACTMENT OF ORDINANCES & EMERGENCY ORDINANCES **TAB 4**
1. **Ordinance 26-06am01** *an ordinance of the Northwest Arctic Borough Assembly providing for the establishment and adoption of the amended line-item budget for fiscal year 2027.*
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J. ASSEMBLY REPORTS
K. MAYOR'S REPORT **TAB 5**
L. TIME AND PLACE OF NEXT MEETING **TAB 8**
M. INTRODUCTION OF ORDINANCES **TAB 6**
N. RESOLUTIONS **TAB 7**
O. OTHER BUSINESS **TAB 8**
P. EXECUTIVE SESSION
Q. AUDIENCE COMMENTS
R. ASSEMBLY COMMENTS
S. MAYOR'S COMMENTS
T. ADJOURNMENT

Northwest Arctic Borough

Table of Contents

August 31, 2026

General Fund Narrative Report	1
Fund Balance Summary	2
Cash and Investment Report	3
Revenue & Expenditures Summary	4
General Fund Expenditures	5
Special Projects	6
Village Improvement Fund	7
Grants Summary	8
General Fund Rev/Exp-Caselle Report	Caselle
VIF Revenue and Expenditures-Caselle Report	Caselle
Donations	Caselle

Northwest Arctic Borough

General Fund Revenue & Expenditures Narrative Report

August 31, 2026

As of August 31, 2026, the fiscal year is 17% complete.

We are providing explanation for the items highlighted on the accompanying Revenue/Expense report that appear to be in significant variance within the budget.

Account Name	
All General Fund Revenues	
PILT	Nothing significant to note.

General Fund Expenditures

Account Name	
01-01-Assembly Department	Nothing significant to note.
01-02-Mayor Department	Nothing significant to note.
01-03-Administration & Finance	Nothing significant to note.
01-05-Planning & Community	Nothing significant to note.
01-06-Planning Commission	Nothing significant to note.
01-07-CEDC	Nothing significant to note.
01-08-CED Commission	Nothing significant to note.
01-09-Public Services Department	Nothing significant to note.
01-10-Public Safety Commission	Nothing significant to note.
01-11-Public Safety Department	Nothing significant to note.

12- Water and Sewer Subsidy	Nothing significant to note.

02-VIF	Nothing significant to note.

Northwest Arctic Borough

Summary of Fund Balances

August 31, 2026

FY26 Fund Balance Activity	General Fund				VIF	
	Unassigned Fund Balance	Sustainability Fund Balance	Contingency Fund Balance	Designated Fund Balance	Assigned Fund Balance	Sustainability Fund Balance
Audited Fund Balance as of 6/30/2025	$ 40,507,730	$ 81,995,246	$ 10,000,000	-	$ 20,563,094	$ 32,089,150
FY26 Activity:						
Current YTD Increase/(Decrease)	8,179,231				1,223,923	
Designated for Legal Reserve						
Contribution to Sustainability	(6,600,000)	6,600,000				
Appropriated Fund Balance						
Unaudited Fund Balance 06/30/2026	42,086,961	88,595,246.00	0 10,000,000.00	0	21,787,017	32,089,150.00

FY27 Fund Balance Activity	General Fund				VIF	
	Unassigned Fund Balance	Sustainability Fund Balance	Contingency Fund Balance	Designated Fund Balance	Assigned Fund Balance	Sustainability Fund Balance
Unaudited Fund Balance as of 6/30/2026	$ 42,086,961	$ 88,595,246	$ 10,000,000	-	$ 21,787,017	$ 32,089,150
FY27 Activity:						
Current YTD Increase/(Decrease)	(2,636,004)				(2,012,997)	
Designated for Legal Reserve	(250,000)			250,000		

Northwest Arctic Borough

Cash and Investment Report

August 31, 2026

Institution	General Fund Accounts	Face Value of Investment	% of Total
Wells Fargo	Main GF Checking	$ 1,053,548	3%
Wells Fargo	Money Market Trust for GO Bonds	$ 1,270,189	3%
Wells Fargo	Sweep Investment	$ 10,419,197	26%
AMLIP	AMLIP	$ 27,193,880	68%
AMLIP	NAB CARES	$ 631	0%
Merrill Lynch	Investment in Teck Stock	$ 8,217	0%
Total General Fund Operating Accounts		**$ 39,945,662**	**100%**

Wells Fargo	**Checking-Sulianich**	**$ 1,524,325**	**N/A**

Institution	GF Contingency Reserve Portfolio	Fair Market Value of Investment	% of Total	Unrealized Gain Included in FMV
APCM	Equities	$ 3,074,913	28%	
APCM	Fixed Income	$ 7,464,345	68%	
APCM	Cash and Cash Equivalents	$ 487,435	4%	**$ 1,145,107**
Total GF Contingency Reserve Portfolio		**$ 11,026,693**	**100%**	.

Institution	Sustainability Fund Portfolio	Fair Market Value of Investment	% of Total	Unrealized Gain Included in FMV
APCM	Equities	$ 42,054,004	40%	
APCM	Fixed Income	$ 60,810,273	57%	
APCM	Cash and Cash Equivalents	$ 3,545,705	3%	**$ 13,361,972**
Total GF Sustainability Portfolio		**$ 106,409,982**	**100%**	

Institution	VIF Accounts	Face Value of Investment	% of Total
Wells Fargo	VIF Checking	$ 6,339,892	51%
AMLIP	VIF AMLIP	$ 6,157,218	49%
Total VIF Operating Accounts		**$ 12,497,110**	**100%**

Institution	VIF Sustainability Portfolio	Fair Market Value of Investment	% of Total	Unrealized Gain Included in FMV
APCM	Equities	$ 19,036,345	40%	
APCM	Fixed Income	$ 27,526,431	57%	
APCM	Cash and Cash Equivalents	$ 1,604,486	3%	**$ 7,256,518**
Total VIF Sustainability Portfolio		**$ 48,167,262**	**100%**	

GF Operating Cash	$ 41,469,987
GF Investments	$ 117,436,675
Total GF Cash & Investments	$ 158,906,662
VIF Operating Cash	$ 12,497,110
VIF Investments	$ 48,167,262
Total VIF Cash & Investments	$ 60,664,372
Total Borough Cash and Investments	**$ 219,571,034**

Northwest Arctic Borough

General Fund Revenue and Expenditure Totals

August 31, 2026

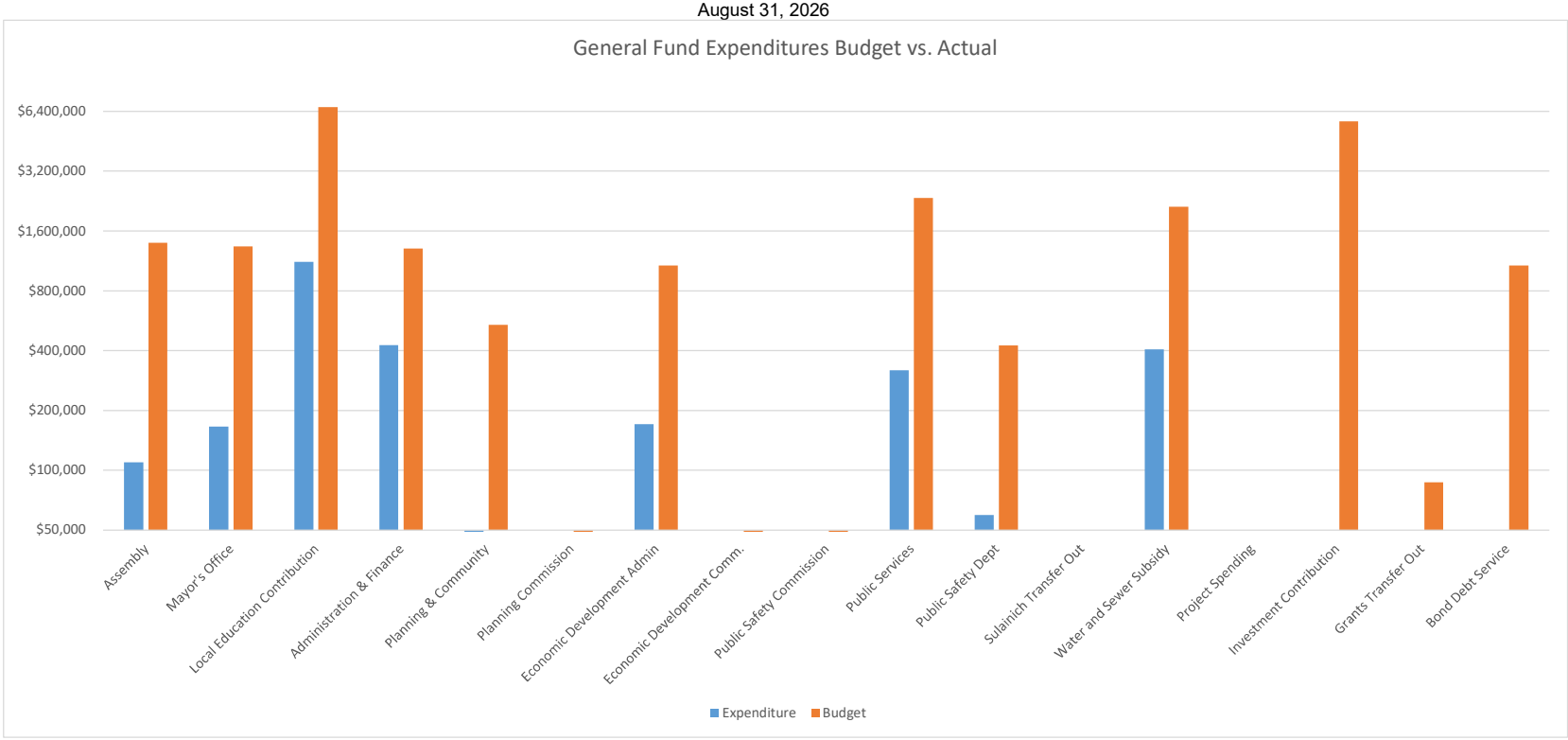
Revenue (alphabetical order)	**Actual**	**Budget**	**% Received**
Administrative Fee Revenue		30,000	0%
Community Revenue Sharing		345,962	0%
Federal PILT Revenue		1,100,062	0%
Indirect Cost Recovery		80,000	0%
Investment Earnings Available For Ops	164,202	500,000	33%
Land Permit Revenue		14,000	0%
Miscellaneous Revenue	3,774	50,000	8%
Miscellaneous Lease Revenue	950	-	0%
NWABSD Land Lease		4,263,906	0%
PILT Revenue		19,000,000	0%
Sweep Investment Income		-	0%
Tobacco & Marijuana Excise Tax		560,000	0%
TOTAL Revenue	**168,926**	**25,943,930**	**1%**

Expenditures (alphabetical order)	**Actual**	**Budget**	**% Spent**
Administration & Finance	425,606	1,307,185	33%
Assembly	109,676	1,398,476	8%
Community & Economic Dev. Commission	-	25,669	0%
Community & Economic Development	170,622	1,070,796	16%
Local Education Contribution	1,119,688	6,718,129	17%
Mayor's Office	165,425	1,336,857	12%
Planning & Community	29,808	539,915	6%
Planning Commission	-	36,803	0%
Public Safety Dept	59,451	424,065	14%
Public Safety Commission	-	25,592	0%
Public Services	319,138	2,349,701	14%
Transfer out - Bond Debt Service	-	1,071,625	0%
Transfer out - Investment Contribution	-	5,700,000	0%
Transfer out - Grants	-	87,000	0%
Water and Sewer Subsidy	405,516	2,123,435	19%
TOTAL Expenditures	**2,804,930**	**24,215,248**	**12%**
Revenues less Expenditures	**(2,636,004)**		

Northwest Arctic Borough

General Fund Year-to-date Expenditures

August 31, 2026



Northwest Arctic Borough

Special Projects

August 31, 2026

Energy Department IPP Shungnak & Kobuk	Cumulative Since Inception
Revenues	$ -
Operational Expenditures	$ 109
Administrative Fees	$ -
Net Revenue Over Expenditures	**$ 257,410**
Cash as of August 31, 2026	**$ 257,410**

Energy Department IPP Noatak	Cumulative Since Inception
Revenues	$ -
Operational Expenditures	$ 566
Administrative Fees	$ -
Net Revenue Over Expenditures	**$ 109,897**
Cash as of August 31, 2026	**$ 109,897**

Shelter Cabin / Warm Storage	Month Total	Budget
Grant Amount		$ 1,500,000
Salaries	$ -	
Project Funds	$ -	
Transportation	$ -	
Consultants	$ -	
Remaining Funds		**$ 906,570**

Sulianich Art Center	Month Totals	Operational Expenses (General Fund)
Revenues	$ 25,330	Payroll
Art Purchases	$ 22,173	$ 6,300
Supplies & Utilities	$ 899	
Net Revenue Over Expenditures	**$ 2,257**	**$ 16,998**
		FY27 net
Cash as of August 31, 2026	**$ 1,524,325**	

FUND 19-06 LATCF : Projects	Budget	EXPENSED	REMAINING
Grant Amount	$4,536,000		
Equipment Purchases (FY23)	$995,212	$995,212	
Selawik & Noorvik School Fire Systems	$860,000	$860,000	
NAB MAIN BLDG RENO	$252,797	$140,874	$111,923
NAB W/S pipe replacement	$100,171	$65,817	$34,354
Noatak Building Renovations	$800,000	$533,108	$266,892
NAB Main Building Window Replacement	$66,115	$86,100	($19,986)
Equipment Purchases	$100,000	$98,474	$1,526
DISASTER BLDG	$150,000	$65,510	$84,490
KIVALINA CLEAN UP	$59,600	$-	$59,600
NAB TENT	$100,000	$-	$100,000
PROPERTY / FLAG	$40,000	$12,000	$28,000
	$3,523,895		$1,012,105

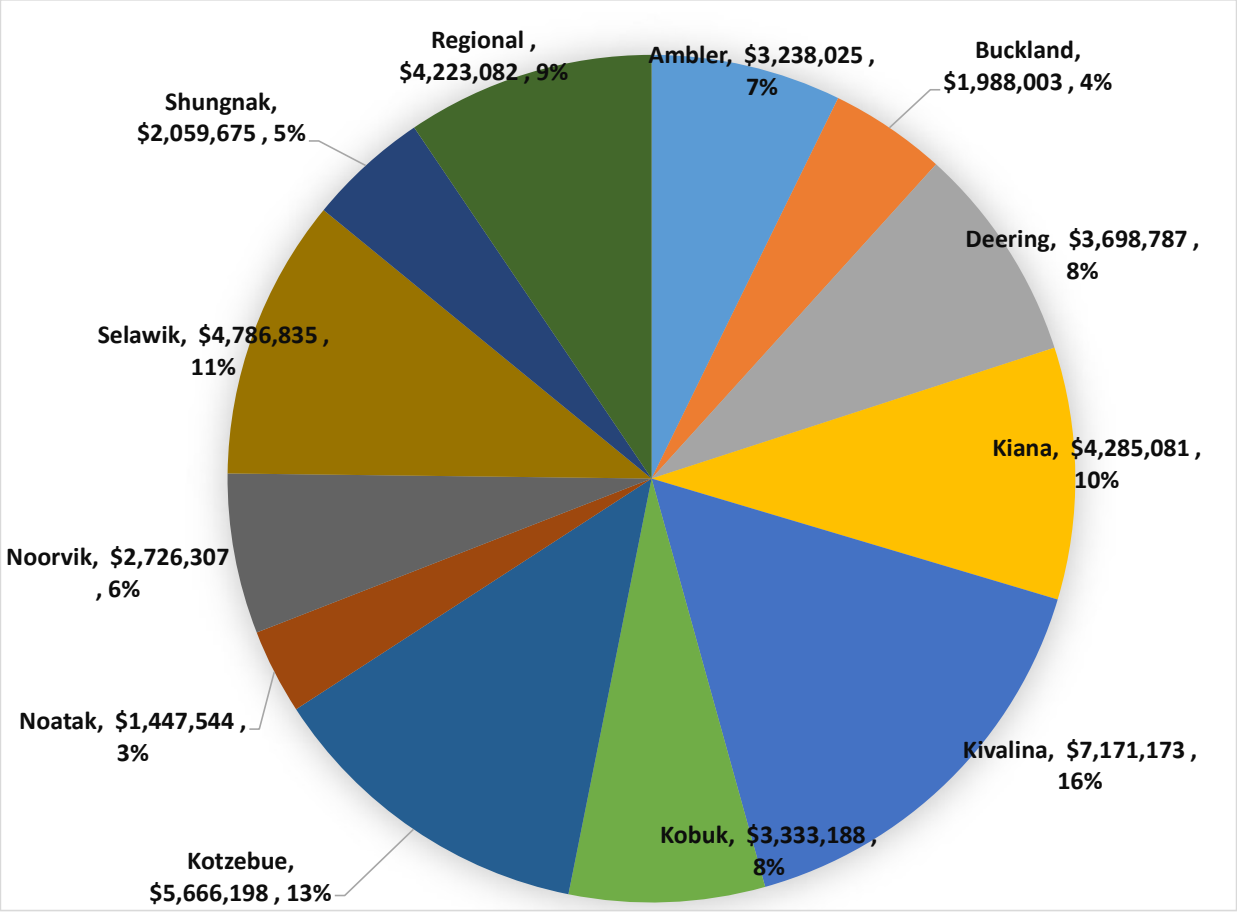
Village Improvement Fund Project Review (Multi-Year Summary)
9/1/26

Cumulative Available (prior years)	$	12,002,194
FY27 MOC PAYMENT	$	4,000,000
FY27 operations	$	532,807
Updated Available	**$**	**15,469,387**

Location	Approved Project Total/Approved Project Total	Approved Project Total	Total Payments on Projects	Outstanding Project Funds	Number of Approved Projects
Ambler	7%	$ 3,238,025	$ 3,171,501	$ 87	12
Buckland	4%	$ 1,988,003	$ 974,003	$ 1,014,000	5
Deering	8%	$ 3,698,787	$ 2,592,351	$ 1,106,436	8 *
Kiana	10%	$ 4,285,081	$ 4,276,660	$ 8,422	5
Kivalina	16%	$ 7,171,173	$ 6,532,981	$ 294,950	6
Kobuk	7%	$ 3,333,188	$ 3,252,814	$ 80,374	7
Kotzebue	13%	$ 5,666,198	$ 3,855,629	$ 1,810,569	10 **
Noatak	3%	$ 1,447,544	$ 1,447,545	$ (1)	9
Noorvik	6%	$ 2,726,307	$ 2,318,837	$ 407,469	7
Selawik	11%	$ 4,786,835	$ 3,489,691	$ 946,314	11 *
Shungnak	5%	$ 2,059,675	$ 2,062,174	$ -	6
Regional	9%	$ 4,223,082	$ 3,973,082	$ 250,000	6
Total	**100%**	**$ 44,623,898**	**$ 37,947,268**	**$ 5,918,620**	**63**

** indicates a Tier 1*

Remaining $ 9,550,766



See A-2 for important notes.

See pages B-1 through B-12 for detail of projects and project payments by location.

Northwest Arctic Borough

Grants Summary

July 31, 2026

Grant Name	Completion Date	Account Code	Original Budget
Federal Grants			
AW Solar, Battery, & Heat Pumps (1)	March 31, 2029	07-00	40,440,052
OCED			
Ambler OIE 196	May 1, 2029	05-13	3,435,988
Rural Energy Pilot Program	December 31, 2026	05-08	1,998,820
"Selawik Solar Battery"	(grant extended)		
Local Assistance & Tribal Consistency	December 31, 2027	19-06	4,536,000
US DOE - EECBG Program	December 31, 2026		75,270
TCC - Climate grant	December 31, 2027	05-02	143,809
DOJ - COPS (Maniilaq Pass Thru)	December 31, 2027	45-03	575,797
Total Federal			**51,205,736**
State Grants			
AEA Selawik Solar PV	December 31, 2026	05-11	1,134,500
AML AMBASSADOR PROGRAM	June 30, 2026	05-05	18,750
Noorvik Warm Storage	June 30, 2029	32-11	900,000
Public Safety & Facilities	June 30, 2027	32-09	1,500,000
"Shelter Cabins & Pub Safety Bldg"			
VPSO FY26	June 30, 2026	45-00	2,378,826
" VPSO administrative grant"			
VPSO FY27	June 30, 2027	45-00	3,904,175
" VPSO administrative grant"			
Total State			**9,836,251**
Total ** **(Includes grants not yet awarded)**			**61,041,987**

Grants Administered by but not Awarded to NWAB			
Ambler Bulk Fuel Farm	August 31, 2031	06-01	650,000
Ambler Search & Rescue	August 31, 2031	06-03	1,500,000
Ambler AEA Bulk Fuel Farm	December 31, 2025	06-02	650,000

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	REVENUE					
01-00-4000-00	PILT REVENUE	.00	.00	19,000,000.00	19,000,000.00	.0
01-00-4010-00	FEDERAL PILT REVENUE	.00	.00	1,100,062.00	1,100,062.00	.0
01-00-4020-00	NWABSD LAND LEASE	.00	.00	4,263,906.00	4,263,906.00	.0
01-00-4050-00	TOBACCO EXCISE TAX REVENUE	.00	.00	500,000.00	500,000.00	.0
01-00-4075-00	MARIJUANA EXCISE TAX REVENUE	.00	.00	60,000.00	60,000.00	.0
01-00-4098-00	MISC LEASE REVENUE	.00	950.00	.00	(950.00)	.0
01-00-4099-00	MISCELLANEOUS REVENUE	.00	3,774.13	50,000.00	46,225.87	7.6
01-00-4220-00	SOA COMMUNITY ASSIST PROGRAM	.00	.00	345,962.00	345,962.00	.0
01-00-4400-00	INDIRECT COST RECO PROGRAM	.00	.00	80,000.00	80,000.00	.0
01-00-4401-00	ADMINISTRATIVE FEE INC	.00	.00	30,000.00	30,000.00	.0
01-00-4550-00	INVESTMENT INC. AVAIL. FOR OPS	82,485.49	164,202.36	500,000.00	335,797.64	32.8
01-00-4600-00	LAND PERMIT REVE PROGRAM	.00	.00	14,000.00	14,000.00	.0
	TOTAL REVENUE	82,485.49	168,926.49	25,943,930.00	25,775,003.51	.7
	TOTAL FUND REVENUE	82,485.49	168,926.49	25,943,930.00	25,775,003.51	.7

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	TRANSFERS OUT					
01-00-6390-00	BANK FEES	.00	592.55	.00	(592.55)	.0
01-00-9002-00	TRANS OUT-INVEST/SUSTAIN	.00	.00	5,700,000.00	5,700,000.00	.0
01-00-9003-00	TRANS OUT-BOND DEBT	.00	.00	1,071,625.00	1,071,625.00	.0
01-00-9004-00	TRANSFER OUT - LOCAL ED	.00	.00	6,718,129.00	6,718,129.00	.0
	TOTAL TRANSFERS OUT	.00	592.55	13,489,754.00	13,489,161.45	.0
	ASSEMBLY					
01-01-6000-00	SALARIES	14,975.97	29,676.31	306,601.00	276,924.69	9.7
01-01-6010-00	WAGES, TEMPORARY	.00	.00	28,398.00	28,398.00	.0
01-01-6110-00	FICA	1,640.06	2,798.01	.00	(2,798.01)	.0
01-01-6111-00	SOA ESC	27.68	83.45	.00	(83.45)	.0
01-01-6115-00	MEDICAL	4,636.08	9,272.16	.00	(9,272.16)	.0
01-01-6120-00	WORKER'S COMP	60.06	90.48	.00	(90.48)	.0
01-01-6125-00	PERS	3,448.71	6,880.78	.00	(6,880.78)	.0
01-01-6210-00	AIR TRANSPORTATION	3,554.40	3,620.40	60,000.00	56,379.60	6.0
01-01-6220-00	GROUND TRANSPORTATION	458.51	458.51	10,000.00	9,541.49	4.6
01-01-6230-00	LODGING	1,116.00	1,116.00	60,000.00	58,884.00	1.9
01-01-6240-00	MEETING FEES	18,600.00	30,950.00	208,515.00	177,565.00	14.8
01-01-6250-00	PER DIEM	6,804.00	7,596.00	40,000.00	32,404.00	19.0
01-01-6320-00	PRINTING & PUBLICATIONS	.00	.00	5,000.00	5,000.00	.0
01-01-6370-00	DUES & SUBSCRIPTIONS	2,262.88	2,462.88	35,000.00	32,537.12	7.0
01-01-6399-00	MISCELLANEOUS	1,849.65	1,884.65	20,000.00	18,115.35	9.4
01-01-6820-00	ASSEMBLY RETREAT	.00	.00	30,000.00	30,000.00	.0
01-01-6830-00	ARCTIC ISSUES	.00	.00	25,000.00	25,000.00	.0
01-01-7000-00	REVENUE SHARING GRANTS	12,225.75	12,225.75	345,962.00	333,736.25	3.5
01-01-7050-00	CHARITABLE DONATIONS	.00	.00	200,000.00	200,000.00	.0
01-01-7200-00	ELECTION EXPENSE	370.87	560.87	24,000.00	23,439.13	2.3
	TOTAL ASSEMBLY	72,030.62	109,676.25	1,398,476.00	1,288,799.75	7.8

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	MAYOR'S OFFICE					
01-02-6000-00	SALARIES	30,847.91	59,279.94	528,857.00	469,577.06	11.2
01-02-6110-00	FICA	701.11	2,320.12	.00	(2,320.12)	.0
01-02-6111-00	SOA ESC	118.93	480.01	.00	(480.01)	.0
01-02-6115-00	MEDICAL	4,636.08	9,447.11	.00	(9,447.11)	.0
01-02-6125-00	PERS	6,048.73	11,699.11	.00	(11,699.11)	.0
01-02-6210-00	AIR TRANSPORTATION	660.20	660.20	28,000.00	27,339.80	2.4
01-02-6220-00	GROUND TRANSPORTATION	324.45	545.52	9,000.00	8,454.48	6.1
01-02-6230-00	LODGING	.00	.00	20,000.00	20,000.00	.0
01-02-6250-00	PER DIEM	1,089.00	1,485.00	13,000.00	11,515.00	11.4
01-02-6300-00	SUPPLIES	1,735.41	1,735.41	22,000.00	20,264.59	7.9
01-02-6370-00	DUES & SUBSCRIPTIONS	293.47	8,174.82	8,000.00	(174.82)	102.2
01-02-6380-00	TRAINING	.00	.00	3,000.00	3,000.00	.0
01-02-6399-00	MISCELLANEOUS	616.34	616.34	20,000.00	19,383.66	3.1
01-02-6400-00	CONSULTANTS	.00	16,451.07	140,000.00	123,548.93	11.8
01-02-6450-00	LEGAL	19,802.22	19,802.22	235,000.00	215,197.78	8.4
01-02-6825-00	NW LEADERSHIP TEAM	.00	.00	10,000.00	10,000.00	.0
01-02-7050-00	CHARITABLE DONATIONS	9,383.65	18,608.65	100,000.00	81,391.35	18.6
01-02-7600-00	EMERGENCY DISASTER RELIEF	.00	.00	200,000.00	200,000.00	.0
01-02-7600-01	ABL EMERGENCY DISASTER RELIEF	633.84	739.48	.00	(739.48)	.0
01-02-7600-02	BKL EMERGENCY DISTASTER RELIEF	46.00	46.00	.00	(46.00)	.0
01-02-7600-06	OBU EMERGENCY DISTASTER RELIEF	33.00	33.00	.00	(33.00)	.0
01-02-7600-10	WLK EMERGENCY DISTASTER RELIEF	.00	13,195.00	.00	(13,195.00)	.0
01-02-7600-11	SHG EMERGENCY DISTASTER RELIEF	.00	105.64	.00	(105.64)	.0
	TOTAL MAYOR'S OFFICE	76,970.34	165,424.64	1,336,857.00	1,171,432.36	12.4

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	ADMINISTRATION & FINANCE					
01-03-6000-00	SALARIES	26,234.48	52,151.72	503,185.00	451,033.28	10.4
01-03-6110-00	FICA	377.80	751.00	.00	(751.00)	.0
01-03-6111-00	SOA ESC	127.45	249.41	.00	(249.41)	.0
01-03-6115-00	MEDICAL	6,954.12	13,908.24	.00	(13,908.24)	.0
01-03-6125-00	PERS	5,771.60	11,473.40	.00	(11,473.40)	.0
01-03-6210-00	AIR TRANSPORTATION	.00	.00	5,000.00	5,000.00	.0
01-03-6220-00	GROUND TRANSPORTATION	.00	.00	1,000.00	1,000.00	.0
01-03-6230-00	LODGING	.00	.00	5,000.00	5,000.00	.0
01-03-6250-00	PER DIEM	99.00	99.00	5,000.00	4,901.00	2.0
01-03-6300-00	SUPPLIES	254.98	254.98	20,000.00	19,745.02	1.3
01-03-6310-00	POSTAGE AND FREIGHT	988.56	3,866.68	10,000.00	6,133.32	38.7
01-03-6320-00	PRINTING & PUBLICATIONS	1,241.82	2,522.95	15,000.00	12,477.05	16.8
01-03-6330-00	UTILITIES	3,987.87	3,987.87	125,000.00	121,012.13	3.2
01-03-6340-00	TELEPHONE	1,787.76	2,743.16	44,000.00	41,256.84	6.2
01-03-6365-00	GAS & OIL EXPENSE	2,232.70	2,232.70	28,000.00	25,767.30	8.0
01-03-6370-00	DUES & SUBSCRIPTIONS	779.00	779.00	5,000.00	4,221.00	15.6
01-03-6380-00	TRAINING	.00	.00	5,000.00	5,000.00	.0
01-03-6390-00	JANITORIAL EXPENDITURE	3,000.00	3,000.00	36,000.00	33,000.00	8.3
01-03-6460-00	CONSULTANTS, ACCOUNTING/AUDIT	24,568.61	30,418.61	200,000.00	169,581.39	15.2
01-03-6600-00	INSURANCE	.00	296,574.60	300,000.00	3,425.40	98.9
	TOTAL ADMINISTRATION & FINANCE	78,405.75	425,013.32	1,307,185.00	882,171.68	32.5
	PLANNING & COMMUNITY					
01-05-6000-00	SALARIES	10,850.45	19,862.13	329,615.00	309,752.87	6.0
01-05-6110-00	FICA	256.78	467.54	.00	(467.54)	.0
01-05-6111-00	SOA ESC	28.11	50.82	.00	(50.82)	.0
01-05-6115-00	MEDICAL	2,318.04	4,636.08	.00	(4,636.08)	.0
01-05-6120-00	WORKER'S COMP	34.50	63.38	.00	(63.38)	.0
01-05-6125-00	PERS	2,029.60	3,723.42	.00	(3,723.42)	.0
01-05-6210-00	AIR TRANSPORTATION	.00	.00	13,200.00	13,200.00	.0
01-05-6220-00	GROUND TRANSPORTATION	.00	.00	3,600.00	3,600.00	.0
01-05-6230-00	LODGING	.00	.00	10,000.00	10,000.00	.0
01-05-6250-00	PER DIEM	.00	.00	10,500.00	10,500.00	.0
01-05-6300-00	SUPPLIES	1,004.27	1,004.27	10,000.00	8,995.73	10.0
01-05-6370-00	DUES & SUBSCRIPTIONS	.00	.00	3,000.00	3,000.00	.0
01-05-6400-00	CONSULTANTS	.00	.00	100,000.00	100,000.00	.0
01-05-7120-00	PLANNING GRANTS	.00	.00	60,000.00	60,000.00	.0
	TOTAL PLANNING & COMMUNITY	16,521.75	29,807.64	539,915.00	510,107.36	5.5

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	PLANNING COMMISSION					
01-06-6110-00	FICA	.00	.00	1,163.00	1,163.00	.0
01-06-6210-00	AIR TRANSPORTATION	.00	.00	10,200.00	10,200.00	.0
01-06-6230-00	LODGING	.00	.00	9,000.00	9,000.00	.0
01-06-6240-00	MEETING FEES	.00	.00	8,500.00	8,500.00	.0
01-06-6250-00	PER DIEM	.00	.00	5,940.00	5,940.00	.0
01-06-6300-00	SUPPLIES	.00	.00	2,000.00	2,000.00	.0
	TOTAL PLANNING COMMISSION	.00	.00	36,803.00	36,803.00	.0
	COMMUNITY & ECONOMIC DEVELOPME					
01-07-6000-00	SALARIES	18,370.11	41,491.01	661,796.00	620,304.99	6.3
01-07-6110-00	FICA	874.47	2,088.72	.00	(2,088.72)	.0
01-07-6111-00	SOA ESC	12.98	80.45	.00	(80.45)	.0
01-07-6115-00	MEDICAL	4,867.88	10,813.13	.00	(10,813.13)	.0
01-07-6120-00	WORKER'S COMP	.00	39.66	.00	(39.66)	.0
01-07-6125-00	PERS	1,879.02	3,841.63	.00	(3,841.63)	.0
01-07-6210-00	AIR TRANSPORTATION	3,047.00	3,146.15	27,000.00	23,853.85	11.7
01-07-6220-00	GROUND TRANSPORTATION	.00	.00	6,000.00	6,000.00	.0
01-07-6230-00	LODGING	2,113.00	2,113.00	20,000.00	17,887.00	10.6
01-07-6240-00	STEERING COMMITTEE	.00	.00	5,000.00	5,000.00	.0
01-07-6250-00	PER DIEM	396.00	1,485.00	8,000.00	6,515.00	18.6
01-07-6300-00	SUPPLIES	1,713.43	1,713.43	3,000.00	1,286.57	57.1
01-07-6320-00	PRINTING & PUBLICATIONS	.00	.00	2,000.00	2,000.00	.0
01-07-6370-00	DUES & SUBSCRIPTIONS	525.15	525.15	3,000.00	2,474.85	17.5
01-07-6380-00	TRAINING	.00	.00	2,000.00	2,000.00	.0
01-07-6400-00	CONSULTANTS	.00	.00	50,000.00	50,000.00	.0
01-07-7100-00	SCHOLARSHIPS	83,500.00	86,000.00	250,000.00	164,000.00	34.4
01-07-7110-00	SMALL BUSINESS GRANTS	908.88	908.88	8,000.00	7,091.12	11.4
01-07-7130-00	FISHING GRANTS	5,812.04	10,796.10	5,000.00	(5,796.10)	215.9
01-07-7135-00	CEDA PROJECTS	.00	5,580.00	20,000.00	14,420.00	27.9
	TOTAL COMMUNITY & ECONOMIC DEVELOP	124,019.96	170,622.31	1,070,796.00	900,173.69	15.9
	COMMUNITY & ECONOMIC DEV COMMI					
01-08-6110-00	FICA	.00	.00	669.00	669.00	.0
01-08-6210-00	AIR TRANSPORTATION	.00	.00	6,500.00	6,500.00	.0
01-08-6230-00	LODGING	.00	.00	6,000.00	6,000.00	.0
01-08-6240-00	MEETING FEES	.00	.00	4,000.00	4,000.00	.0
01-08-6250-00	PER DIEM	.00	.00	2,500.00	2,500.00	.0
01-08-6300-00	SUPPLIES	.00	.00	6,000.00	6,000.00	.0
	TOTAL COMMUNITY & ECONOMIC DEV COM	.00	.00	25,669.00	25,669.00	.0

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	PUBLIC SERVICES					
01-09-6000-00	SALARIES	66,937.55	130,018.17	1,336,316.00	1,206,297.83	9.7
01-09-6010-00	WAGES - TEMP TRAIL STAKERS	.00	.00	118,035.00	118,035.00	.0
01-09-6110-00	FICA	1,657.15	3,986.71	.00	(3,986.71)	.0
01-09-6111-00	SOA ESC	382.95	703.00	.00	(703.00)	.0
01-09-6115-00	MEDICAL	16,226.28	32,452.56	.00	(32,452.56)	.0
01-09-6120-00	WORKER'S COMP	103.50	219.69	.00	(219.69)	.0
01-09-6125-00	PERS	10,600.77	20,171.87	.00	(20,171.87)	.0
01-09-6210-00	AIR TRANSPORTATION	5,158.33	6,800.59	25,000.00	18,199.41	27.2
01-09-6220-00	GROUND TRANSPORTATION	.00	.00	5,000.00	5,000.00	.0
01-09-6230-00	LODGING	.00	.00	10,000.00	10,000.00	.0
01-09-6250-00	PER DIEM	1,584.00	3,861.00	10,350.00	6,489.00	37.3
01-09-6300-00	SUPPLIES	(22.64)	(22.64)	4,000.00	4,022.64	(.6)
01-09-6310-00	POSTAGE AND FREIGHT	1,141.78	4,342.98	70,000.00	65,657.02	6.2
01-09-6335-00	NOATAK AIRPORT LEASE - YEARLY	.00	.00	11,000.00	11,000.00	.0
01-09-6345-00	INFORMATION TECHNOLOGY	49,582.69	64,910.76	230,000.00	165,089.24	28.2
01-09-6360-00	PUBLIC SERVICES PROJECTS	9,584.75	14,459.36	150,000.00	135,540.64	9.6
01-09-6370-00	DUES & SUBSCRIPTIONS	54.99	54.99	3,000.00	2,945.01	1.8
01-09-6399-00	MISCELLANEOUS	1,049.95	1,820.15	13,000.00	11,179.85	14.0
01-09-7150-00	WINTER TRAILS	.00	.00	100,000.00	100,000.00	.0
01-09-7155-00	EMERGENCY MANAGEMENT	.00	.00	5,000.00	5,000.00	.0
01-09-8002-00	SEARCH & RESCUE SUPPLIES	17,607.06	17,640.06	65,000.00	47,359.94	27.1
01-09-8004-00	SEARCH & RESCUE STIPENDS	.00	.00	72,000.00	72,000.00	.0
01-09-8501-00	FIRE DEPT SUPPORT	17,671.17	17,718.91	50,000.00	32,281.09	35.4
01-09-8506-00	BATALLION CHIEF STIPENDS	.00	.00	72,000.00	72,000.00	.0
	TOTAL PUBLIC SERVICES	199,320.28	319,138.16	2,349,701.00	2,030,562.84	13.6
	PUBLIC SAFETY COMMISSION					
01-10-6110-00	FICA	.00	.00	842.00	842.00	.0
01-10-6210-00	AIR TRANSPORTATION	.00	.00	6,228.00	6,228.00	.0
01-10-6230-00	LODGING	.00	.00	3,668.00	3,668.00	.0
01-10-6240-00	MEETING FEES	.00	.00	8,800.00	8,800.00	.0
01-10-6250-00	PER DIEM	.00	.00	4,554.00	4,554.00	.0
01-10-6300-00	SUPPLIES	.00	.00	1,500.00	1,500.00	.0
	TOTAL PUBLIC SAFETY COMMISSION	.00	.00	25,592.00	25,592.00	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	PUBLIC SAFETY DEPARTMENT					
01-11-6000-00	SALARIES	21,399.80	32,211.59	243,565.00	211,353.41	13.2
01-11-6110-00	FICA	309.78	466.16	.00	(466.16)	.0
01-11-6115-00	MEDICAL	10,097.86	13,053.14	.00	(13,053.14)	.0
01-11-6120-00	WORKERS COMP	1.65	2.57	.00	(2.57)	.0
01-11-6125-00	PERS	4,707.97	7,619.35	.00	(7,619.35)	.0
01-11-6210-00	AIR TRANSPORTATION	3,959.48	3,959.48	10,000.00	6,040.52	39.6
01-11-6220-00	GROUND TRANSPORTATION	.00	.00	3,000.00	3,000.00	.0
01-11-6230-00	LODGING	.00	.00	7,500.00	7,500.00	.0
01-11-6250-00	PER DIEM	.00	.00	7,500.00	7,500.00	.0
01-11-6300-00	SUPPLIES	230.61	230.61	25,000.00	24,769.39	.9
01-11-6310-00	AIR FREIGHT	.00	1,422.44	10,000.00	8,577.56	14.2
01-11-6360-00	SAR/FIRE FACILITIES	.00	.00	5,000.00	5,000.00	.0
01-11-6370-00	DUES & SUBSCRIPTIONS	.00	.00	7,500.00	7,500.00	.0
01-11-6399-00	MISCELLANEOUS	.00	.00	5,000.00	5,000.00	.0
01-11-6400-00	CONSULTANTS	.00	.00	75,000.00	75,000.00	.0
01-11-7500-00	VPSO HOUSE UTILITIES	383.03	486.08	25,000.00	24,513.92	1.9
	TOTAL PUBLIC SAFETY DEPARTMENT	41,090.18	59,451.42	424,065.00	364,613.58	14.0
	WATER AND SEWER SUBSIDY					
01-12-6400-00	W&S COORDINATOR/TRAINING	.00	.00	336,732.00	336,732.00	.0
01-12-6400-01	AMBLER SUBSIDY	.00	.00	117,991.00	117,991.00	.0
01-12-6400-02	BUCKLAND SUBSIDY	31,881.81	31,881.81	134,696.00	102,814.19	23.7
01-12-6400-03	DEERING SUBSIDY	.00	.00	122,510.00	122,510.00	.0
01-12-6400-04	KIANA SUBSIDY	.00	.00	149,736.00	149,736.00	.0
01-12-6400-05	KIVALINA SUBSIDY	36,070.73	36,070.73	120,260.00	84,189.27	30.0
01-12-6400-06	KOBUK SUBSIDY	.00	.00	98,493.00	98,493.00	.0
01-12-6400-07	KOTZEBUE SUBSIDY	337,563.00	337,563.00	337,563.00	.00	100.0
01-12-6400-09	NOORVIK SUBSIDY	.00	.00	340,946.00	340,946.00	.0
01-12-6400-10	SELAWIK SUBSIDY	.00	.00	231,263.00	231,263.00	.0
01-12-6400-11	SHUNGNAK SUBSIDY	.00	.00	133,245.00	133,245.00	.0
	TOTAL WATER AND SEWER SUBSIDY	405,515.54	405,515.54	2,123,435.00	1,717,919.46	19.1
	TOTAL FUND EXPENDITURES	1,013,874.42	1,685,241.83	24,128,248.00	22,443,006.17	7.0
	NET REVENUE OVER EXPENDITURES	(931,388.93)	(1,516,315.34)	1,815,682.00	3,331,997.34	(83.5)

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

VILLAGE IMPROVEMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	VIF REVENUE					
02-00-4100-00	REVENUE	.00	.00	4,000,000.00	4,000,000.00	.0
02-00-4500-00	INVESTMENT INCOME	57,870.12	917,931.52	.00	(917,931.52)	.0
02-00-4501-00	UNREALIZED GAIN/(LOSS)	479,321.79	(521,110.25)	.00	521,110.25	.0
02-00-4550-00	INVESTMENT INC. AVAIL. FOR OPS	20,948.09	41,845.63	300,000.00	258,154.37	14.0
	TOTAL VIF REVENUE	558,140.00	438,666.90	4,300,000.00	3,861,333.10	10.2
	TOTAL FUND REVENUE	558,140.00	438,666.90	4,300,000.00	3,861,333.10	10.2

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

VILLAGE IMPROVEMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	ADMIN EXPENDITURES					
02-00-6000-00	SALARIES	18,808.67	29,000.14	214,079.00	185,078.86	13.6
02-00-6110-00	FICA	434.65	582.42	3,104.00	2,521.58	18.8
02-00-6111-00	SOA ESC	17.30	17.30	3,004.00	2,986.70	.6
02-00-6115-00	MEDICAL	2,318.04	4,636.08	55,633.00	50,996.92	8.3
02-00-6120-00	WORKERS COMP	11.55	11.55	.00	(11.55)	.0
02-00-6125-00	PERS	1,081.41	3,323.53	47,097.00	43,773.47	7.1
02-00-6210-00	TRANSPORTATION	2,869.00	4,138.00	25,500.00	21,362.00	16.2
02-00-6220-00	GROUND TRANSPORTATION	.00	.00	3,000.00	3,000.00	.0
02-00-6230-00	LODGING	1,953.00	1,953.00	20,000.00	18,047.00	9.8
02-00-6240-00	MEETING FEES	4,750.00	4,750.00	39,000.00	34,250.00	12.2
02-00-6245-00	COMMUNITY MEETINGS	900.00	1,200.00	12,000.00	10,800.00	10.0
02-00-6250-00	PER DIEM	1,188.00	1,386.00	12,890.00	11,504.00	10.8
02-00-6300-00	SUPPLIES	2,549.92	2,549.92	25,000.00	22,450.08	10.2
02-00-6320-00	PRINTING & PUBLICATIONS	.00	.00	7,500.00	7,500.00	.0
02-00-6400-00	CONSULTANTS	.00	.00	30,000.00	30,000.00	.0
02-00-6450-00	LEGAL	58.00	58.00	25,000.00	24,942.00	.2
02-00-6460-00	CONSULTANTS, ACCOUNTING/AUDIT	.00	.00	10,000.00	10,000.00	.0
	TOTAL ADMIN EXPENDITURES	36,939.54	53,605.94	532,807.00	479,201.06	10.1
	BUCKLAND VIF					
02-02-6400-06	BKCWASHETERIA	.00	.00	250,000.00	250,000.00	.0
02-02-6400-07	BKC GENERATOR	.00	.00	80,000.00	80,000.00	.0
	TOTAL BUCKLAND VIF	.00	.00	330,000.00	330,000.00	.0
	KOTZEBUE VIF					
02-07-6400-20	POLICE VEHICLE	.00	131,195.00	131,195.00	.00	100.0
02-07-6400-21	W/S JETTER	.00	376,112.92	376,112.92	.00	100.0
02-07-6400-22	FIRE DEPT REMODEL	.00	180,000.00	180,000.00	.00	100.0
02-07-6400-23	NVOK BUS/ELEV GRANT	634,322.00	634,322.00	634,322.00	.00	100.0
	TOTAL KOTZEBUE VIF	634,322.00	1,321,629.92	1,321,629.92	.00	100.0
	NOORVIK VIF					
02-09-6400-07	LANDFILL CLEAN UP PGM	352,950.00	352,950.00	352,950.52	.52	100.0
	TOTAL NOORVIK VIF	352,950.00	352,950.00	352,950.52	.52	100.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

VILLAGE IMPROVEMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SELAWIK VIF					
02-10-6400-12	WELLNESS COALITION	573,478.00	573,478.00	573,478.00	.00	100.0
	TOTAL SELAWIK VIF	573,478.00	573,478.00	573,478.00	.00	100.0
	REGIONAL VIF					
02-12-6400-08	KOTZ RADIO TRANSM	150,000.00	150,000.00	150,000.00	.00	100.0
	TOTAL REGIONAL VIF	150,000.00	150,000.00	150,000.00	.00	100.0
	TOTAL FUND EXPENDITURES	1,747,689.54	2,451,663.86	3,260,865.44	809,201.58	75.2
	NET REVENUE OVER EXPENDITURES	(1,189,549.54)	(2,012,996.96)	1,039,134.56	3,052,131.52	(193.7)

ENERGY DEPARTMENT GRANTS

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	TCC CPRG MOA					
05-02-6000-00	SALARIES	525.07	1,064.74	.00	(1,064.74)	.0
05-02-6110-00	FICA	8.76	16.96	.00	(16.96)	.0
05-02-6125-00	PERS	133.85	258.77	.00	(258.77)	.0
	TOTAL TCC CPRG MOA	667.68	1,340.47	.00	(1,340.47)	.0
	USDA REPP #RO141285-75594					
05-08-6000-00	SALARIES	6,214.76	14,093.95	.00	(14,093.95)	.0
05-08-6110-00	FICA	92.64	207.91	.00	(207.91)	.0
05-08-6115-00	MEDICAL	4,404.28	7,731.19	.00	(7,731.19)	.0
05-08-6120-00	WORKERS COMP	47.85	108.51	.00	(108.51)	.0
05-08-6125-00	PERS	1,407.27	3,158.23	.00	(3,158.23)	.0
05-08-6402-00	CONSULT - CONSTRUCTION	497,660.34	497,660.34	.00	(497,660.34)	.0
	TOTAL USDA REPP #RO141285-75594	509,827.14	522,960.13	.00	(522,960.13)	.0
	TOTAL FUND EXPENDITURES	510,494.82	524,300.60	.00	(524,300.60)	.0
	NET REVENUE OVER EXPENDITURES	(510,494.82)	(524,300.60)	.00	524,300.60	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

GRANT MANAGEMENT

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	AMBLER BUILDING - HUD					
06-03-6400-00	CONSULTANTS	.00	9,647.00	.00	(9,647.00)	.0
	TOTAL AMBLER BUILDING - HUD	.00	9,647.00	.00	(9,647.00)	.0
	TOTAL FUND EXPENDITURES	.00	9,647.00	.00	(9,647.00)	.0
	NET REVENUE OVER EXPENDITURES	.00	(9,647.00)	.00	9,647.00	.0

OCED GRANT

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	ADMINISTRATIVE					
07-00-6000-00	SALARIES	131.27	1,017.33	.00	(1,017.33)	.0
07-00-6110-00	FICA	2.44	16.21	.00	(16.21)	.0
07-00-6125-00	PERS	37.67	246.53	.00	(246.53)	.0
07-00-6460-00	ACCOUNTING	5,118.75	8,238.75	.00	(8,238.75)	.0
	TOTAL ADMINISTRATIVE	5,290.13	9,518.82	.00	(9,518.82)	.0
	OCED AMBLER					
07-01-6000-00	SALARIES	2,789.45	6,300.87	.00	(6,300.87)	.0
07-01-6110-00	FICA	47.81	99.85	.00	(99.85)	.0
07-01-6125-00	PERS	733.19	1,529.95	.00	(1,529.95)	.0
	TOTAL OCED AMBLER	3,570.45	7,930.67	.00	(7,930.67)	.0
	OCED KIANA					
07-04-6000-00	SALARIES	984.51	1,487.70	.00	(1,487.70)	.0
07-04-6110-00	FICA	17.29	24.55	.00	(24.55)	.0
07-04-6125-00	PERS	265.69	377.42	.00	(377.42)	.0
	TOTAL OCED KIANA	1,267.49	1,889.67	.00	(1,889.67)	.0
	OCED NOORVIK					
07-09-6000-00	SALARIES	656.34	1,268.92	.00	(1,268.92)	.0
07-09-6110-00	FICA	11.19	20.01	.00	(20.01)	.0
07-09-6125-00	PERS	171.52	307.32	.00	(307.32)	.0
	TOTAL OCED NOORVIK	839.05	1,596.25	.00	(1,596.25)	.0
	OCED SELAWIK					
07-10-6000-00	SALARIES	1,476.77	3,241.59	.00	(3,241.59)	.0
07-10-6110-00	FICA	24.93	50.75	.00	(50.75)	.0
07-10-6125-00	PERS	381.73	778.22	.00	(778.22)	.0
07-10-6351-00	INSTALLATION	455,903.39	455,903.39	.00	(455,903.39)	.0
	TOTAL OCED SELAWIK	457,786.82	459,973.95	.00	(459,973.95)	.0
	OCED HEAT PUMPS					
07-11-6000-00	SALARIES	1,476.76	1,804.93	.00	(1,804.93)	.0
	TOTAL OCED HEAT PUMPS	1,476.76	1,804.93	.00	(1,804.93)	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

OCED GRANT

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	AMBLER 118					
07-18-6000-00	SALARIES	328.17	328.17	.00	(328.17)	.0
07-18-6110-00	FICA	5.10	5.10	.00	(5.10)	.0
07-18-6120-00	WORKERS COMP	2.53	2.53	.00	(2.53)	.0
07-18-6125-00	PERS	77.36	77.36	.00	(77.36)	.0
	TOTAL AMBLER 118	413.16	413.16	.00	(413.16)	.0
	TOTAL FUND EXPENDITURES	470,643.86	483,127.45	.00	(483,127.45)	.0
	NET REVENUE OVER EXPENDITURES	(470,643.86)	(483,127.45)	.00	483,127.45	.0

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

NAB SUSTAINABILITY FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUE					
10-00-4500-00	INVESTMENT INCOME	127,976.90	1,747,270.15	.00	(1,747,270.15)	.0
10-00-4501-00	UNREALIZED INVESTMENT INCOME	1,058,256.55	(870,420.65)	.00	870,420.65	.0
	TOTAL REVENUE	1,186,233.45	876,849.50	.00	(876,849.50)	.0
	TOTAL FUND REVENUE	1,186,233.45	876,849.50	.00	(876,849.50)	.0
	NET REVENUE OVER EXPENDITURES	1,186,233.45	876,849.50	.00	(876,849.50)	.0

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

NAB CONTINGENCY FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUE					
11-00-4500-00	INVESTMENT INCOME	19,220.31	211,361.25	.00	(211,361.25)	.0
11-00-4501-00	UNREALIZED GAIN/(LOSS)	79,138.73	(157,756.58)	.00	157,756.58	.0
	TOTAL REVENUE	98,359.04	53,604.67	.00	(53,604.67)	.0
	TOTAL FUND REVENUE	98,359.04	53,604.67	.00	(53,604.67)	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

NAB CONTINGENCY FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	INVESTMENT BANK FEES					
11-00-6390-00	BANK FEES	36,219.40	73,931.99	.00	(73,931.99)	.0
	TOTAL INVESTMENT BANK FEES	36,219.40	73,931.99	.00	(73,931.99)	.0
	TOTAL FUND EXPENDITURES	36,219.40	73,931.99	.00	(73,931.99)	.0
	NET REVENUE OVER EXPENDITURES	62,139.64	(20,327.32)	.00	20,327.32	.0

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

CARES ACT - COVID RESPONSE

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUE					
19-00-4550-00	INVESTMENT INC AVAIL FOR OPS	1.86	3.72	.00	(3.72)	.0
	TOTAL REVENUE	1.86	3.72	.00	(3.72)	.0
	TOTAL FUND REVENUE	1.86	3.72	.00	(3.72)	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

CARES ACT - COVID RESPONSE

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	LATCF EXPENDITURES					
19-06-6000-08	NOATAK BLDG SALARIES	.00	9,393.93	.00	(9,393.93)	.0
19-06-6000-09	NAB BLDG WINDOWS	254.93	1,429.13	.00	(1,429.13)	.0
19-06-6110-00	FICA	3.58	430.09	.00	(430.09)	.0
19-06-6111-00	SOA ESC	.00	76.55	.00	(76.55)	.0
19-06-6353-00	NAB MAIN BLDG RENO	39.98	10,516.05	.00	(10,516.05)	.0
19-06-6355-00	NOATAK VPSO ROOF - EQUIP	7,457.17	10,345.50	.00	(10,345.50)	.0
19-06-6355-01	NOATAK VPSO ROOF - TRAVEL	.00	4,319.26	.00	(4,319.26)	.0
19-06-6357-00	NAB EQUIPMENT	.00	1,724.47	.00	(1,724.47)	.0
19-06-6359-00	DISASTER BLDG	22,838.53	48,348.45	.00	(48,348.45)	.0
19-06-6361-00	NAB TENT PROJECT	784.67	784.67	.00	(784.67)	.0
	TOTAL LATCF EXPENDITURES	31,378.86	87,368.10	.00	(87,368.10)	.0
	TOTAL FUND EXPENDITURES	31,378.86	87,368.10	.00	(87,368.10)	.0
	NET REVENUE OVER EXPENDITURES	(31,377.00)	(87,364.38)	.00	87,364.38	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

PUBLIC SAFETY

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
30-03-7300-00	SEARCH & RESCUE EXPENSES	117.36	224.31	.00	(224.31)	.0
	TOTAL EXPENDITURES	117.36	224.31	.00	(224.31)	.0
	TOTAL FUND EXPENDITURES	117.36	224.31	.00	(224.31)	.0
	NET REVENUE OVER EXPENDITURES	(117.36)	(224.31)	.00	224.31	.0

NORTHWEST ARCTIC BOROUGH
REVENUES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

SULIANICH ARTS CENTER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUE					
40-00-4100-00	REVENUE	25,043.58	49,392.98	.00	(49,392.98)	.0
40-00-4500-00	INVESTMENT INCOME	285.99	573.76	.00	(573.76)	.0
	TOTAL REVENUE	25,329.57	49,966.74	.00	(49,966.74)	.0
	TOTAL FUND REVENUE	25,329.57	49,966.74	.00	(49,966.74)	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

SULIANICH ARTS CENTER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
40-00-6300-00	SUPPLIES	31.98	31.98	.00	(31.98)	.0
40-00-6330-00	UTILITIES	617.16	799.89	.00	(799.89)	.0
40-00-6390-00	BANK FEES	249.98	291.41	.00	(291.41)	.0
40-00-7800-00	ART PURCHASES	22,173.45	31,845.45	.00	(31,845.45)	.0
	TOTAL EXPENDITURES	23,072.57	32,968.73	.00	(32,968.73)	.0
	TOTAL FUND EXPENDITURES	23,072.57	32,968.73	.00	(32,968.73)	.0
	NET REVENUE OVER EXPENDITURES	2,257.00	16,998.01	.00	(16,998.01)	.0

VPSO

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	VPSO					
45-00-6000-00	SALARIES	149,609.57	306,730.69	2,364,045.00	2,057,314.31	13.0
45-00-6110-00	FICA	2,844.08	5,796.97	.00	(5,796.97)	.0
45-00-6115-00	MEDICAL	33,944.90	65,585.27	.00	(65,585.27)	.0
45-00-6120-00	WORKER'S COMP	137.29	211.11	.00	(211.11)	.0
45-00-6125-00	PERS	30,460.24	62,620.40	.00	(62,620.40)	.0
45-00-6210-00	TRAVEL	32,212.79	40,543.65	467,897.00	427,353.35	8.7
45-00-6300-00	SUPPLIES	19,983.11	41,765.86	298,400.00	256,634.14	14.0
45-00-6350-00	EQUIPMENT	30,114.27	30,114.27	125,006.00	94,891.73	24.1
45-00-6400-00	CONSULTANTS	.00	.00	118,320.00	118,320.00	.0
45-00-8000-00	INDIRECT	.00	.00	530,507.00	530,507.00	.0
	TOTAL VPSO	299,306.25	553,368.22	3,904,175.00	3,350,806.78	14.2
	COPS GRANT - MANIILAQ					
45-03-6350-00	EQUIPMENT	63,066.00	188,747.66	125,681.66	(63,066.00)	150.2
	TOTAL COPS GRANT - MANIILAQ	63,066.00	188,747.66	125,681.66	(63,066.00)	150.2
	TOTAL FUND EXPENDITURES	362,372.25	742,115.88	4,029,856.66	3,287,740.78	18.4
	NET REVENUE OVER EXPENDITURES	(362,372.25)	(742,115.88)	(4,029,856.66)	(3,287,740.78)	(18.4)

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

SHUNGNAK/OBU IPP FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
70-00-6330-00	UTILITIES	109.02	109.02	.00	(109.02)	.0
	TOTAL EXPENDITURES	109.02	109.02	.00	(109.02)	.0
	TOTAL FUND EXPENDITURES	109.02	109.02	.00	(109.02)	.0
	NET REVENUE OVER EXPENDITURES	(109.02)	(109.02)	.00	109.02	.0

NORTHWEST ARCTIC BOROUGH
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 2 MONTHS ENDING AUGUST 31, 2026

NOATAK IPP FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
71-00-6330-00	UTILITIES	566.42	566.42	.00	(566.42)	.0
	TOTAL EXPENDITURES	566.42	566.42	.00	(566.42)	.0
	TOTAL FUND EXPENDITURES	566.42	566.42	.00	(566.42)	.0
	NET REVENUE OVER EXPENDITURES	(566.42)	(566.42)	.00	566.42	.0

Date	Journal	Reference	Description	Debit Amount	Credit Amount	Balance
*			**07/31/2026 (07/26) Balance**	**.00**	**.00**	**9,225.00**
08/04/2026*	AP	1.0001	BROWN, CHARLES	75.00	.00	9,300.00
08/04/2026*	AP	4.0001	WILLOCK, ROY N	75.00	.00	9,375.00
08/04/2026*	AP	8.0001	NELSON, ALICE	75.00	.00	9,450.00
08/04/2026*	AP	9.0001	SHELDON, LORENA	75.00	.00	9,525.00
08/04/2026*	AP	29.0001	FERREIRA, HOWARD	75.00	.00	9,600.00
08/04/2026*	AP	30.0001	FOSTER, MELISSA	75.00	.00	9,675.00
08/04/2026*	AP	31.0001	HENRY, LUCY	75.00	.00	9,750.00
08/04/2026*	AP	58.0001	NATIVE VILLAGE OF SELAWIK	300.00	.00	10,050.00
08/04/2026*	AP	88.0001	NORTON, MARIAM	75.00	.00	10,125.00
08/06/2026*	AP	96.0001	HOWARTH, KATHLEEN	75.00	.00	10,200.00
08/06/2026*	AP	97.0001	BARGER, BLAINE	75.00	.00	10,275.00
08/06/2026*	AP	100.0001	BALLOT, ELEANOR	75.00	.00	10,350.00
08/06/2026*	AP	101.0001	BERRY, MARY	75.00	.00	10,425.00
08/06/2026*	AP	102.0001	HADLEY, LANI	300.00	.00	10,725.00
08/06/2026*	AP	103.0001	CLEVELAND, TUCK	75.00	.00	10,800.00
08/06/2026*	AP	104.0001	REICH, MAUREEN	75.00	.00	10,875.00
08/06/2026*	AP	105.0001	SHELDON, RADYN	75.00	.00	10,950.00
08/06/2026*	AP	145.0001	MULLUK, BILLIE	75.00	.00	11,025.00
08/11/2026*	AP	156.0001	HENSLEY, BEVERLY	75.00	.00	11,100.00
08/11/2026*	AP	157.0001	ONALIK SR, FRANK E	75.00	.00	11,175.00
08/11/2026*	AP	158.0001	GOODRO, ELSIE	75.00	.00	11,250.00

Amount type: Actual
Display: Reference detail

Date	Journal	Reference	Description	Debit Amount	Credit Amount	Balance
08/11/2026*	AP	159.0001	MADSEN, AURORA	75.00	.00	11,325.00
08/11/2026*	AP	160.0001	TAFT, MILDRED	75.00	.00	11,400.00
08/11/2026*	AP	161.0001	COFFIN, ARTHUR	75.00	.00	11,475.00
08/11/2026*	AP	163.0001	WESLEY, MARY	75.00	.00	11,550.00
08/11/2026*	AP	165.0001	SHY, JOSEPHINE	75.00	.00	11,625.00
08/11/2026*	AP	166.0001	SCHAEFFER, STERLING	75.00	.00	11,700.00
08/11/2026*	AP	167.0001	WOODS, SYLVIA	75.00	.00	11,775.00
08/11/2026*	AP	168.0001	ALLMOND, KRYSTAL	75.00	.00	11,850.00
08/11/2026*	AP	170.0001	BLACK, CALVIN	75.00	.00	11,925.00
08/11/2026*	AP	172.0001	COFFIN, ESTHER	75.00	.00	12,000.00
08/11/2026*	AP	184.0001	NATIVE VILLAGE OF SELAWIK	300.00	.00	12,300.00
08/11/2026*	AP	212.0001	WILSON, MARY ANN	75.00	.00	12,375.00
08/13/2026*	AP	242.0001	SHY JR, MATTHEW	75.00	.00	12,450.00
08/13/2026*	AP	244.0001	ON TIME SPORTS	350.00	.00	12,800.00
08/13/2026*	AP	245.0001	LIBERATI, ROSE MARY	75.00	.00	12,875.00
08/13/2026*	AP	246.0001	BOOTH, LARRY	75.00	.00	12,950.00
08/13/2026*	AP	248.0001	RICHARDS, MOLLY M	75.00	.00	13,025.00
08/13/2026*	AP	249.0001	COFFIN, ELSA	300.00	.00	13,325.00
08/18/2026*	AP	272.0001	HANNA, LENA	75.00	.00	13,400.00
08/18/2026*	AP	273.0001	WILLOCK, ROY N	75.00	.00	13,475.00
08/18/2026*	AP	276.0001	SAGE, JUDY	75.00	.00	13,550.00
08/18/2026*	AP	277.0001	WALKER, LORENA	75.00	.00	13,625.00

Amount type: Actual
Display: Reference detail

Date	Journal	Reference	Description	Debit Amount	Credit Amount	Balance
08/18/2026*	AP	285.0001	SAGE, AGNES	75.00	.00	13,700.00
08/18/2026*	AP	286.0001	CITY OF AMBLER	206.50	.00	13,906.50
08/18/2026*	AP	287.0001	WELLS, BERTHA	75.00	.00	13,981.50
08/18/2026*	AP	290.0001	GREIST, ELIZABETH	75.00	.00	14,056.50
08/18/2026*	AP	296.0001	RUSSELL, SANDRA	75.00	.00	14,131.50
08/18/2026*	AP	297.0001	COFFIN, FLORA	75.00	.00	14,206.50
08/18/2026*	AP	299.0001	SMITH, MARILYN	75.00	.00	14,281.50
08/18/2026*	AP	300.0001	SWAN, NORA	75.00	.00	14,356.50
08/18/2026*	AP	301.0001	THOMAS JR, DELBERT	75.00	.00	14,431.50
08/18/2026*	AP	321.0001	RALSTON, INA	75.00	.00	14,506.50
08/18/2026*	AP	322.0001	LEAVITT, ELLA N	75.00	.00	14,581.50
08/18/2026*	AP	335.0001	WILLIAMS, LORENA	75.00	.00	14,656.50
08/20/2026*	AP	369.0001	JACK, VICTOR	75.00	.00	14,731.50
08/20/2026*	AP	371.0001	RUSSELL, FRANKLIN	75.00	.00	14,806.50
08/20/2026*	AP	373.0001	DOUGLAS, HENRY	75.00	.00	14,881.50
08/20/2026*	AP	374.0001	TICKET, CLARA	75.00	.00	14,956.50
08/20/2026*	AP	375.0001	WILLIAMS JR, SAMUEL	75.00	.00	15,031.50
08/20/2026*	AP	377.0001	WASHINGTON, VERNON	75.00	.00	15,106.50
08/20/2026*	AP	386.0001	SWAN, COLLEEN	75.00	.00	15,181.50
08/20/2026*	AP	395.0001	WESTLAKE, V CHRISTINA	75.00	.00	15,256.50
08/25/2026*	AP	405.0001	WILLIAMS, SERENA	75.00	.00	15,331.50
08/25/2026*	AP	407.0001	ARNDT, KATHERINE	75.00	.00	15,406.50

Amount type: Actual
Display: Reference detail

Date	Journal	Reference	Description	Debit Amount	Credit Amount	Balance
08/25/2026*	AP	408.0001	WESLEY, NELLIE	75.00	.00	15,481.50
08/25/2026*	AP	409.0001	COFFIN, HANNAH	75.00	.00	15,556.50
08/25/2026*	AP	410.0001	SUN, KAYLENE	75.00	.00	15,631.50
08/25/2026*	AP	411.0001	MELTON-BARR, ALICE	75.00	.00	15,706.50
08/25/2026*	AP	412.0001	GARFIELD, FRANK	75.00	.00	15,781.50
08/25/2026*	AP	414.0001	SCHAEFFER, JANET	75.00	.00	15,856.50
08/25/2026*	AP	419.0001	WILSON JR, HENRY	75.00	.00	15,931.50
08/25/2026*	AP	420.0001	ALLMOND, KRYSTAL	75.00	.00	16,006.50
08/25/2026*	AP	423.0001	COFFIN, ESTHER	75.00	.00	16,081.50
08/25/2026*	AP	424.0001	HAILSTONE, TINMIAQ	300.00	.00	16,381.50
08/25/2026*	AP	426.0001	PENN, HARRY	75.00	.00	16,456.50
08/25/2026*	AP	429.0001	MELTON JR, INGRAM	75.00	.00	16,531.50
08/25/2026*	AP	431.0001	LOON, HELEN	75.00	.00	16,606.50
08/25/2026*	AP	432.0001	MCCLELLAN, LENA	75.00	.00	16,681.50
08/25/2026*	AP	433.0001	GREIST, PEARL	150.00	.00	16,831.50
08/25/2026*	AP	434.0001	STEIN, MARLENE	75.00	.00	16,906.50
08/25/2026*	AP	435.0001	HADLEY, AVIS	75.00	.00	16,981.50
08/25/2026*	AP	436.0001	WESTLAKE SR, LAWRENCE	75.00	.00	17,056.50
08/25/2026*	AP	439.0001	FOSTER, SOPHIE	75.00	.00	17,131.50
08/25/2026*	AP	446.0001	TAYLOR, PETER	75.00	.00	17,206.50
08/25/2026*	AP	447.0001	SHY, JOSEPHINE	75.00	.00	17,281.50
08/25/2026*	AP	448.0001	MULLUK, BILLIE	75.00	.00	17,356.50

Amount type: Actual
Display: Reference detail

Date	Journal	Reference	Description	Debit Amount	Credit Amount	Balance
08/26/2026*	AP	533.0001	WELLS FARGO BANK	300.00	.00	17,656.50
08/26/2026*	AP	545.0001	WELLS FARGO BANK	127.15	.00	17,783.65
08/27/2026*	AP	452.0001	KARMUN, BRENDA	75.00	.00	17,858.65
08/27/2026*	AP	453.0001	TAYLOR, PETER	75.00	.00	17,933.65
08/27/2026*	AP	454.0001	MITCHELL, KITTY	75.00	.00	18,008.65
08/27/2026*	AP	456.0001	GALLAHORN, KARAN	75.00	.00	18,083.65
08/27/2026*	AP	459.0001	DOUGLAS, FRANCES	75.00	.00	18,158.65
08/27/2026*	AP	460.0001	SWAN, NORA	75.00	.00	18,233.65
08/27/2026*	AP	598.0001	ADAMS, LONA	75.00	.00	18,308.65
08/27/2026*	AP	599.0001	WALTON, TRINA	75.00	.00	18,383.65
08/27/2026*	AP	600.0001	BALLOT, ETHEL	75.00	.00	18,458.65
08/27/2026*	AP	605.0001	STALKER SR, GEORGE	75.00	.00	18,533.65
08/27/2026*	AP	652.0001	DOWNEY, FRANK	75.00	.00	18,608.65
*			**08/31/2026 (08/26) Period Totals *** **	**9,383.65**	**.00**	**18,608.65**

Amount type: Actual
Display: Reference detail

NORTHWEST ARCTIC BOROUGH
ORDINANCE 26-06am01

AN ORDINANCE OF THE NORTHWEST ARCTIC BOROUGH ASSEMBLY PROVIDING FOR THE ESTABLISHMENT AND ADOPTION OF A FIRST AMENDED LINE-ITEM BUDGET FOR FISCAL YEAR 2027.

BE IT ENACTED BY THE ASSEMBLY OF THE NORTHWEST ARCTIC BOROUGH:

Section 1. CLASSIFICATION.

This is a non-code ordinance.

Section 2. GENERAL PROVISIONS.

The budget document attached provides for the authorized revenues and expenditures and the changes in cash balances as part of the budget for the period July 1, 2026 through June 30, 2027, and made a matter of public record.

Section 3. AUTHORIZATIONS AND APPROPRIATIONS.

The appropriation of $25,517,999 is hereby adopted and authorized for the period July 1, 2026 through June 30, 2027 and is the budget for that period. Subject to Assembly approval, by resolution, the Mayor may: (1) establish line-item expenditures within an authorized appropriation, or (2) transfer from one authorized appropriation to another any amount which would not annually exceed 10 percent or $25,000, whichever is greater. Under no circumstances may the total amount of such transactions exceed $150,000 prior to Assembly reappropriation pursuant to Section 6.12.060(E) of the Borough Code.

PASSED AND ADOPTED THIS __ DAY OF _____ 2026.

_____

Craig McConnell, Assembly President

PASSED AND APPROVED THIS ___ DAY OF _____ 2026.

_____
Dickie Moto, Sr., Mayor

SIGNED AND ATTESTED TO THIS __ DAY OF _____ 2026.

_____
Stella Atoruk, Borough Clerk

ATTEST:

First Reading: _____
Public Reading:_____

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

Summary of Revenue and Expenditures

Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
REVENUES	**$ 25,943,930**	**$ 25,943,930**	**$ -**	**0%**
Operations:				
Assembly Department	$ 1,398,475	$ 1,398,475	$ -	0%
Mayor's Department	$ 1,635,507	$ 1,336,857	$ (298,650)	-22%
Administration & Finance	$ 1,420,185	$ 1,307,185	$ (113,000)	-9%
Planning & Community	$ 539,915	$ 539,915	$ -	0%
Planning Commission	$ 36,803	$ 36,803	$ -	0%
COMM. & ECON. DEVELOP. DEPT	$ 1,115,796	$ 1,070,796	$ (45,000)	-4%
COMM. & ECON. DEVELOP. COMM	$ 25,669	$ 25,669	$ -	0%
Public Services Department	$ 2,232,846	$ 2,349,701	$ 116,855	5%
Public Safety Commission	$ 25,592	$ 25,592	$ -	0%
Public Safety Department	$ 474,022	$ 424,065	$ (49,957)	0%
Total Operations	**$ 8,904,810**	**$ 8,515,059**	**$ (389,752)**	**-5%**
Other Appropriations within General Fund				
Local Education Contribution	$ 7,718,129	$ 6,718,129	$ (1,000,000)	-15%
Water and Sewer Subsidy	$ 2,123,435	$ 2,123,435	$ -	0%
Total Other Appropriations	**$ 9,841,564**	**$ 8,841,564**	**$ (1,000,000)**	**-11%**
Transfers from General Fund				
Investment Contribution (per code)	$ 5,700,000	$ 5,700,000	$ -	0%
Bond Debt Appropriation	$ 1,071,625	$ 1,071,625	$ -	0%
Transfer out Grants (match)	$ -	$ 87,000	$ 87,000	0%
Total Transfers from General Fund	**$ 6,771,625**	**$ 6,858,625**	**$ 87,000**	**1%**
TOTAL EXPENDITURES	**$ 25,517,999**	**$ 24,215,248**	**$ (1,302,752)**	**-5%**
Excess (Deficiency) of revenue over expenditures	**$ 425,931**			
Appropriation to Unassigned Fund Balance				

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

SUPPLEMENTAL Programs and Contributions for FY27

The Northwest Arctic Borough provides financial support to various organizations, programs, events or causes through the General Fund. The funding is optional and at the mercy of funding availability. The funding is budgeted by departments and requirements to obtain vary. The following list does not obligate the Borough, instead it is intended to give the Assembly an idea of the financial support provided by the Borough.

Department	Line Item	Amount	Description
Assembly	REVENUE SHARING PROGRAM	$ 345,962	*Paid to village city governments*
Assembly	ASSEMBLY DONATIONS	$ 200,000	*Discretionary for Assembly*
Mayor	NW LEADERSHIP TEAM	$ 10,000	*NWALT Meetings and associated expenses*
Assembly	ICC MEMBERSHIP	$ 25,000	*Discretionary funds to support Arctic Policy*
Mayor	CHARITABLE DONATIONS	$ 125,000	*Medical, burial and other donations for residents*
Planning	PLANNING GRANTS	$ 60,000	*$5,000 planning grants for villages*
CEDA	FR FERGUSON SCHOLARSHIPS	$ 300,000	*Educational scholarships for NAB Residents*
CEDA	SMALL BUSINESS GRANTS	$ 20,000	*Grants given to small business in NAB*
CEDA	FISHING GRANTS	$ 30,000	*Grants for commercial & subsistence users*
CEDA	CEDA PROJECTS	$ 20,000	*Funds to allow CEDA to complete Economic Development in the region*
General	GRANT MATCH FUNDS	$ -	*Funds allocated and committed to grants.*
General	WATER & SEWER SUBSIDY	$ 2,123,435	*Subsidy paid to ANTHC that works to reduce water and sewer rates for residents*
	Total Discretionary Subsidy	$ 3,259,397	
Required	LOCAL EDUCATION CONTRIBUTION	$ 7,718,129	*The required annual contribution to the School District, as mandated by State law*
	TOTAL SUBSIDY	$ 10,977,526	

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2026

Grant Funds Summary

Description	FY27	Award Dates
STATE GRANTS		
SOA Designated Legislative Grant (Public Safety)	$900,000	*July 2024 - Jan 2027*
AEA - Selawik Solar PV	$1,134,500	*July 2023 - Dec 2025*
SOA Designated Legislative Grant (Public Safety)	$1,500,000	*April 22- June 2027*
SOA VPSO	$3,904,175	*annual*
TOTAL STATE GRANTS	**$7,438,675**	
FEDERAL GRANTS		
US DOE - EECBG Program	$75,270	*December 2026*
EPA - Climate Pollution Reduction (TCC)	$143,809	*July 23- Sept 25*
Design & Permit Solar PV	$1,134,500	*July 23- Sept 25*
Dept of Energy - Solar, Battery & Heat Pumps (OCED)	$54,802,907	
LATCF (Local Assistance & Tribal Consistency)	$4,536,000	*Mar 21 - Dec 26*
REPP Selawik Solar Array & Battery	$1,998,820	*Jan 23 - Sept 2027*
TOTAL FEDERAL GRANTS	**$62,691,306**	
GRANT ADMINISTRATION		
Dept of Energy - Ambler	$650,000	*Mar 24 - Mar 25*
AEA Ambler Bulk Fuel	$650,000	*Mar 24 - Mar 25*
HUD - Ambler Search & Rescue	$1,500,000	*Apr 24 - Aug 31*
TOTAL FEDERAL GRANTS	**$2,800,000**	
OTHER FUNDING		
DOJ COPS - Maniilaq	$575,797	
TOTAL OTHER GRANTS	**$ 575,797**	
TOTAL GRANTS	**$ 73,505,778**	

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

General Fund Revenues and Expenditures Change

General Fund Revenues:

The General Fund revenues total $ 25,943,930 or 0.0% from the prior budget ordinance.

General Fund Expenditures:

The General Fund expenditures tot $ 25,517,999 or -5.4% from the prior budget ordinance.

Changes in the general fund expenditures by department are as follows:

Expenditure Type	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
Assembly Department expenditures remains the same	$ -	0%
Mayor's Department expenditures increased by	$ (298,650)	-22%
Admin/Finance expenditures increased by	$ (113,000)	-9%
Planning & Community expenditures remains the same	$ -	0%
Planning Commission expenditures remained the same	$ -	0%
CED Department expenditures increased by	$ (45,000)	-4%
Economic Development Commission remained the same	$ -	0%
Public Services expenditures decreased by'	$ 116,855	5%
Public Safety Commission expenditures remained the same	$ -	0%
Public Safety Department expenditures increased by	$ (49,957)	0%
Local Contribution to Education increased by	$ (1,000,000)	-15%
Water and Sewer subsidy remains the same	$ -	0%
Investment Contribution Appropriation	$ -	0%
Transfer out Grants was created	$ -	0%
Bond Debt Appropriation remains the same	$ -	0%
TOTAL CHANGE IN EXPENDITURES	**(1,302,752)**	**-5%**

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-00 Revenues

Account #	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
4000	PILT REVENUE	**19,000,000**	19,000,000	-	0%
4010	FEDERAL PILT REVENUE	**1,100,062**	1,100,062	-	0%
4020	SCHOOL LAND LEASE	**4,263,906**	4,263,906	-	0%
4050	TOBACCO EXCISE TAX REVENUE	**500,000**	500,000	-	0%
4075	MARIJUANA EXCISE TAX REVENUE	**60,000**	60,000	-	0%
4098	MISCELLANEOUS LEASE REVENUE	-			
4099	MISCELLANEOUS REVENUE	**50,000**	50,000	-	0%
4220	SOA COMMUNITY ASSISTANCE PROGRAM	**345,962**	345,962	-	0%
4400	INDIRECT COST RECOVERY	**80,000**	80,000	-	0%
4401	ADMINISTRATIVE FEES	**30,000**	30,000	-	0%
4550	INVESTMENT INCOME - AVAILABLE FOR OPERATIONS	**500,000**	500,000	-	0%
4600	LAND PERMIT REVENUE	**14,000**	14,000	-	0%
	TOTAL GENERAL REVENUES	**$ 25,943,930**	**$ 25,943,930**	**$ -**	**0%**

General Fund Revenues:

PILT Revenue is budgeted at $19 million. This number is based on economic forecasts.

Federal PILT Revenue is budgeted at $1,100,062 This amount has been received for the last 2 fiscal years and is a good projection. The amount is not known until June of the fiscal year when the Federal Government releases the funds. The budget will be updated once NAB Confirms the revenue.

School Land Lease is budgeted at $4,263,906. This is consistent with prior year.

Tobacco Excise Tax Revenue is budgeted at $500,000. Is consistent with prior year. This is based on taxes collected.

Marijuana Excise Tax Revenue is budgeted at $60,000. This is consistent with prior year. This is based on taxes collected.

Miscellaneous Revenue is budgeted at $50,000. This is consistent with prior year.

SOA Community Assistance is budgeted at $345,000. It is important to note this number is not final until the State of Alaska approves it's FY27 budget. NAB has opted to distribute 100% of it's assistance program to the villages. If the revenue is not received payments to villages are not made.

Indirect Cost Recovery is budgeted at $80,000. Consistent with prior year. The Indirect Cost Recovery has 2 sources, VPSO grant and OCED.

Investment Income - Available for Operations is budgeted at $500,000. Consistent with prior year. This revenue represents the interest earned in the Alaska Municipal League Investment Pool (AMLIP) account. AMLIP allows for investment in high quality and low risk investment vehicles that are liquidated (cashed) easily. The increase is due to the interest rates rising in reaction to the Federal Reserve's actions to address the Nation's inflation.

Land Permit Revenue is budgeted at $14,000. Consistent with prior year.

Northwest Arctic Borough
General Fund
Budget Ordinance 26--06am01
June 30, 2027

01-01 Assembly

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES	**193,362**	193,362	-	0%
6010	WAGES - ELECTION WORKERS	**20,000**	20,000	-	0%
6110	FICA	**27,534**	27,534	-	0%
6111	UNEMPLOYMENT	**6,408**	6,408	-	0%
6115	MEDICAL	**58,540**	58,540	-	0%
6125	PERS	**62,669**	62,669	-	0%
6210	AIR TRANSPORTATION	**60,000**	60,000	-	0%
6220	GROUND TRANSPORTATION	**10,000**	10,000	-	0%
6230	LODGING	**60,000**	60,000	-	0%
6240	MEETING FEES-ASSEMBLY	**175,000**	175,000	-	0%
6250	PER DIEM	**40,000**	40,000	-	0%
6320	PRINTING & PUBLICATIONS	**5,000**	5,000	-	0%
6370	DUES & SUBSCRIPTIONS	**35,000**	35,000	-	0%
6399	MISCELLANEOUS	**20,000**	20,000	-	0%
6820	ASSEMBLY RETREAT	**30,000**	30,000	-	0%
6830	ARCTIC ISSUES	**25,000**	25,000	-	0%
7000	REVENUE SHARING PROGRAM	**345,962**	345,962	-	0%
7050	DONATIONS	**200,000**	200,000	-	0%
7200	ELECTION EXPENSE	**24,000**	24,000	-	0%
	TOTAL	**$ 1,398,475**	**$ 1,398,475**	**$ -**	**0%**

Assembly Department Expenditures:

Salaries. See Salary schedule.

Assembly lines remain the same.

Donations is budgeted at $200,000. A decrease of $125,000 from previous year. The line item included to remind Assembly of donations. Please note that all donation requests need to be reviewed and approved by the Assembly. NAB will note the Assembly donation line item has historically funded the following:

FY26 donations:	**APPROVED**	**SPENT/ACTUAL**
NWABSD Regional Basketball	$ 15,000	$ 15,000
Wellsness Taskforce	$ 12,150	$ 12,150
City of Kotzebue ambulance services	$ 150,000	$ 150,000
Grave Diggers	$ 27,489	$ 27,489
KOTZ Radio donation	$ 95,000	$ 95,000
Kobuk 440	$ 25,000	$ 25,000
TOTAL	$ 324,639	$ 324,639

SUMMARY OF DONATIONS

FY25 donations:	**ACTUAL**
Chukchi College	$ -
KOTZ Radio	$ 40,000
Grave Diggers - Jack Hammer purchase	$ 10,595
Nikatchuat School	$ 25,000
CITY OF KOTZEBUE AMBULANCE	$ 150,000
KOBUK 440	$ 25,000
TOTAL	$ 250,595

FY24 donations:	**ACTUAL**
Chukchi College	$ 50,000
KOTZ Radio	$ 120,000
KOBUK 440	$ 25,000
TOTAL	$ 195,000

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-02 Mayor

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES-MAYOR	**463,147**	353,147	(110,000)	-31%
6110	FICA	**7,095**	5,410	(1,685)	-31%
6111	UNEMPLOYMENT	**7,642**	5,827	(1,815)	-31%
6115	MEDICAL	**117,080**	87,810	(29,270)	-33%
6125	PERS	**100,543**	76,663	(23,880)	-31%
6210	AIR TRANSPORTATION	**28,000**	28,000	-	0%
6220	GROUND TRANSPORTATION	**9,000**	9,000	-	0%
6230	LODGING	**20,000**	20,000	-	0%
6250	PER DIEM	**13,000**	13,000	-	0%
6300	OFFICE SUPPLIES	**22,000**	22,000	-	0%
6370	DUES & SUBSCRIPTIONS	**10,000**	8,000	(2,000)	-25%
6380	TRAINING	**3,000**	3,000	-	0%
6399	MISCELLANEOUS	**20,000**	20,000	-	0%
6400	CONSULTANTS	**140,000**	140,000	-	0%
6450	LEGAL SERVICES	**240,000**	235,000	(5,000)	-2%
6825	NW LEADERSHIP TEAM	**10,000**	10,000	-	0%
7050	CHARITABLE DONATIONS	**125,000**	100,000	(25,000)	-25%
7600	EMERGENCY DISASTER RELIEF	**300,000**	200,000	(100,000)	-50%
	TOTAL	**$ 1,635,507**	**$ 1,336,857**	**$ (298,650)**	**-22%**

Mayor Department Expenditures:

Salaries See salary schedule. Increases due to new position.

Dues & Subcriptions is budgeted at $10,000. This is an increase due to additional subscriptions to HR, meeting and other services.

Consultants is budgeted at $140,000. The budget is used for contracts for lobbying and a contract with AML.

Legal Services is budgeted at $240,000. An increase from prior ordinance. The budget is used for legal counsel over NAB operations.

Charitable Donations is budgeted at $125,000. The line item provides medical, burial and other donations to individuals, organizations, events and businesses on a case by case basis. The policy over this was presented to the Assembly and approved.

Emergency Disaster Relief is budgeted at $300,000. The funds allow NAB to help the region in disaster response, past examples: spring flooding, oil spills, fuel shortages, extreme cold events.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-03 Administration & Finance

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES-ADM/FINANCE	**332,591**	332,591	-	0%
6110	FICA	**5,095**	5,095	-	0%
6111	UNEMPLOYMENT	**5,488**	5,488	-	0%
6115	MEDICAL	**87,810**	87,810	-	0%
6125	PERS	**72,201**	72,201	-	0%
6210	AIR TRANSPORTATION	**5,000**	5,000	-	0%
6220	GROUND TRANSPORTATION	**1,000**	1,000	-	0%
6230	LODGING	**5,000**	5,000	-	0%
6250	PER DIEM	**5,000**	5,000	-	0%
6300	SUPPLIES	**20,000**	20,000	-	0%
6310	POSTAGE AND FREIGHT	**10,000**	10,000	-	0%
6320	PRINTING & PUBLICATIONS	**15,000**	15,000	-	0%
6330	OFFICE BUILDING UTILITIES	**125,000**	125,000	-	0%
6340	TELEPHONE	**44,000**	44,000	-	0%
6365	GAS & OIL	**28,000**	28,000	-	0%
6370	DUES & SUBSCRIPTIONS	**5,000**	5,000	-	0%
6380	TRAINING	**5,000**	5,000	-	0%
6390	JANITORIAL EXPENSE	**36,000**	36,000	-	0%
6460	AUDIT / ACCOUNTING	**313,000**	200,000	(113,000)	-57%
6600	INSURANCE	**300,000**	300,000	-	0%
	TOTAL	**$ 1,420,185**	**$ 1,307,185**	**$ (113,000)**	**-9%**

Finance Department Expenditures:

Salaries See salary schedule.

Accounting/Audit is budgeted at $313,000. The budget covers the cost of an annual financial statement audit and single audit (audit over grants). This budget also covers a contract for audit preparation and review services.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-05 Planning Department

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES-PLANNING/COMMUNITY	**217,050**	217,050	-	0%
6110	FICA	**3,325**	3,325	-	0%
6111	UNEMPLOYMENT	**3,581**	3,581	-	0%
6115	MEDICAL	**58,540**	58,540	-	0%
6125	PERS	**47,118**	47,118	-	0%
6210	AIR TRANSPORTATION	**13,200**	13,200	-	0%
6220	GROUND TRANSPORTATION	**3,600**	3,600	-	0%
6230	LODGING	**10,000**	10,000	-	0%
6250	PER DIEM	**10,500**	10,500	-	0%
6300	SUPPLIES	**10,000**	10,000	-	0%
6370	DUES & SUBSCRIPTIONS	**3,000**	3,000	-	0%
6400	CONSULTANTS	**100,000**	100,000	-	0%
7120	PLANNING GRANTS	**60,000**	60,000	-	0%
	TOTAL	**$ 539,915**	**$ 539,915**	**$ -**	**0%**

Planning Department Expenditures:

Salaries See salary schedule.

All budgets remain the same.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-06 Planning Commission

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6110	FICA	**1,163**	1,163	-	0%
6210	AIR TRANSPORTATION	**10,200**	10,200	-	0%
6230	LODGING	**9,000**	9,000	-	0%
6240	MEETING FEES	**8,500**	8,500	-	0%
6250	PER DIEM	**5,940**	5,940	-	0%
6300	OFFICE SUPPLIES	**2,000**	2,000	-	0%
	TOTAL	**$ 36,803**	**$ 36,803**	**$ -**	**0%**

Planning Commission Expenditures remained the same from prior budget ordinance. The funds for this Commission allow for travel and meeting fees for Commission Members to meet and review permit applications. The planning commission meets quarterly by Code.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-07 Community and Economic Development Department

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES-EDA	**436,155**	436,155	-	0%
6110	FICA	**6,682**	6,682	-	0%
6111	UNEMPLOYMENT	**7,197**	7,197	-	0%
6115	MEDICAL	**117,080**	117,080	-	0%
6125	PERS	**94,683**	94,683	-	0%
6210	AIR TRANSPORTATION	**15,000**	27,000	12,000	44%
6220	GROUND TRANSPORTATION	**3,000**	6,000	3,000	50%
6230	LODGING	**6,000**	20,000	14,000	70%
6250	PER DIEM	**5,000**	8,000	3,000	38%
6300	OFFICE SUPPLIES	**3,000**	3,000	-	0%
6320	PRINTING & PUBLICATIONS	**2,000**	2,000	-	0%
6370	DUES & SUBSCRIPTIONS	**3,000**	3,000	-	0%
6380	TRAINING	**2,000**	2,000	-	0%
6400	CONSULTANTS	**40,000**	50,000	10,000	20%
6240	STEERING COMMITTEE	**5,000**	5,000	-	0%
7100	FR FERGUSON SCHOLARSHIPS	**300,000**	250,000	(50,000)	-20%
7110	SMALL BUSINESS GRANTS	**20,000**	8,000	(12,000)	-150%
7130	FISHING GRANTS	**30,000**	5,000	(25,000)	-500%
7135	CEDA PROJECTS	**20,000**	20,000	-	0%
7136	ENERGY PROJECTS	**-**	-	-	0%
	TOTAL	**$ 1,115,796**	**$ 1,070,796**	**$ (45,000)**	**-4%**

Community and Economic Development Department Expenditures:

Salaries See salary schedule.

Fishing Grants is budgeted at $10,000. An increase from prior ordinance due to approved grant applications. The budget provides financial support for subsistence and commercial fishermen in the region.

01-08 Community and Economic Development Commission

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6110	FICA	**669**	669	-	0%
6210	AIR TRANSPORTATION	**6,500**	6,500	-	0%
6230	LODGING	**6,000**	6,000	-	0%
6240	MEETING FEES	**4,000**	4,000	-	0%
6250	PER DIEM	**2,500**	2,500	-	0%
6300	OFFICE SUPPLIES	**6,000**	6,000	-	0%
	TOTAL	**$ 25,669**	**$ 25,669**	**$ -**	0%

CEDA Commission Expenditures remained the same from prior budget ordinance. The funds for this Commission allow for travel and meeting fees for Commission Members to meet and explore economic opportunities for the Region.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-09 Public Services Department

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES	**788,931**	882,498	93,567	11%
6010	TEMP TRAILS	**114,395**	114,395	-	0%
6110	FICA	**13,839**	15,272	1,433	9%
6111	UNEMPLOYMENT	**14,905**	16,448	1,543	9%
6115	MEDICAL	**234,160**	234,160	-	0%
6125	PERS	**171,266**	191,578	20,312	11%
6210	AIR TRANSPORTATION	**25,000**	25,000	-	0%
6220	GROUND TRANSPORTATION	**5,000**	5,000	-	0%
6230	LODGING	**10,000**	10,000	-	0%
6250	PER DIEM	**10,350**	10,350	-	0%
6300	SUPPLIES	**4,000**	4,000	-	0%
6310	AIR FREIGHT	**70,000**	70,000	-	0%
6335	NOATAK AIRPORT LEASE-YEARLY	**11,000**	11,000	-	0%
6345	INFORMATION TECHNOLOGY CONTRACTOR	**230,000**	230,000	-	0%
6360	PUBLIC SERVICES PROJECTS	**150,000**	150,000	-	0%
6370	DUES & SUBSCRIPTIONS	**3,000**	3,000	-	0%
7150	WINTER TRAILS	**100,000**	100,000	-	100%
7155	EMERGENCY MANAGEMENT	**5,000**	5,000	-	100%
6399	MISCELLANEOUS	**13,000**	13,000	-	0%
8002	SEARCH AND RESCUE SUPPORT	**65,000**	65,000	-	100%
8004	SEARCH & RESCUE STIPENDS	**72,000**	72,000	-	100%
8501	FIRE DEPARTMENT SUPPORT	**50,000**	50,000	-	100%
8506	BATTALION CHIEF STIPENDS	**72,000**	72,000	-	100%
	TOTAL	**$ 2,232,846**	**$ 2,349,701**	**$ 116,855**	**5%**

Public Services Expenditures:

Salaries See salary schedule. **The decrease is due to changes in positions in the current year.**

01-10 Public Safety Commission

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6110	FICA	**842**	842	-	0%
6210	AIR TRANSPORTATION	**6,228**	6,228	-	0%
6230	LODGING	**3,668**	3,668	-	0%
6240	MEETING FEES	**8,800**	8,800	-	0%
6250	PER DIEM	**4,554**	4,554	-	0%
6300	SUPPLIES	**1,500**	1,500	-	0%
	TOTAL	**$ 25,592**	**$ 25,592**	**$ -**	**0%**

Public Safety Commission expenditures remained the same from prior budget ordinance. The funds for this Commission allow for travel and meeting fees for Commission Members to meet and explore public safety issues.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

01-11 Public Safety Department

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6000	SALARIES	**188,150**	148,150	(40,000)	-27%
6110	FICA	**2,882**	2,270	(612)	-27%
6111	UNEMPLOYMENT	**3,104**	2,444	(660)	-27%
6115	MEDICAL	**58,540**	58,540	-	0%
6125	PERS	**40,845**	32,161	(8,684)	-27%
6210	AIR TRANSPORTATION	**10,000**	10,000	-	0%
6220	GROUND TRANSPORTATION	**3,000**	3,000	-	0%
6230	LODGING	**7,500**	7,500	-	0%
6250	PER DIEM	**7,500**	7,500	-	0%
6300	SUPPLIES	**25,000**	25,000	-	0%
6310	AIR FREIGHT	**10,000**	10,000	-	0%
6370	DUES & SUBSCRIPTIONS	**7,500**	7,500	-	0%
6399	MISCELLANEOUS	**5,000**	5,000	-	0%
6400	CONSULTANTS	**75,000**	75,000	-	0%
6360	WARM STORAGE FACILITIES	**5,000**	5,000	-	100%
7160	Public Safety Summit	**-**	-	-	0%
7500	VPSO House Expenses	**25,000**	25,000	-	0%

TOTAL PUBLIC SAFETY	**474,022**	**$ 424,065**	**$ (49,957)**	**-12%**

Public Safety Expenditures:

Salaries See salary schedule. **An increase is due to VPSO incentive program.**

Other General Fund Appropriations

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
9004	LOCAL EDUCATION CONTRIBUTION	**7,718,129**	**6,718,129**	(1,000,000)	-15%
9007	WATER & SEWER SUBSIDY	**2,123,435**	**2,123,435**	-	0%
	TOTAL	**$ 9,841,564**	**$ 8,841,564**	**$ (1,000,000)**	**-11%**

Local Education Contribution is budgeted at $7,718,129. An increase from prior ordinance due to supplemental contribution approvals. This amount is approved via resolution.

Water and Sewer Subsidy is budgeted at $2,123,435. This budget is submitted by ANTHC.

Transfers from General Fund

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
9002	INVESTMENT CONTRIBUTION	**5,700,000**	**5,700,000**	-	0%
9003	BOND DEBT APPROPRIATION	**1,071,625**	**1,071,625**	-	0%
9009	TRANSFER OUT GRANTS	**-**	**87,000**	87,000	
	TOTAL	**$ 6,771,625**	**$ 6,858,625**	**$ 87,000**	**1%**

Investment Contribution is budgeted at $5,700,000. This is the required amount set by code and will be determined upon receipt of the PILT payment.

01-12 COMMUNITY UTILITY ASSISTANCE PROGRAM (CUAP)

ACCT	Description	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Variance Favorable (Unfavorable)	% Variance Favorable (Unfavorable)
6400-00	COORDINATOR/TRAINING	**336,732**	336,732	-	0%
6400-01	AMBLER SUBSIDY	**117,991**	117,991	-	0%
6400-02	BUCKLAND SUBSIDY	**134,696**	134,696	-	0%
6400-03	DEERING SUBSIDY	**122,510**	122,510	-	0%
6400-04	KIANA SUBSIDY	**149,736**	149,736	-	0%
6400-05	KIVALINA SUBSIDY	**120,260**	120,260	-	0%
6400-06	KOBUK SUBSIDY	**98,493**	98,493	-	0%
6400-07	KOTZEBUE SUBSIDY	**337,563**	337,563	-	0%
6400-09	NOORVIK SUBSIDY	**340,946**	340,946	-	0%
6400-10	SELAWIK SUBSIDY	**231,263**	231,263	-	
6400-11	SHUNGNAK SUBSIDY	**133,245**	133,245	-	0%
	TOTAL	**$ 2,123,435**	**$ 2,123,435**	**$ -**	**0%**

COMMUNITY UTILITY ASSISTANCE PROGRAM an increase of $389,035 is requested due to previous year expenditures late billing from ANTHC. Activity was done within FY25 (previous year) budgets.

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

Salary Schedule

Position	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Difference	% Difference
Assembly Member Stipends	$ 175,000	$ 175,000	$ -	0%
Borough Clerk	$ 121,262	$ 121,262	$ -	0%
Deputy Clerk	$ 72,100	$ 72,100	$ -	0%
Election Workers	$ 20,000	$ 20,000	$ -	0%
TOTAL Assembly	**$ 388,362**	**$ 388,362**	**$ -**	**0%**
Mayor	$ 170,000	$ 170,000	$ -	0%
Administrator	$ 108,147	$ 108,147	$ -	0%
Administrative Asst II	$ 70,000	$ 70,000	$ -	0%
HR Coordinator/Grant Writer	$ 110,000		$ (110,000)	100%
Grant Writer				
Intern	$ 5,000	$ 5,000	$ -	0%
TOTAL Mayor	**$ 463,147**	**$ 353,147**	**$ (110,000)**	**-31%**
Treasurer	$ 154,891	$ 154,891	$ -	0%
Project Accountant (new)	$ 92,700	$ 92,700	$ -	0%
Accounting Clerk	$ 85,000	$ 85,000	$ -	0%
TOTAL Finance	**$ 332,591**	**$ 332,591**	**$ -**	**0%**
Planning Director	$ 129,430	$ 129,430	$ -	0%
Planning Administrator	$ -	$ -	$ -	0%
Planning Coordinator	$ 80,620	$ 80,620	$ -	0%
Intern	$ 7,000	$ 7,000	$ -	0%
TOTAL Planning	**$ 217,050**	**$ 217,050**	**$ -**	**0%**
CEDA Director	$ 133,900	$ 133,900	$ -	0%
CEDC Coordinator	$ 80,340	$ 80,340	$ -	0%
Sulanich clerk	$ 86,929	$ 86,929	$ -	0%
Energy Manager	$ 127,986	$ 127,986	$ -	0%
Summer Intern	$ 7,000	$ 7,000	$ -	0%
TOTAL CEDA	**$ 436,155**	**$ 436,155**	**$ -**	**0%**

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

Salary Schedule, continued:

Position	PROPOSED FY27 AMENDMENT	APPROVED FY27 BUDGET	$ Difference	% Difference
Public Services Director	$ 147,917	$ 147,917	$ -	0%
Public Services Administrator	$ 95,887	$ 95,887	$ -	0%
Facilities Engineer	$ 90,178	$ 90,178	$ -	0%
Maintenance Technician	$ 247,250	$ 123,600	$ (123,650)	0%
KVL Road Maint. Workers	$ 92,700	$ 92,700	$ -	0%
Fire Safety Coordinator &	$ 105,000	$ 123,600	$ 18,600	0%
Search and Rescue Coordinator	$ -	$ 78,613	$ -	0%
Trail Staking Maintenance	$ 69,395	$ 69,395	$ -	0%
Temporary Trail Stakers	$ 45,000	$ 45,000	$ -	0%
Emergency Manager	$ -	$ 120,003	$ 120,003	0%
Temporary Construction Workers	$ 10,000	$ 10,000	$ -	0%
TOTAL Public Services	**$ 903,326**	**$ 996,893**	**$ 14,953**	**1%**
Public Safety Director	$ -	$ -	$ -	0%
Public Safety Admin Asst (1/2)	$ 56,650	$ 56,650	$ -	0%
Maintenance Tech (1/2)	$ 51,500	$ 51,500	$ -	0%
VPSO Rentention	$ 80,000	$ 40,000		0%
Project Manager		$ -	$ -	
TOTAL Public Safety	**$ 188,150**	**$ 148,150**	**$ 40,000**	**27%**
TOTAL SALARIES	**$ 2,928,781**	**$ 2,872,348**	**$ 56,433**	**2%**

Northwest Arctic Borough
General Fund
Budget Ordinance 26-06am01
June 30, 2027

Five-year Bond Debt Service Schedule (includes Kivalina bond)

Total Debt Service:

Last year of DEED for NAB

	FY26	FY27	FY28	FY29	FY30
Total Bond Debt Service (Principal & Interest)	$ 13,666,875	$ 12,133,875	$ 11,062,250	$ 9,992,375	$ 8,915,875
Fiscal Year Debt Service Payment	$ 1,533,000	$ 1,071,625	$ 1,069,875	$ 1,076,500	$ 1,071,375
Ending Balance Debt Service	$ 12,133,875	$ 11,062,250	$ 9,992,375	$ 8,915,875	$ 7,844,500

State DEED Reimbursement Calculation:

Last year of DEED for NAB

	FY24	FY25	FY26	FY27	FY28
State DEED Reimbursement	$ 1,579,113	$ 397,800	$ 401,288	$ -	$ -
NAB Bond Debt Appropriation	$ 1,649,513	$ 1,141,075	$ 1,131,713	$ 1,071,625	$ 1,069,875
Total Debt Service Payment	$ 3,228,626	$ 1,538,875	$ 1,533,001	$ 1,071,625	$ 1,069,875

Note: FY26 was the last year NAB has debt series that are eligible for DEED reimbursement.

NORTHWEST ARCTIC BOROUGH ASSEMBLY
ORDINANCE 26-11

AN ORDINANCE OF THE NORTHWEST ARCTIC BOROUGH ASSEMBLY AMENDING THE BOROUGH CODE TO UPDATE THE VILLAGE IMPROVEMENT COMMISSION MEETING STIPEND, AND FOR RELATED PURPOSES.

WHEREAS: Chapter 11.08 of the Borough Code established the Village Improvement Commission (VIC) in 2017; and

WHEREAS: NABC Section 11.08.030 addresses the VIC meeting stipend; and

WHEREAS: the VIC meeting stipend has not been updated since its original establishment at the rate of $250 per meeting day; and

WHEREAS: the Borough Assembly meeting stipend (NABC 2.04.040(A)) and the general Borough board, commission, and committee (NABC 2.80.060) stipends have both been increased to $450 per meeting day; and

WHEREAS: the VIC voted to request an increase in its meeting stipend to be consistent with other boards, commissions, and committees at the rate of $450 per meeting day; and

WHEREAS: the Assembly wishes to update the Borough Code accordingly.

NOW THEREFORE BE IT ENACTED: by the Northwest Arctic Borough Assembly as follows:

Section 1: the Borough Code is amended as follows:

11.08.030 Organization.

The commission will be organized as follows:

A. Membership. Membership will include:

1. One member from each of the following borough communities: Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, and Shungnak.

2. The borough will retain an ex officio seat on the commission that will be nominated by the borough mayor and confirmed by the assembly.

3. The borough will solicit nominations to the commission from the community at large, including the village and city councils from each respective village. Subject to assembly confirmation, the mayor will appoint the members of the commission from among those nominated deemed suitable to serve on the commission. Members will serve staggered three-year terms, which may be renewed.

4. If a member anticipates missing a meeting, the member may appoint a substitute for no more than one meeting.

B. A vacancy will be declared by the borough under the following conditions:

1. If a member changes permanent residence to outside the borough.

2. If a member's resignation is submitted to and accepted by the commission.

3. If a member misses three consecutive meetings unless excused by the commission.

4. If the mayor, in concurrence with the assembly, determines that it is in the borough's best interest to remove the member.

C. Meetings. Regular meetings of the commission shall be held a minimum of four times a year in person or by teleconference. Such meetings shall be scheduled by the chair and are subject to the Open Meetings Act.

D. Stipend. Other than ex officio members, upon request each member of the commission shall receive compensation at the rate of ~~**$250.00**~~ **$450.00** for each meeting day of the commission attended. Compensation does not include per diem, which may be paid separately at the rate established by code for assembly members' attendance at regular assembly meetings.

(Ord. 17-07 § 1, 2017; Ord. 18-09 § 6, 2018; Ord. 26-02, 3/31/2026)

Section 2: This Code Ordinance shall be effective upon adoption.

PASSED AND ADOPTED THIS ___ DAY OF _____ 2026.

_____

Craig McConnell, Assembly President

PASSED AND APPROVED THIS ___ DAY OF _____ 2026.

_____
Dickie Moto, Sr., Mayor

SIGNED AND ATTESTED TO THIS ___ DAY OF _____ 2026.

_____
Stella Atoruk, Borough Clerk **ATTEST:**

First Reading: _____

Second Reading: _____

NORTHWEST ARCTIC BOROUGH ASSEMBLY
ORDINANCE 26-12

AN ORDINANCE OF THE NORTHWEST ARCTIC BOROUGH ASSEMBLY AMENDING THE BOROUGH CODE TO UPDATE THE MEETING INCENTIVE CAP, AND FOR RELATED PURPOSES.

WHEREAS: Chapter 2.32 of the Borough Code sets the Borough standards for meetings of the Borough's municipal bodies; and

WHEREAS: NABC Section 2.32.050 addresses meeting incentives to encourage attendance and participation at public meetings; and

WHEREAS: NABC Section 2.32.050 currently caps meeting incentives at $300 in aggregate value of either products, services or cash awards; and

WHEREAS: this cap has not been adjusted since 2001; and

WHEREAS: on August 20, 2026, the Village Improvement Commission voted to request an increase to this cap from $300 to $600 in order to promote better attendance at community meetings for the Village Improvement Fund; and

WHEREAS: the Assembly wishes to update the Borough Code accordingly.

NOW THEREFORE BE IT ENACTED: by the Northwest Arctic Borough Assembly as follows:

Section 1: the Borough Code is amended as follows:

2.32.050 Meeting incentives.
Subject to appropriations and in the mayor's discretion, modest door prizes or other incentives may be offered to encourage attendance at borough public meetings. Total incentives for any meeting shall not exceed ~~**$300.00**~~ **$600.00** in aggregate value of either products, services or cash awards. Incentives may only be offered to encourage attendance at informational or other meetings at which no votes will be taken or other decisions made.
(Ord. 01-02 § 1, 2001)

Section 2: This Code Ordinance shall be effective upon adoption.

PASSED AND ADOPTED THIS ___ DAY OF _____ 2026.

_____
Craig McConnell, Assembly President

PASSED AND APPROVED THIS ___ DAY OF _____ 2026.

_____
Dickie Moto, Sr., Mayor

SIGNED AND ATTESTED TO THIS ___ DAY OF _____ 2026.

_____
Stella Atoruk, Borough Clerk **ATTEST:**

First Reading: _____

Second Reading: _____

NORTHWEST ARCTIC BOROUGH ASSEMBLY
ORDINANCE 26-13

AN ORDINANCE OF THE NORTHWEST ARCTIC BOROUGH ASSEMBLY AMENDING THE BOROUGH CODE TO SPECIFICALLY ADDRESS THE VILLAGE IMPROVEMENT SUSTAINABILITY FUND, AND FOR RELATED PURPOSES.

WHEREAS: Chapter 6.28 of the Borough Code established the Borough Sustainability Fund; and

WHEREAS: when establishing the Sustainability Fund, the Assembly recognized that mining resources are a non-renewable resource, and that the Borough must plan ahead to sustain Borough services and functions in the event large-scale mines no longer operate within the Borough; and

WHEREAS: in 2017, when the Borough established the Village Improvement Fund (VIF) in partnership with Teck Alaska under the terms of the parties' Memorandum of Commitment Agreement, the Borough adopted Chapter 11.08 of the Borough Code for operation of the VIF and Village Improvement Commission (VIC); and

WHEREAS: under NABC Section 11.08.020(E), the Borough required in initial allocation of VIF revenue and annual minimum of thirty percent of VIF revenue be contributed to VIF Sustainability Fund for long-term investments to ensure sufficient funds for long-term operation of village services, programs, and capital budgets; and

WHEREAS: the VIF Sustainability Fund has been administered as a separate fund under the same standards as the General Fund Sustainability Fund pursuant to Chapter 6.28 of the Borough Code; and

WHEREAS: the Borough wishes to formally codify the VIF Sustainability Fund's governance standards as set forth in this Ordinance.

NOW THEREFORE BE IT ENACTED: by the Northwest Arctic Borough Assembly as follows:

Section 1: a new section of the Borough Code is added as follows:

6.28.070 Village Improvement Sustainability Fund.

The Village Improvement Sustainability Fund shall be maintained as a separate dedicated fund pursuant to the terms of the Borough's Memorandum of Commitment Agreement with Teck Alaska and Chapter 11.08 of the Borough Code, managed and appropriated under the requirements of this Chapter; however, the contributions shall be made solely pursuant to Section 11.08.020(E) of the Borough Code and the Fund may not be pledged by ordinance to secure debt.

Section 2: This Code Ordinance shall be effective upon adoption.

PASSED AND ADOPTED THIS ___ DAY OF _____ 2026.

_____

Craig McConnell, Assembly President

PASSED AND APPROVED THIS ___ DAY OF _____ 2026.

_____

Dickie Moto, Sr., Mayor

SIGNED AND ATTESTED TO THIS ___ DAY OF _____ 2026.

_____

Stella Atoruk, Borough Clerk **ATTEST:**

First Reading: August 25, 2026

Second Reading: September 22, 2026

Northwest Arctic Borough
P.O. Box 1110 Kotzebue, Alaska 99752 (907) 442-2500
Fax (907) 442-2930
www.nwabor.org

DATE: September 15, 2026

TO: Dickie Moto, Mayor

FROM: Noah Naylor, Planning Director

SUBJECT: **ASSEMBLY DEPARTMENT REPORT THRU THE MAYOR**

Planning Department Monthly Report
Although this past month permit activities have decreased, the level of public involvement has increased.

Permitting

LUX Baird Project Permit Application
The Baird Project is a hard rock mineral exploration project located in the Baird Mountains region of the Western Brooks Range in northwestern Alaska within the Baird Mtn B-4 and C-4 USGS 1:63,360 quadrangles, Kiana Mining District. The project consists of 41 State of Alaska mining claims owned by Lux Copper LLC located in Township 24 North, Range 9 West and Township 24 North, Range 10 West (Kateel River Meridian) (Figure 1).

Exploration activities proposed under this permit will consist primarily of helicopter-supported diamond core drilling to evaluate the presence, extent, and quantity of subsurface copper, lead, zinc, silver, and cobalt mineralization within the claim block.

The proposed permit term is one year with exploration activities expected to occur seasonally between (approximately June 1 and October 15) of each operating year depending on weather and logistics.

I have attached the permit to my report. As well as the caribou reports submitted by Lux Copper.

Brice Nimiuk Point Permit Application
Drafted the Brices's Nimiuk Point Permit Application. Brice is seeking a Northwest Arctic Borough Title 9 permit for gravel extraction and associated winter transportation activities at the Nimiuk Point material source. The project includes mining up to 500,000 cubic yards of gravel, mobilizing heavy equipment by barge through Kotzebue Sound and Hotham Inlet, and constructing a temporary single-winter snow-and-ice haul road connecting Nimiuk Point to the existing Kotzebue-to-Cape Blossom Road (KCB) right-of-way.

During the 2026–2027 fall/winter construction season, gravel would be hauled by heavy equipment along the temporary route and KCB alignment to temporary stockpile and staging areas near Sadie Creek and potentially other locations within the KCB right-of-way. The project also includes temporary staging and stockpile areas, construction crew housing and portable utilities, and temporary fuel storage adjacent to the Nimiuk Point material mine to support mining and hauling operations.

Atautchikin Cultural Resources Field Study Permit Application

Kuna Engineering, LLC. (Kuna), on behalf of Atautchikun, LLC. (Atautchikun), has contracted Stephen R. Braund & Associates (SRB&A) to perform cultural resource field survey and reporting for Atautchikun's proposed fiber optic cable (FOC) route for the Atautchikun LLC's Reconnect 5 Fiber Optic Project (hereafter Project) in the Northwest Arctic Borough (NAB) and Yukon-Koyukuk Census Area of interior Alaska. Atautchikun has been awarded the ReConnect Grant by the US Department of Agriculture (USDA) Rural Utilities Service (RUS) to create infrastructure to provide high-speed internet to rural Huslia in the Yukon-Koyukuk Census Area and connect broadband systems between NAB and interior Alaska.

The Project area is located in the NAB of northwestern Alaska and in the Yukon-Koyukuk Census Area of interior Alaska (Map 1; Table 1). It is located in the following USGS quads: HUGHES B-6, KATEEL RIVER C-1, KATEEL RIVER D-1, SHUNGNAK A-1, SHUNGNAK B-1, SHUNGNAK C-1, SHUNGNAK C-2, SHUNGNAK D-2, and SHUNGNAK D-3. The Project area runs from Shungnak at the eastern end of the Kobuk drainage in northwest Alaska to Huslia and Hughes on the Koyukuk drainage in interior Alaska. As proposed, it will primarily be laid in river valleys between the Selawik National Wildlife Refuge, the Koyukuk National Wildlife Refuge, and the Gates of the Arctic National Park and Preserve. The proposed FOC route for the Project begins at Shungnak and runs east towards the Zane Hills, then forks south to Huslia and continues east to Hughes, totaling approximately 204 miles (mi).

The area of potential effect (APE) for the Project is a 60-foot (ft) (18 meter [m]) wide corridor where installation activities will occur for the length of the proposed FOC alignment. SRB&A's proposed survey area for the Project consists of a 65ft (20m) wide corridor within the recommended field survey sections of the FOC alignment. The 65ft survey area is intended to provide Atautchikun with information along either side of the proposed FOC centerline, thereby accommodating any potential minor changes to the final alignment within the corridor. SRB&A will investigate and evaluate the APE under the criteria of Section 106 of the National Historic Preservation Act (NHPA). SRB&A will conduct the cultural resource survey and subsurface testing of the proposed FOC route during the 2026 field season

Ashlyn Nelson Planning Coordinator

I am please to announce that Ashlyn Nelson has be haired as the Planning Coordinator. She started this summer as an intern and will now be working full time in the Planning Department.

Title 9 Minor Use Permit No.: 110-09-26
Lux Baird Hard Rock Mineral Exploration Project
Expires December 31, 2027

Permit Issued By:

Northwest Arctic Borough, Planning Department
c/o Noah Naylor
PO Box 1110
Kotzebue, AK 99752
Tel 907.442.2500
Fax 907.442.3740
Nnaylor@nwabor.org

Permittee:

Lux Copper LLC
7000 S Yosemite Street, Suite 115
Centennial, Colorado, 80112
Tel 61.488.927736
James.warren@luxcopper.com.au

Permittee Contact Information:

James Warren
7000 S Yosemite Street, Suite 115
Centennial, Colorado, 80112
Tel 61.488.927736
James.warren@luxcopper.com.au

Project Description:

The Baird Project is a hard rock mineral exploration project located in the Baird Mountains region of the Western Brooks Range in northwestern Alaska within the Baird Mtn B-4 and C-4 USGS 1:63,360 quadrangles, Kiana Mining District. The project consists of 41 State of Alaska mining claims owned by Lux Copper LLC located in Township 24 North, Range 9 West and Township 24 North, Range 10 West (Kateel River Meridian) (Figure 1).

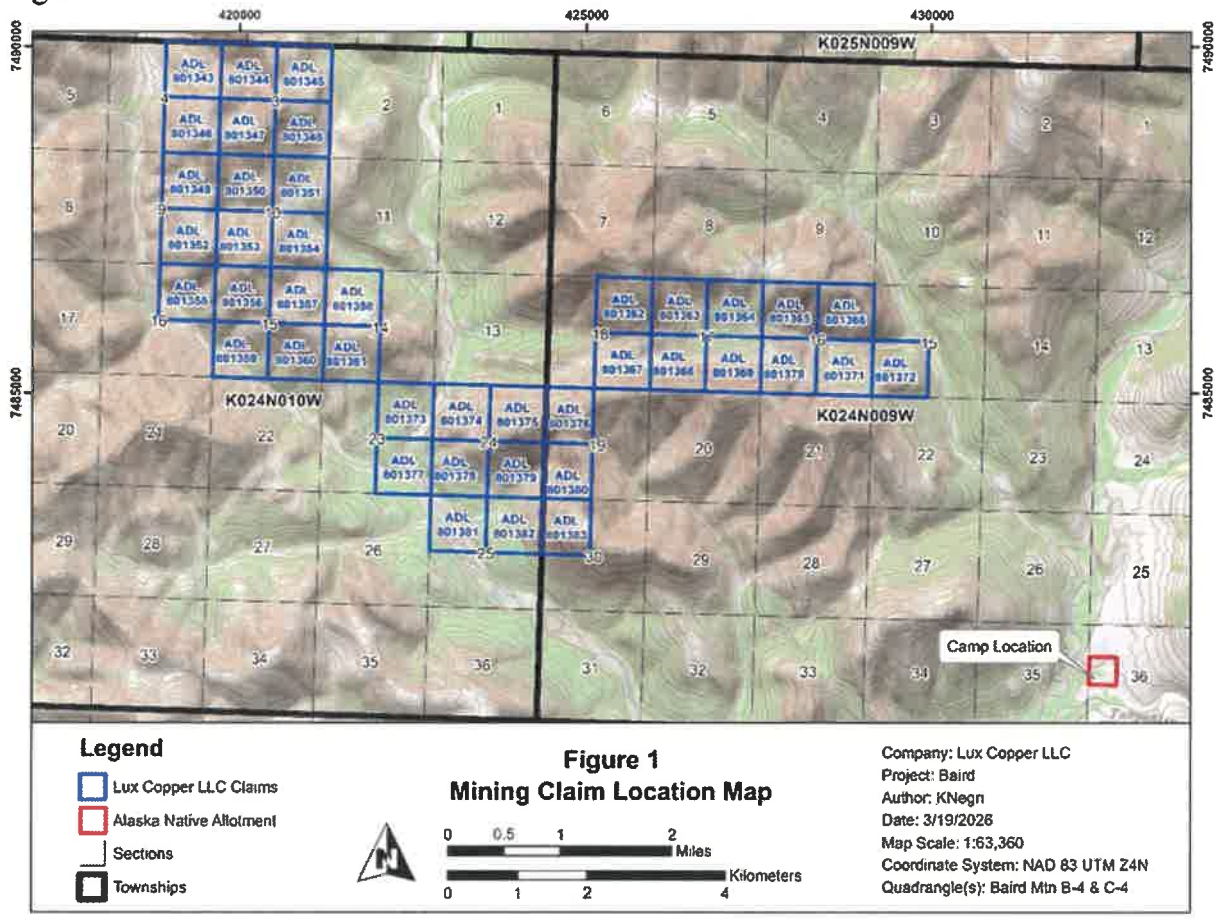
Exploration activities proposed under this permit will consist primarily of helicopter-supported diamond core drilling to evaluate the presence, extent, and quantity of subsurface copper, lead, zinc, silver, and cobalt mineralization within the claim block.

The proposed permit term is one year with exploration activities expected to occur seasonally between (approximately June 1 and October 15) of each operating year depending on weather and logistics.

Project Location:

Township: 24N, Range 009W Section 15,16,17,18,19,30 010W, Section 3,4,9,10,14,15,16,23,24,25 Kateel River Meridian, USGS Map Baird Mtn b-4 & C-4, Kiana, Alaska.

Figure 1



Permit Authorization and Documentation:

The Planning Director has the authority to permit Exploration as a Minor Use Permit in the General Conservation District, pursuant to NABC 9.12.050(B).

State and Federal Permits:

Miscellaneous Land use Permits, Temporary Water Use Authorization from Alaska Department of Natural Resources, Fish Habitat Permits form Alaska Department of Fish and Game, Temporary Camp Permit Alaska Department of Environmental Conservation.

Access to Property and Drill Sites

Access to the Baird Project claim block will occur via helicopter from an established exploration camp located off the claim block on an Alaska Native Allotment. Personnel, drilling equipment, fuel, and supplies will be transported between the camp and drill sites by helicopter.

Exploration crews, equipment, and supplies will first be transported from their point of origin to the village of Kiana, Alaska, where temporary staging will occur prior to mobilization to the exploration camp. From Kiana, personnel and equipment will be transported to the camp by fixed-wing aircraft or helicopter, depending on logistical requirements and seasonal conditions.
Once established, the exploration camp will serve as the primary staging area for personnel, equipment, fuel storage, and exploration support activities associated with the drilling program. Several existing hard-sided structures and an approximately 1,000-foot airstrip are present at the camp and may be used to support exploration logistics.

No new roads or trails will be constructed as part of this exploration program.

Exploration Program and Methods
Exploration drilling at the Baird Project will consist of helicopter-supported diamond core drilling designed to test geologic and geophysical exploration targets across the project area.

Drilling will be conducted using one to two heli-portable diamond core drill rigs (e.g., Boart Longyear LF-series or similar equipment). Holes will be drilled using HQ and NQ diameter steel drill rods. Tops of drill holes will be cased using PQ diameter steel casing.

Up to 30 drill holes per year may be completed during the term of this permit. Drill holes will have a maximum depth of approximately 1000 meters. (Figure 2a & Figure 2b)

Drill Core Handling and Storage
Drill core will be transported by helicopter from drill sites to the exploration camp. At camp, core will be logged and processed in a designated core logging facility. Core cutting and sampling will occur in a dedicated core cutting shack.

Samples collected from the drill core for geochemical analysis will be flown via helicopter or small-fixed wing from the camp to Kiana, Alaska, and subsequently transported via air cargo to a commercial analytical laboratory to undergo sample preparation and analysis.

Drill core will be stored in appropriate core boxes and may be removed from the project area for further analysis or long-term storage.

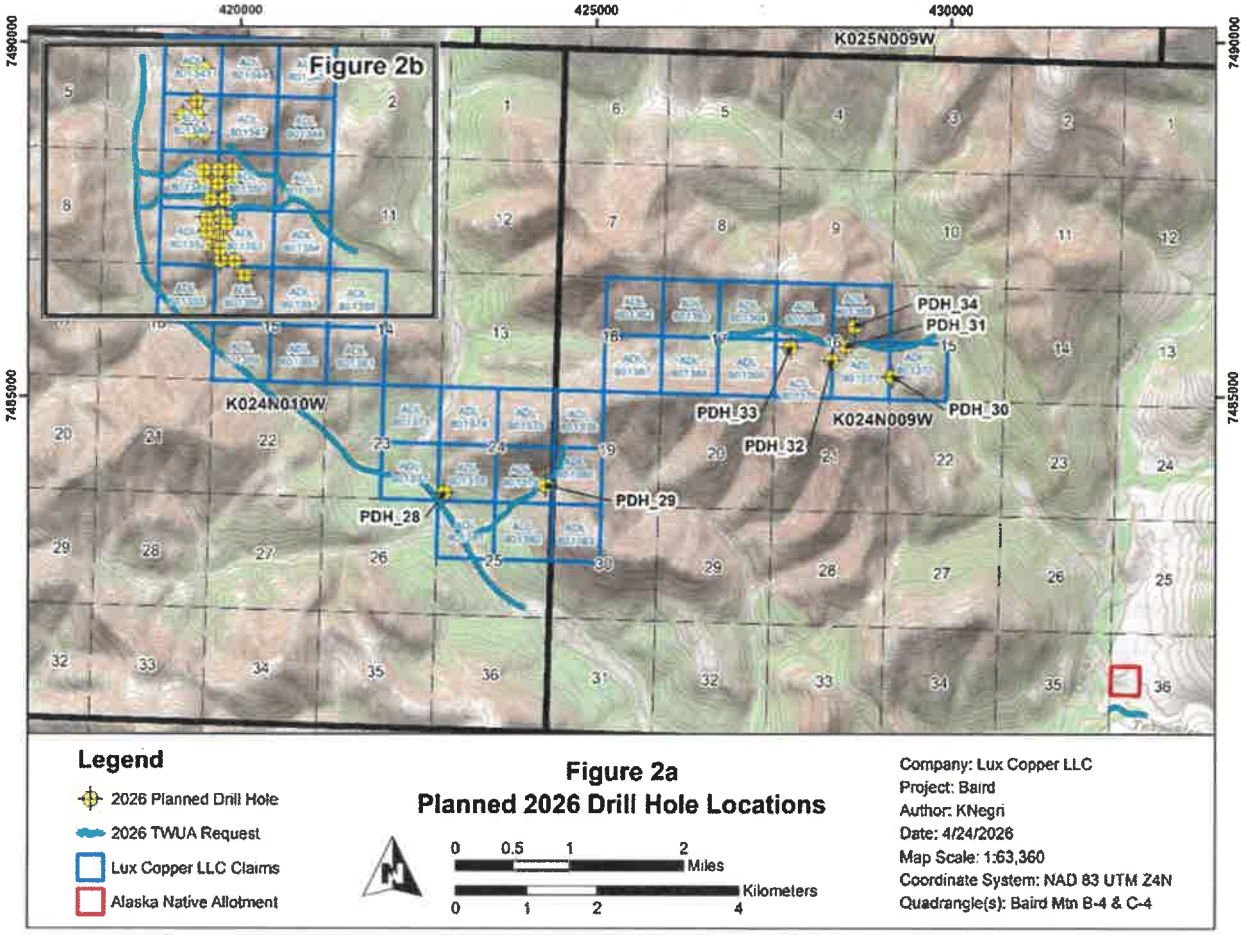
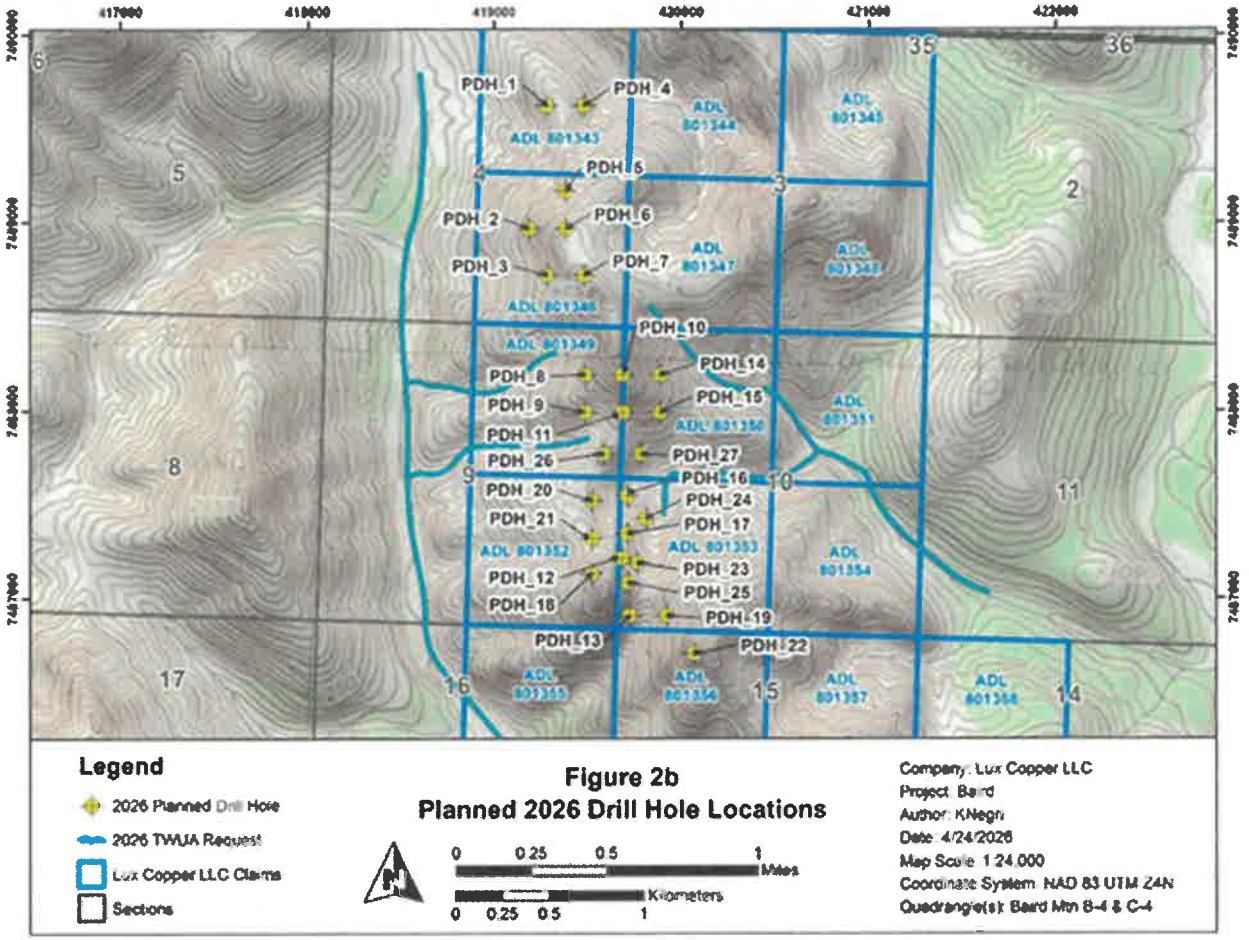


Figure 2a
Planned 2026 Drill Hole Locations

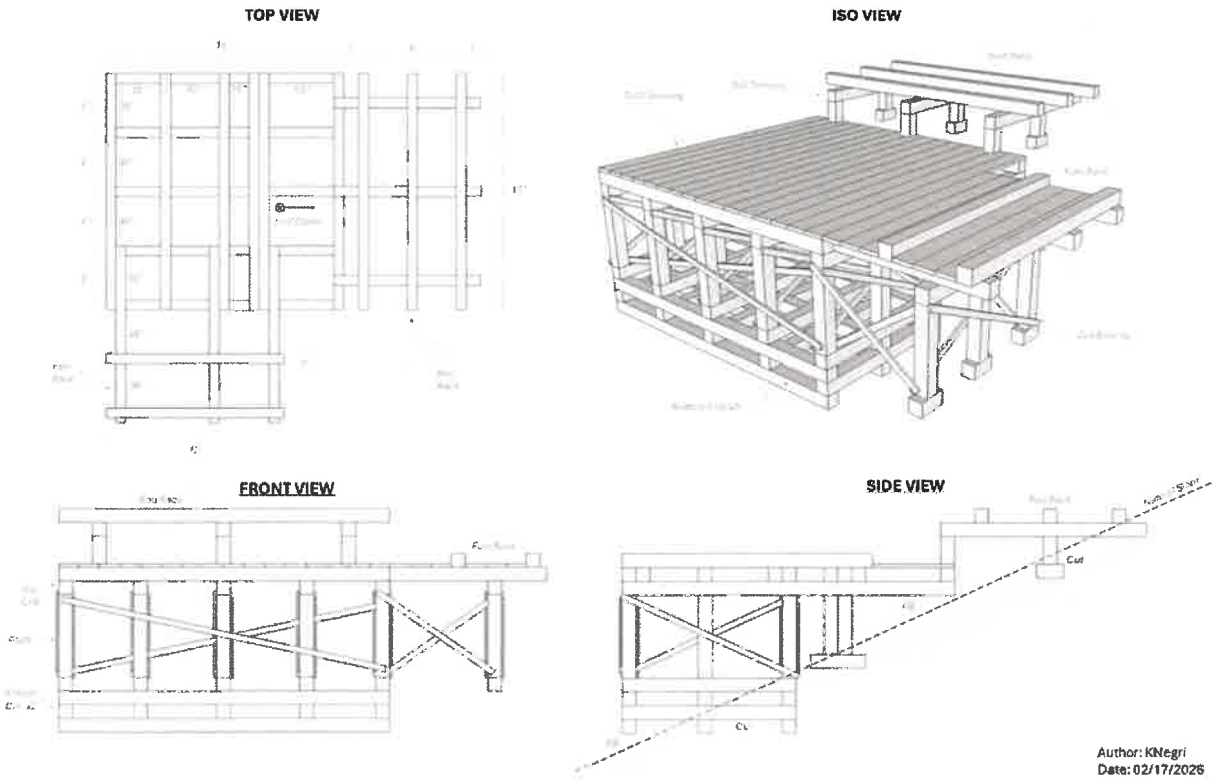


Drill Pad Construction

Temporary drill pads will be constructed using hand and portable power tools out of 8"x8" rough sawn timber posts and beams and 3"x12" rough sawn deck decking. All pad building materials will be transported by helicopter. Typical drill pads will measure approximately 20 feet by 30 feet (approximately 600 square feet). A schematic section of a typical temporary drill pad is provided as an example (Figure 3).

Drill pad locations will be selected to minimize ground disturbance and utilize natural topography where possible. Minor hand excavation and vegetation clearing may occur where necessary to establish safe and stable drilling surfaces.

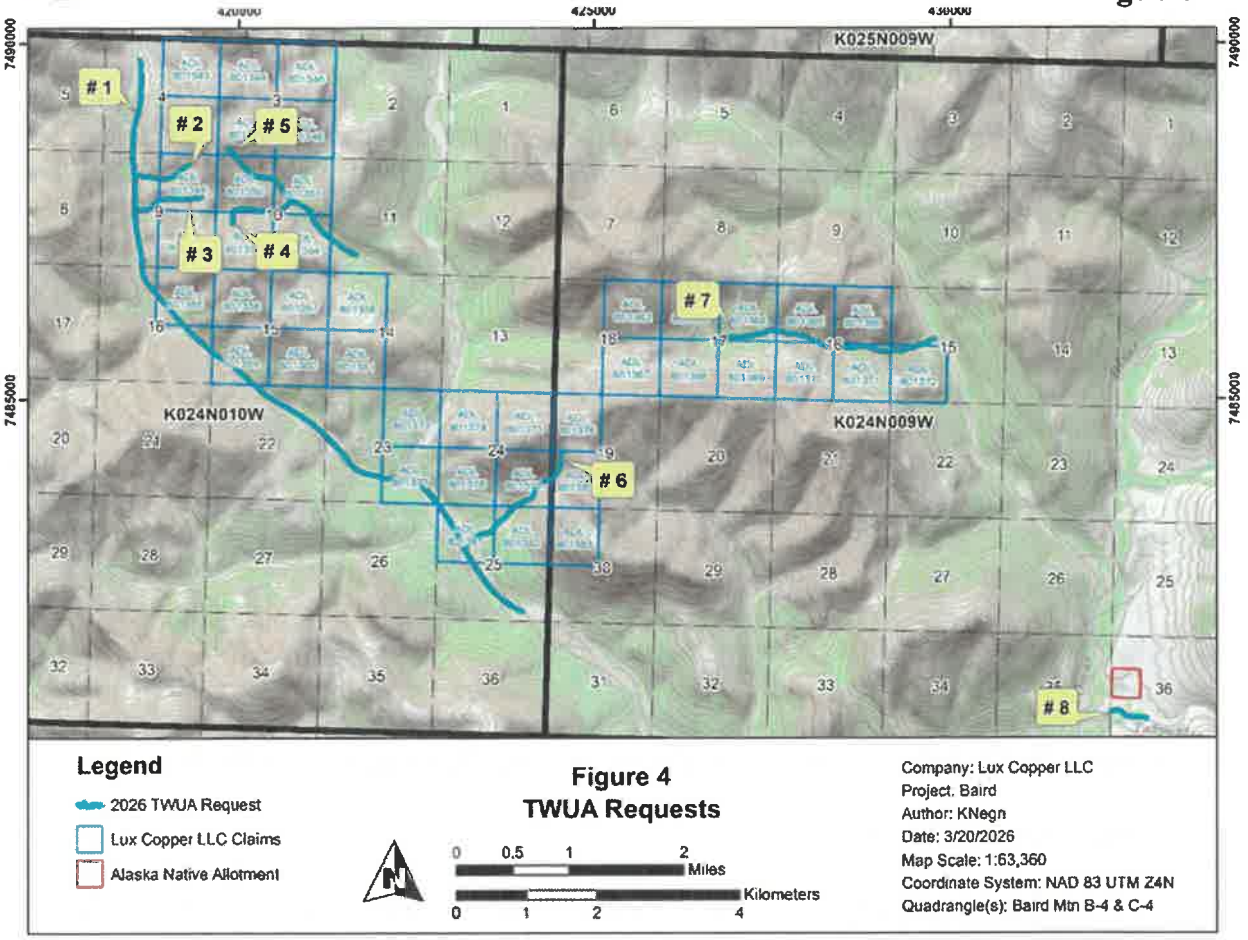
EXAMPLE POST AND BEAM TIMBER DRILL PAD DESIGN SCHEMATIC



Drill Water Management

Water required for drilling operations will be obtained from nearby streams within the project area (Figure 4). Water will be pumped from the point of take using small, portable, diesel-powered pumps with 3" intake, and delivered to the drill site using lengths of 1" hose as required. During drilling operations, pumps will supply water at a rate of 15 gallons per minute (gpm) for up to 24 hours per day, resulting in a maximum daily withdrawal of 21,600 gallons per day (gpd).

Each water intake structure will be centered and enclosed in a screened box designed to prevent fish entrapment, entrainment, or injury. The effective screen opening will not exceed ¼ inch. To reduce fish impingement on screened surfaces, water velocity at the screen water interface will not exceed 0.5 feet per second when the pump is operating.



#	Creek Name	M	T	R	Section(s)	Start - up	Make - up	Use
1	Unnamed Creek	K	024 N	010 W	4, 9, 15, 16, 22, 23, 24 & 25	X	X	Drill supply
2	Unnamed Creek	K	024 N	010 W	9	X	X	Drill supply
3	Unnamed Creek	K	024 N	010 W	9	X	X	Drill supply
4	Unnamed Creek	K	024 N	010 W	10	X	X	Drill supply
5	Unnamed Creek	K	024 N	010 W	3, 10 & 11	X	X	Drill supply
6	Unnamed Creek	K	024 N	009 & 010 W	19, 24 & 25	X	X	Drill supply
7	Unnamed Creek	K	024 N	010 W	15, 16 & 17	X	X	Drill supply
8	Tukpahlearik Cr.	K	024 N	010 W	36	X	X	Camp supply

No borehole drilling water will be allowed to enter streams or wetlands directly, and emergency spill kits and absorbent material will be kept at the drill site. Drilling fluids and additives may include bentonite and biodegradable polymer drilling additives commonly used in diamond core drilling. Material Safety Data Sheets (MSDS) for common drilling additives that may be used during the exploration program are provided as part of the application materials.

Drill Cuttings and Sump Management
Where ground conditions permit, small sumps will be excavated at drill sites to contain drill cuttings and drilling fluids generated during drilling operations. Where sump excavation is not feasible due to terrain or environmental constraints, drill cuttings and drilling fluids will be captured using metal stock tank troughs, polycarbonate fish totes, or similar containment systems.

Upon completion of drilling, captured drill cuttings and muds will be buried on site or dispersed and raked into surrounding soils within several days of drill hole completion to promote natural stabilization and revegetation.

Drill Hole Closure
Upon completion of drilling operations, all drill holes will be properly abandoned in accordance with Alaska Department of Natural Resources Division of Mining, Land, and Water (DMLW) requirements. Drill hole casing will be removed or cut off at or below ground level. Drill holes will be plugged with bentonite hole plug for a minimum of 10 feet within the upper 20 feet of the hole. If water is encountered in any hole, a minimum of 7 feet of bentonite hole plug will be placed immediately above the static water level in the drill hole.

If artesian conditions are encountered, DMLW will be contacted, and the hole will be plugged in accordance with DMLW requirements to prevent uncontrolled groundwater discharge.

Camp Facilities and Personnel
The proposed exploration camp is located off the claim block near the confluence of Omar Creek and Tukpahlearik Creek, approximately 32 miles north of Kiana, Alaska, within Section 36, Township 24 North, Range 9 West, Kateel River Meridian. Coordinates for the camp are N 67.4360°, W 160.5800° (Figure 5).

The proposed camp is located on a 40-Acre Alaska Native Allotment (U.S. Survey No. 12416). The applicant is in the process of securing an agreement with the property owner authorizing use of the site for exploration support activities. If no such agreement can be negotiated, an alternative camp location will be identified and permitted separately from this application.

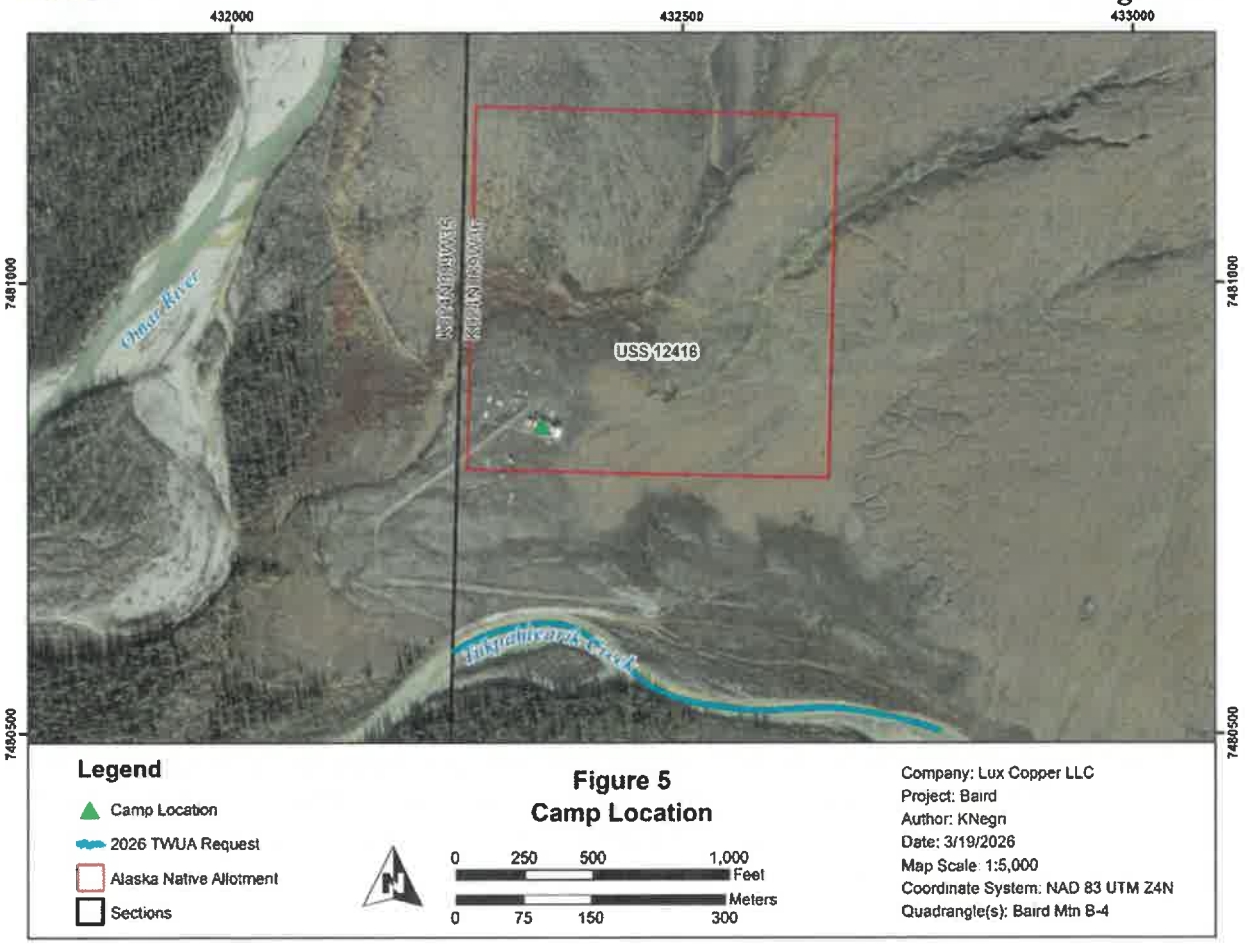


Figure 5
Camp Location

The exploration camp will support drilling operations and associated exploration activities. The maximum number of personnel present at the camp at any given time will be 25 workers.

All structures will be temporary. Temporary camp structures will consist primarily of tents and Weatherport-style structures including sleeping quarters, administrative facilities, and core processing areas. Tent skins and frames will be dismantled each season and stored at the camp location for subsequent seasons' use. Following the completion of the exploration project, tent platforms will be dismantled, and all materials and temporary camp structures will be removed from site.

Camp facilities may include:

Structure	Quantity	Approximate Dimensions	Purpose
Sleeping tents	Up to 25	~10 ft × 10 ft (or up to 13 tents at 10 ft × 20 ft)	Personnel sleeping quarters
Office tent	1	~10 ft × 20 ft	Camp administration
Dry facility	1	~10 ft × 20 ft	Drying wet gear

Structure	Quantity	Approximate Dimensions	Purpose
Washateria	1	~10 ft × 20 ft	Showers and laundry
Kitchen / mess hall	1	~20 ft × 40 ft	Meal preparation and dining
Core logging tent	1	~20 ft × 40 ft	Core logging and processing
Core cutting shack	1	~10 ft × 10 ft	Core cutting operations

Waste Management
Human waste will be managed using an existing outhouse facility located at the exploration camp. Portable toilets will be utilized at active drill sites; human waste from active drill sites will be transported to camp for disposal.

Greywater generated by camp operations will be managed in accordance with the terms and conditions of the applicable Alaska Department of Environmental Conservation small camp permit, including approved surface discharge practices.

Burnable solid waste generated at the camp will be incinerated on site, while non-burnable waste will be segregated and transported off site by aircraft for proper disposal at approved facilities.

Fuel Storage and Handling
Fuel used for exploration activities will consist primarily of aviation fuel (Jet-A) and ultra-low sulfur diesel (ULSD). Fuel will be obtained from commercial facilities in Kotzebue, or from nearby communities if available. Bulk fuel will be transported from commercial facilities to the camp staging area by helicopter.

Fuel storage at the camp staging area will consist of 55-gallon drums and a 1,000-gallon fuel bladder system. Total fuel storage at the camp will not exceed 1,320 gallons at any given time. Fuel storage areas will be located within lined secondary containment capable of holding at least 110 percent of the largest container volume.

Fuel required for drilling operations will be transported to drill sites by helicopter in 55-gallon drums or approximately 110-gallon flyable fuel tanks. Typical maximum fuel storage at individual drill sites will be 220 gallons or less.

Fuel storage areas at drill sites will be located a minimum of 100 feet from any water body and will include secondary containment capable of holding at least 110 percent of the largest container volume. Spill kits and absorbent materials will be maintained at each drill site where fuel is stored or handled.

Small quantities of gasoline may be temporarily staged at drill sites as necessary for operation of gasoline-powered hand tools (e.g., chainsaws).

Spill Prevention and Response
Exploration personnel will follow established spill prevention procedures to minimize the potential for fuel or petroleum releases.

Preventative measures will include:

- Regular inspection of fuel containers, pumps, and hoses
- Use of drip pans or absorbent materials when fueling equipment
- Immediate cleanup of minor spills or leaks
- Proper storage and labeling of petroleum products

Spill response materials such as absorbent pads, containment booms, and spill kits will be maintained at the exploration camp and at drill sites where fuel is handled.

In the unlikely event of a spill, the operator will stop the source of the release, contain the spill, recover contaminated materials, and notify the Alaska Department of Environmental Conservation as required by state regulations.

Protection of Water Resources

Exploration activities will be conducted in a manner designed to minimize disturbance to streams, wetlands, and other water resources.

Drill sites will be located away from water bodies where practicable, and drill cuttings and fluids will be contained to prevent discharge into nearby surface waters.

Pump intakes used for water withdrawal will be screened where appropriate to prevent entrainment of aquatic organisms.

The project will not affect any wetlands. Investigation of satellite imagery and National Wetlands Inventory suggests proposed 2026 drill sites are located entirely in uplands. To the best of the applicant's knowledge, no independent wetland delineation has been conducted on the project. The project will operate under the general conditions of U.S. Army Corps of Engineers Nationwide Permit 6 for Survey Activities.

Wildlife and Cultural Impact Mitigation

Exploration activities will be conducted in a manner that minimizes disturbance to wildlife and wildlife habitat.

Personnel will avoid harassment of wildlife encountered during exploration activities. Food and waste materials will be stored and managed to avoid attracting wildlife to drill sites and camp. According to the Anadromous Waters Catalogue published by ADF&G, there are no anadromous streams within the project area. The Omar River is classified as anadromous approximately 4 river miles below the confluence with Tukpahlearik Creek, beginning in Section 9, Township 023 N, Range 009 W, Kateel River Meridian.

In accordance with Alaska Historic Preservation Act (AS41.35), the Alaska Office of History and Archaeology (OHA) will be notified if any previously undiscovered historic, prehistoric, or archaeological resources are identified. Any such sites will be avoided by relocating the exploration drill site. To the best of the applicant's knowledge, no cultural resource surveys have been conducted in the project area, and there are no known culture resources on the property.

Reclamation

Exploration activities at the Baird Project will be conducted in a manner that minimizes surface disturbance and facilitates natural reclamation in accordance with AS 27.19 and applicable regulations under 11 AAC 97. Reclamation will be conducted concurrently with exploration activities.

Following completion of drilling activities, all drill equipment, supplies, fuel containers, and other materials will be removed from drill sites and the project area unless otherwise authorized. Drill pads and other minor disturbances will be reclaimed by recontouring disturbed ground where necessary and redistributing organic material and vegetation to promote natural revegetation.

Drill holes will be properly plugged and abandoned in accordance with DMLW requirements. Drill hole casing will be removed or cut off at or below ground level and the upper portion of the hole will be sealed using bentonite grout or other approved sealing material.

Drill cuttings and drilling fluids will be contained within sumps or other containment systems during drilling operations and will be buried, dispersed, or otherwise stabilized upon completion of drilling to prevent erosion and promote natural revegetation.
The objective of reclamation will be to return disturbed areas to a stable condition that is consistent with surrounding terrain and allows for natural revegetation and reestablishment of wildlife habitat.

Permit Approval

Permit Terms and Conditions:

The Northwest Arctic Borough permit is hereby GRANTED.

1. Lux shall comply with the terms of the permission, permits and/or agreements granted by the federal government, State of Alaska, NANA, Northwest Arctic Borough, and other applicable agencies.

2. Lux shall comply with any and all applicable local, borough, state, and federal laws. Failure to abide by any part of this permit, or violations of any pertinent borough ordinances or state or federal law or regulation, will be considered grounds for revocation of the permit or denial of future permit requests and may result in issuance of fines or other penalties. This provision applies to all persons working under the authority of this permit.

3. The Permittee is responsible for ensuring that all employees, contractors, subcontractors, agents, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

4. Native allotments and camp sites may exist in the area, and Lux shall ensure that staff/personnel/contractors do not trespass on these areas.

5. Lux recognizes that project activities are close to the community of Kiana, and that adequate notice prior to arrival in the area is important. As such, the Lux Project Manager shall provide written notice to both the Northwest Arctic Borough – Planning Department, City of Kiana, and the Kiana Traditional Council at least 30 calendar days prior to their first arrival into the area and/or community to begin the project.

6. During summer-fall mineral development activities, Lux shall provide monthly activity reports to the Northwest Arctic Borough Planning Department. In addition, Lux shall provide monthly activities reports directly to the City of Kiana and the Kiana Traditional Council at the regularly scheduled meetings of those bodies or at a public meeting in Kiana.

7. Permittee and its subcontractors are encouraged which provide local employment in the community of Kiana.

8. A cash bond or other surety satisfactory to the Borough shall be posted to assure performance under this permit in an aggregate amount equal to one hundred percent (100%) of the cost of any reclamation or mitigation required under this permit, inclusive of any state or federally required surety as provided under 9.25.020(U) of the Borough Code. Evidence of the existence of sufficient surety filed with another governmental entity may be accepted as a means of surety that fulfills this requirement.

9. Mining development is required to be sited, designed, constructed, and operated in a manner that does not substantially interfere with the use of a site that is important for significant cultural uses or essential for transportation to subsistence use areas.

10. Lux shall progressively restrict and then cease operations as migrating caribou approach any area where it is operating under this Permit, in accordance with the tiered trigger and response distances set out in its Cultural and Environmental Management Policy attached and incorporated as Exhibit A to this permit.[1] The Planning Director may also request Lux to cease operations in order to not interfere with caribou herds and/or migrations. Lux will report all incidents of caribou migration in the project vicinity and dates/times of ceased operations for allowing migration of caribou to the Borough Planning Department as soon as possible.

As a general guideline, caribou migration means an area where15 to 20 or more caribou are travelling or congregating. However, during the seasonal fall period of mid-August through mid-November, Lux shall take extra precautions to avoid deflecting even small numbers (e.g. group sizes of 5-10) of the first caribou moving through the area as these groups/bands set trails

[1] The *Cultural and Environmental Management Policy* is a voluntary agreement that Lux entered into with the Native Village of Kiana and City of Kiana. Neither the Native Village of Kiana nor the City of Kiana has jurisdiction or permitting authority for Lux's activities approved under this permit; however, Lux has requested that the terms of the *Cultural and Environmental Management Policy* be incorporated and referenced in this permit. The Planning Department has accepted this request and the *Cultural and Environmental Management Policy* is hereby incorporated as an additional condition.

as "lead caribou" that subsequent caribou follow during the migration. The intent of these guidelines are to ensure free passage of caribou through the area and to avoid impacting caribou and the communities that historically and currently depend upon it as well as preserving existing and important adjacent land uses. These guidelines may be revised based upon updated information and research (including local traditional knowledge).

11. Lux shall not, during the migration of caribou, locate any operation so as to block or cause diversion of the migration of caribou, and shall cease any activity that may interfere with the migration, such as airborne transports, airborne surveys, or movement of equipment, until such time as the migration has been completed.

12. All project activities shall utilize measures to avoid or minimize disrupting wildlife and bird migration, or subsistence activities including fishing, trapping, waterfowl hunting, egg gathering, berry picking, and caribou hunting. The applicant will ensure reasonable access to subsistence users to subsistence resources.

13. All air (helicopter and airplane) traffic and ground transportation measures shall utilize measures to avoid disrupting wildlife and bird migration or subsistence activities by, as safety permits, flying around spotted herds or flocks, flying at altitudes high enough to reduce noise and disturbance, limiting the numbers of flights per day or temporarily suspending operations.

To minimize disturbance to wildlife during air transport, it is recommended that all aircraft maintain a minimum altitude of two thousand (2,000) feet above ground level except as required for takeoff, landing, emergency, and/or weather. Take off, landing, and transport drop offs should avoid proximity to a migrating caribou herd and especially to avoid interdicting the lead of a caribou herd. From September 1 to November 1, caribou migration and subsistence activities occur in the North Fork-Omar River Subsistence Sub District. Lux shall minimize the number of helicopter flight to reduce disturbance. This condition shall be reviewed to assess the helicopter transport activities at the end of year annually as well as to review the dates of helicopter operation and impacts to the Subsistence Sub-District.

All equipment and vehicles are to be maintained to eliminate or minimize any excessive noise. Equipment and vehicles must be monitored and shall be inspected daily for functioning sound suppression.

The Administrator may impose specific requirements as circumstances may warrant.

14. All aircraft transportation shall avoid areas where species that are sensitive to noise or movement are concentrated. The operations shall use horizontal and/or vertical buffers as appropriate, while ensuring human safety.

15. All vehicles shall be operated in a manner such that the vegetative mat of the tundra is not disturbed. Vehicles shall not be abandoned. Vehicles must avoid areas where species that are sensitive to noise or movement are concentrated.

16. All project activities shall utilize measures to minimize noise and nuisance affecting surrounding residential properties including excessive noise, fumes, odors, glare, smoke, vibration, dust, litter, interference in any telephone, radio, or television receivers, and/or significant line voltage fluctuation. To minimize transport disturbance to surrounding properties, it is recommended that aircraft maintain a minimum altitude of five hundred (500) feet in the vicinity of such properties unless required by weather, emergencies, or if taking off or landing.

17. All trash and human waste generated at the property must be properly disposed in accordance with Northwest Arctic Borough Ordinance 9.25.020(M), establishing standards disposal of refuse, human body waste, and chemicals. All remedial activities shall comply with any and all other applicable state and federal laws, including all applicable hazardous waste and disposal requirements, all waste disposal and landfill requirements, and all open burning and air quality standards.

18. During and after drilling, the applicant must conduct activities in a manner to maintain natural drainage pattern, watershed protection, and permafrost stability, to prevent runoff and erosion into water supplies and to minimize alteration of vegetation.

19. Drilling and water usage activities shall be designed and conducted in a manner to minimize or eliminate siltation, surface runoff, and pollution of the creeks and streams.

20. Water intake for all project activities, including but not limited to the camp and drilling purposes, shall be centered and enclosed in a screened box designed to prevent fish entrapment, entrainment, or injury. The effective screen opening shall not exceed ¼ inch. To reduce fish impingement on screened surfaces, water velocity at the screen/water interface shall not exceed 0.5 feet per second when the pump is operating.

21. Uses permitted shall cease upon the discovery of archaeological, prehistoric, historic, or cultural resources during the construction activities, and Lux shall immediately contact the Planning Department and the State Historic Preservation Office to determine the conditions to continue.

22. Drilling activities within floodplains shall maintain buffers between active channels and the work area, avoid in-stream work, permanent channel shifts, and ponding of water, clearing of riparian vegetation, and disturbance to natural banks.

23. All fuel/oil/hazardous substance storage, including waste oil, must meet all applicable state and federal containment laws. Any project fuel storage at the airstrips, camp and drill hole sites shall meet all applicable state and federal containment laws to prevent fuel spills and protect against fire danger. Appropriate spill kits and absorbent pads must be stored at the airstrips, camp, and drill hole sites. Fuel/oil drums and storage containers shall not be abandoned.

If a spill occurs, it must be reported immediately to the Alaska Department of Environmental Conservation. For oil spills or other chemical spills, the permittee shall notify the Borough (both the planning department deputy director and local emergency planning committee staff contact) of any spill that must be reported under any State of Alaska or federal law or regulation.

24. Project equipment/vehicle servicing and fueling operations are prohibited within 100 feet of any surface water body, including any rivers, drainage channels, sloughs, and lakes.

Equipment and vehicles are to be maintained to eliminate or minimize any fuel spills and fluid leaks. Equipment and vehicles must be monitored prior to use for hydraulic leaks. If equipment is in continuous use, it shall be inspected daily for hydraulic leaks.

Project equipment shall not be abandoned.

25. Lux shall notify the borough within seven (7) calendar days of any damage to the tundra due to project activities that are inconsistent with state and federal permits and in excess of those identified in or different from those noted in the Borough title 9 permit application and/or officially accepted amendments associated with this permit. This includes, but is not limited to, the scraping of vegetation and spill of oil or other chemicals.

26. Lux shall immediately notify the borough (at least within 24 hours) of any change in the project plans and seek modification of the permit. The permittee shall suspend uses until approval is given by the Planning Director. If the proposed action(s) constitutes an emergency, the permittee shall comply with 9.16.040 for emergency actions and shall make reasonable efforts to conduct modified uses in a manner that avoids or minimizes significant harm to the environment, consistent with the need to protect property and human life.

27. At the completion of each drilling/mining season and overall completion of the project, erosion control measures shall be utilized to stabilize the drill hole sites. At a minimum, all disturbed areas must be re-graded to stable slopes that blend with the natural topography, maintain natural drainage, promote safety, and otherwise mitigate the effects of drilling. Within mean annual flood lines, re-grading to ground contours which will not entrap fish and not significantly alter the river/stream hydraulics will occur at the end of each operating season.

28. Lux is subject to all penalties and civil actions pursuant to Section 9.08.240 of the Borough Code for violation of the permit conditions and stipulations prescribed herein.

29. Annually by December 31st and at the overall completion of the project, the permittee shall file a written report with the NWAB Planning Department describing the following:

a. GPS coordinates of mineral development and drill sites.
b. complete report of any fuel or other hazardous substances discharges and clean-up activities completed.
c. description of any reclamation including photographs and the location of any artesian aquifers if encountered.
d. report the incidents of caribou migration and dates/times of ceased operations for allowing migration of caribou.
e. report of the number of helicopter transports from 9/1 to 11/1.
f. copies of environmental and/or wildlife studies.
g. other matters as reasonably required by the NWAB Planning Director.

30. Lux shall allow NWAB authorized personnel and the Borough's agents access to the permitted sites and properties without interference, both during the term of this permit or within 5 years after permit expiration, to conduct scheduled or unscheduled inspections or tests to determine compliance with this permit or respond to emergency situations.

31. In addition to ongoing cleanup and remediation requirements, at the overall completion of the project, Lux shall properly reclaim and complete site closure including any reclamation of drill, staging, landing and camp sites. This shall include removal of fuel, structures, equipment, and supplies; and shall not abandon any fuel, vehicles, camp buildings, and/or structures.

32. Nothing in the permit shall prevent processing of any future applications for similar activities as a use or conditional use permit.

33. At the conclusion of each season the Borough Planning Department shall evaluate the effectiveness of the permit conditions. Each season the Borough Planning Department & Planning Commission shall review the effectiveness of conditions #10 and #13 of this permit. The Title 9 Administrator shall be authorized to adopt corrective measures for ineffective or inadequate permit conditions. The Administrator may also review and impose additional conditions to as appropriate and/or necessary.

34. The Borough planning director, through the Title 9 Administrator under provision of NABC 9.12, proposes to issue this permit for period ending on December 31, 2027. Issuance of this permit under these terms shall require submission of annual permit fees and annual reviews for compliance with the permit terms and conditions. This permit shall expire on December 31, 2027, unless revoked by the Title 9 Administrator and/or Lux Copper LLC

Attached and incorporate: *Cultural and Environmental Management Policy*

NORTHWEST ARCTIC BOROUGH

Dickie Moto,
Mayor

September 8, 2026
Date

CC: Native Village of Kiana, City of Kiana, NANA Regional Corporation, Maniilaq Association

Posted at: www.nwabor.org

Caribou Spotter Flight Report

Baird Project | Lux Copper LLC | Kiana, Alaska

Flight of Sunday, 30 August 2026

Flight details

Date	Sunday, 30 August 2026	**Spotter name**	-
Time off	18:05 AKDT or earlier	**Time on**	19:11 AKDT, Kiana (PAIK)
Aircraft / operator	Piper Cherokee, N31736	**Pilot**	Lee “Big Boy” Staheli
Area flown	Baird Mountains north of Kiana — the claim block and Omar River drainage, north to the Noatak River divide, returning down the Nakolik River and North Fork Squirrel River. See Figure 1.		
Weather / visibility	Clear VFR: scattered to broken cumulus above the terrain flown, sunshine and long visibility, with isolated showers over distant ranges to the north (assessed from the flight photographs).		

Time off is “18:05 or earlier”: the GPS track begins with the aircraft already airborne 4.7 mi north of Kiana. All times Alaska Daylight Time (AKDT).

Survey coverage

Survey effort	1 h 05 min recorded on track, 148 miles flown.
Distance from camp	From overhead camp out to 32 miles north of camp at the northern limit (18:34). Camp lies 32 miles north of Kiana.
Claim block and camps	Track crossed the Baird Project claim block for 2.5 miles at 18:51–18:52 and overflew both camps at 18:17–18:21, closest approach about 750 ft.
Noatak National Preserve	Inside the mapped preserve boundary 18:27–18:45 (18 min, 42 miles). Boundary indicative only.

Caribou observed

Time	Number	Direction of travel	Location / distance from camp	Moving together or scattered
NONE — no caribou observed on this flight				

Photograph 3 (18:35:55, 30 miles from camp) shows well-developed game trails etched across open tundra with no animals on them. Nothing else in the photographs or the GPS track records wildlife.

Predators and other aircraft

Time	What was seen	Location	Effect on caribou, if any
NONE — no predators, other aircraft, boats or snowmachines seen			

Disturbance observed

Did caribou change behaviour?	No — no caribou were observed
If yes, describe	Not applicable
Suspected cause	Not applicable

Sources: flight track from a Garmin GPSMAP 65s (972 fixes). Photograph positions from EXIF timestamps matched to the track, all within 10 s of a recorded fix. Claim block and camps from the supplied shapefiles (Alaska DNR active state claims; Camps). The Noatak National Preserve boundary is indicative and should be confirmed against an authoritative land-status source.

Figure 1 — Area surveyed for caribou

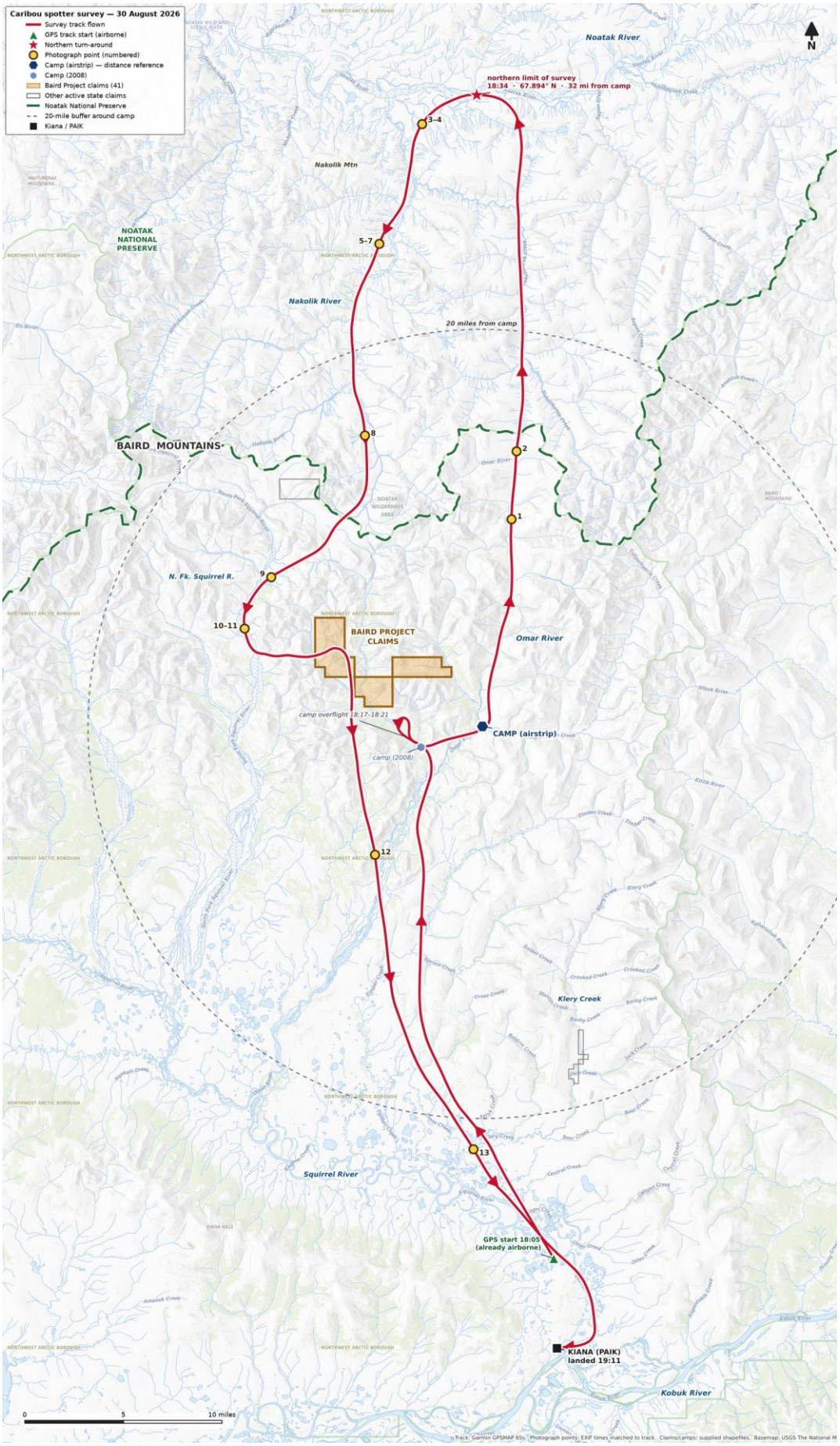


Figure 1. Caribou spotter survey of Sunday, 30 August 2026. Track flown, the 41-claim Baird Project block, both camps, and the position of every photograph (numbered, from EXIF times matched to the track). The dashed circle is a 20-mile buffer around the airstrip camp.

Photograph log

Thirteen photographs, timed 18:25–19:02 AKDT and located on the track (Figure 1). No caribou or other wildlife appears in any of them.



1 · 18:25:21 · 11 mi from camp
67.5874 N, 160.5244 W
Tundra ridges and valley; snow-dusted crest on the skyline.



2 · 18:26:48 · 14 mi from camp
67.6366 N, 160.5146 W
Broad tundra uplands under broken cumulus.



3 · 18:35:55 · 30 mi from camp
67.8740 N, 160.6938 W
Well-developed game trails etched across open tundra — no animals on them.



4 · 18:35:58 · 30 mi from camp
67.8726 N, 160.6964 W
Tundra flats and meandering creek; shower over the ranges beyond.



5 · 18:38:47 · 25 mi from camp
67.7884 N, 160.7755 W
Dark cliff-banded summit with talus aprons above tundra.



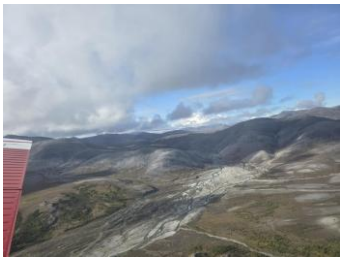
6 · 18:38:49 · 25 mi from camp
67.7874 N, 160.7765 W
Grey ridge crest with cliff bands and extensive scree.



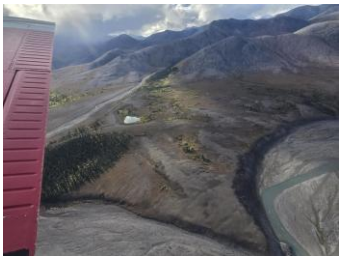
7 · 18:38:53 · 25 mi from camp
67.7853 N, 160.7784 W
Bedded cliff exposures and structural benches above tundra slopes.



8 · 18:43:24 · 16 mi from camp
67.6483 N, 160.8042 W
Fresh-snow-covered peak above a broad valley.



9 · 18:47:39 · 13 mi from camp
67.5450 N, 160.9838 W
Braided river valley with gravel bars, looking down-valley.



10 · 18:48:52 · 13 mi from camp
67.5084 N, 161.0346 W
Braided channel and gravel bars; small pond left of centre.



11 · 18:48:55 · 13 mi from camp
67.5066 N, 161.0339 W
Ridge crest and valley beyond the wing.



12 · 18:56:03 · 8 mi from camp
67.3417 N, 160.7852 W
Braided river in a spruce-forested valley.



13 · 19:02:37 · 22 mi from camp
67.1242 N, 160.5970 W
Low over tundra lakes and ponds; distant ranges.

Caribou Spotter Flight Report

Baird Project | Lux Copper LLC | Kiana, Alaska

Flight of Monday, 31 August 2026

Flight details

Date	Monday, 31 August 2026	**Spotter names**	Delbert Wells, Duffy Minks, Teddy Reed
Time off	13:17 AKDT, Kiana (PAIK)	**Time on**	15:12 AKDT, Kiana (PAIK)
Aircraft / operator	Piper Cherokee, N31736	**Pilot**	Lee “Big Boy” Staheli
Area flown	North-east from Kiana up the Squirrel River, then the Kallarichuk and Salmon River drainages to the upper Noatak River; west along the Noatak corridor; return south-east down the Nakolik and Omar River drainages past camp to Kiana. See Figure 1.		
Weather / visibility	Overcast throughout, with cloud down on the ridge tops and mist across the higher ground. Downward visibility over open tundra remained workable, but the ceiling forced the aircraft low on the western leg. The survey was turned back for weather at both the north-east and western limits and did not reach its intended extent.		

Survey coverage

Survey effort	1 h 54 min on track, 258 miles flown.
Distance from camp	From overhead camp out to 61 miles at the north-east limit (14:00).
Weather limitation	Turned back for weather at the north-east limit (14:00) and again at the western limit (14:30). The planned extent was not reached, and coverage north and west of those turn-backs is nil.
Ground searched	About 257 sq mi lies within half a mile of the track and 508 sq mi within one mile — roughly 5% and 10% of the area enclosed by the route. The result therefore records no caribou along the route flown; it is not a survey of the wider area.
Claim block and camps	The track did not cross the Baird Project claim block on this flight. It passed the airstrip camp at 14:55, about 588 ft to the side.
Noatak National Preserve	Inside the mapped preserve boundary 13:49–14:47 (138 miles, 54% of the distance flown). Boundary indicative only.

Caribou observed

Time	Number	Direction of travel	Location / distance from camp	Moving together or scattered
NONE — no caribou observed on this flight				

No caribou appear in any of the 15 photographs. Note the weather limitation and the ground actually searched, above, when relying on this result.

Predators and other aircraft

Time	What was seen	Location	Effect on caribou, if any
Not recorded	Bears — reported by the spotters; number not recorded	Not recorded beyond “up north”. The northern part of the survey lay between 68.0° and 68.2° N on the Noatak River corridor, 13:49–14:47.	Not applicable — no caribou observed

Time	What was seen	Location	Effect on caribou, if any

The bear sighting is recorded as reported. Time, number and position were not noted at the time and cannot be recovered from the GPS track or the photographs; the spotters should add them if they can.

Disturbance observed

Did caribou change behaviour?	No — no caribou were observed
If yes, describe	Not applicable
Suspected cause	Not applicable

Sources: flight track from a Garmin GPSMAP 65s (1524 fixes, full flight from wheels-up to landing). Photograph positions from EXIF timestamps matched to the track, all within 13 s of a recorded fix. Claim block and camps from the supplied shapefiles. The Noatak National Preserve boundary is indicative and should be confirmed against an authoritative land-status source.

Figure 1 — Area surveyed for caribou

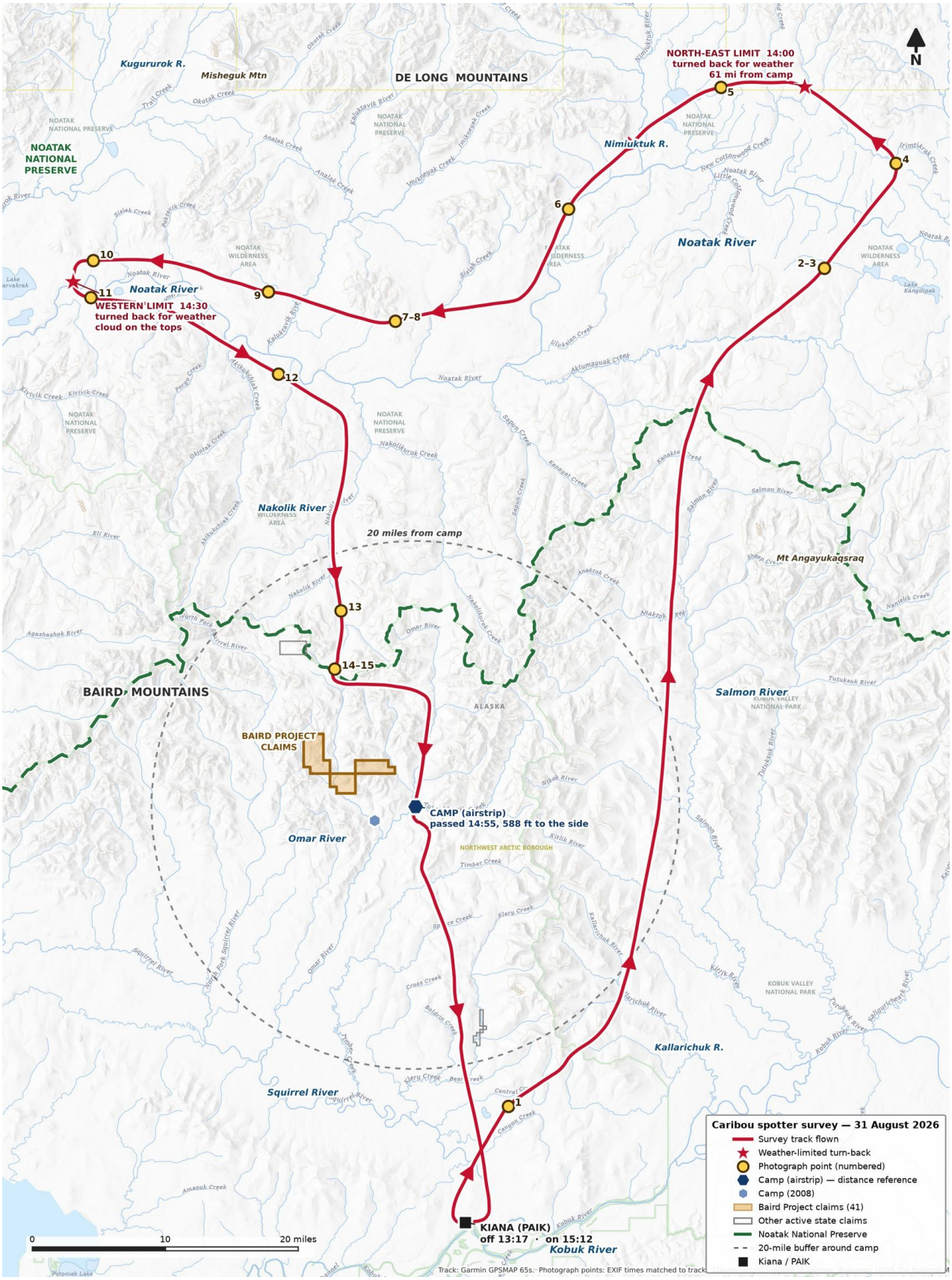


Figure 1. Caribou spotter survey of Monday, 31 August 2026. Track flown, the two weather-limited turn-backs, the Baird Project claim block, both camps, and the position of every photograph (numbered, from EXIF times matched to the track). The dashed circle is a 20-mile buffer around the airstrip camp.

Photograph log

Fifteen photographs, timed 13:25–14:47 AKDT and located on the track (Figure 1). No caribou or other wildlife appears in any of them; the reported bears were not photographed. The sequence documents the cloud that ended the survey.

 **1 · 13:25:37 · 24 mi from camp** 67.1056 N, 160.3157 W Climb-out over tundra uplands north-east of Kiana; high overcast.	 **2 · 13:54:19 · 50 mi from camp** 68.0181 N, 159.4146 W Open tundra and thaw lakes approaching the upper Noatak; flat overcast.	 **3 · 13:54:21 · 51 mi from camp** 68.0192 N, 159.4124 W Chain of tundra lakes, same position; good downward visibility.
 **4 · 13:57:58 · 60 mi from camp** 68.1304 N, 159.2089 W Tundra basin with lakes near the north-east limit.	 **5 · 14:04:30 · 58 mi from camp** 68.2109 N, 159.7089 W North-east limit; broad tundra with cloud lowering over distant ground.	 **6 · 14:10:45 · 46 mi from camp** 68.0817 N, 160.1436 W Cloud down on the ridges, valley in shadow — turning west beneath the weather.
 **7 · 14:18:22 · 36 mi from camp** 67.9623 N, 160.6357 W Ridge crest capped by cloud, old snow patches.	 **8 · 14:18:25 · 36 mi from camp** 67.9619 N, 160.6399 W Same ridge; cloud base resting on the slope.	 **9 · 14:22:27 · 40 mi from camp** 67.9935 N, 161.0011 W Tundra bench and lake with the Noatak hills behind; visibility improving.
 **10 · 14:27:54 · 47 mi from camp** 68.0268 N, 161.5007 W Western limit — flying under a low deck, hillside disappearing into cloud.	 **11 · 14:29:45 · 45 mi from camp** 67.9869 N, 161.5071 W Low over tundra at the western turn-back, cloud immediately above.	 **12 · 14:36:12 · 34 mi from camp** 67.9053 N, 160.9724 W Overcast over tundra ridges, heading back south-east.
 **13 · 14:45:19 · 16 mi from camp** 67.6496 N, 160.7931 W Tundra and shrub with ponds on the Nakolik side.	 **14 · 14:47:31 · 12 mi from camp** 67.5869 N, 160.8099 W Braided river valley in grey mountains; cloud on the tops.	 **15 · 14:47:35 · 12 mi from camp** 67.5853 N, 160.8125 W Same valley, mist across the peaks.

Caribou Spotter Flight Report

Baird Project | Lux Copper LLC | Kiana, Alaska

Flight of Sunday, 6 September 2026

Flight details

Date	Sunday, 6 September 2026	**Spotter names**	Darrel Brown, Thomas Jackson
Time off	18:48 AKDT, Kiana (PAIK)	**Time on**	21:13 AKDT, Kiana (PAIK)
Aircraft / operator	Piper Cherokee, N31736	**Pilot**	Lee “Big Boy” Staheli
Area flown	West-north-west from Kiana up the Squirrel River, across the Agashashok and Eli River divides, then north-west up the Wulik River into the Red Dog district, returning by the same corridor to Kiana. See Figure 1.		
Weather / visibility	Spotty cloud.		

All times are Alaska Daylight Time (AKDT).

Survey coverage

Survey effort	2 h 25 min on track, 290 miles flown.
Distance from camp	The track stayed between 21 and 87 miles from camp, furthest at 19:53.
Baird Project area	Not surveyed on this flight. The track came no closer than 19 miles to the claim block and 21 miles to camp.
Ground searched	About 262 sq mi lies within half a mile of the track and 475 sq mi within one mile — roughly 4% and 7% of the area enclosed by the route. The flight is a long transit corridor, not an area survey.
Noatak National Preserve	Inside the mapped preserve boundary for 56 miles (19% of the distance flown), in three separate spans. Boundary indicative only.

Caribou observed

Time	Number	Direction of travel	Location / distance from camp	Moving together or scattered
19:50	**12**	**Stationary** animals not travelling when observed	68.1941° N, 163.1157° W — open tundra about 2 miles east of the Wulik River, 11 miles NW of Red Dog Mine. 84 miles from camp; 110 miles from Kiana.	**Scattered** animals spread across open tundra in the photographs, not in a tight group

Time and position are taken from the “Caribou Sighting” GPS waypoint, which falls 6 seconds from a recorded track fix. The count of 12 and the stationary behaviour are the spotter’s; the count is consistent with the animals resolvable in Photograph 2 (see the enlargement in the photograph log). One group was recorded.

Predators and other aircraft

Time	What was seen	Location	Effect on caribou, if any
NONE — no predators, other aircraft, boats or snowmachines seen			

Disturbance observed

Did caribou change behaviour?	No — the animals did not change behaviour
If yes, describe	Not applicable
Suspected cause	Not applicable

The animals were stationary and showed no change in behaviour.

Sources: flight track and caribou waypoint from a Garmin GPSMAP 64x (687 fixes for this flight). The supplied track file also held two stray points recorded in British Columbia on 20 August, which were excluded. Claim block and camps from the supplied shapefiles. The photographs carry no EXIF timestamps, so they cannot be timed or positioned along the track. The Noatak National Preserve boundary is indicative and should be confirmed against an authoritative land-status source.

Figure 1 — Area surveyed for caribou

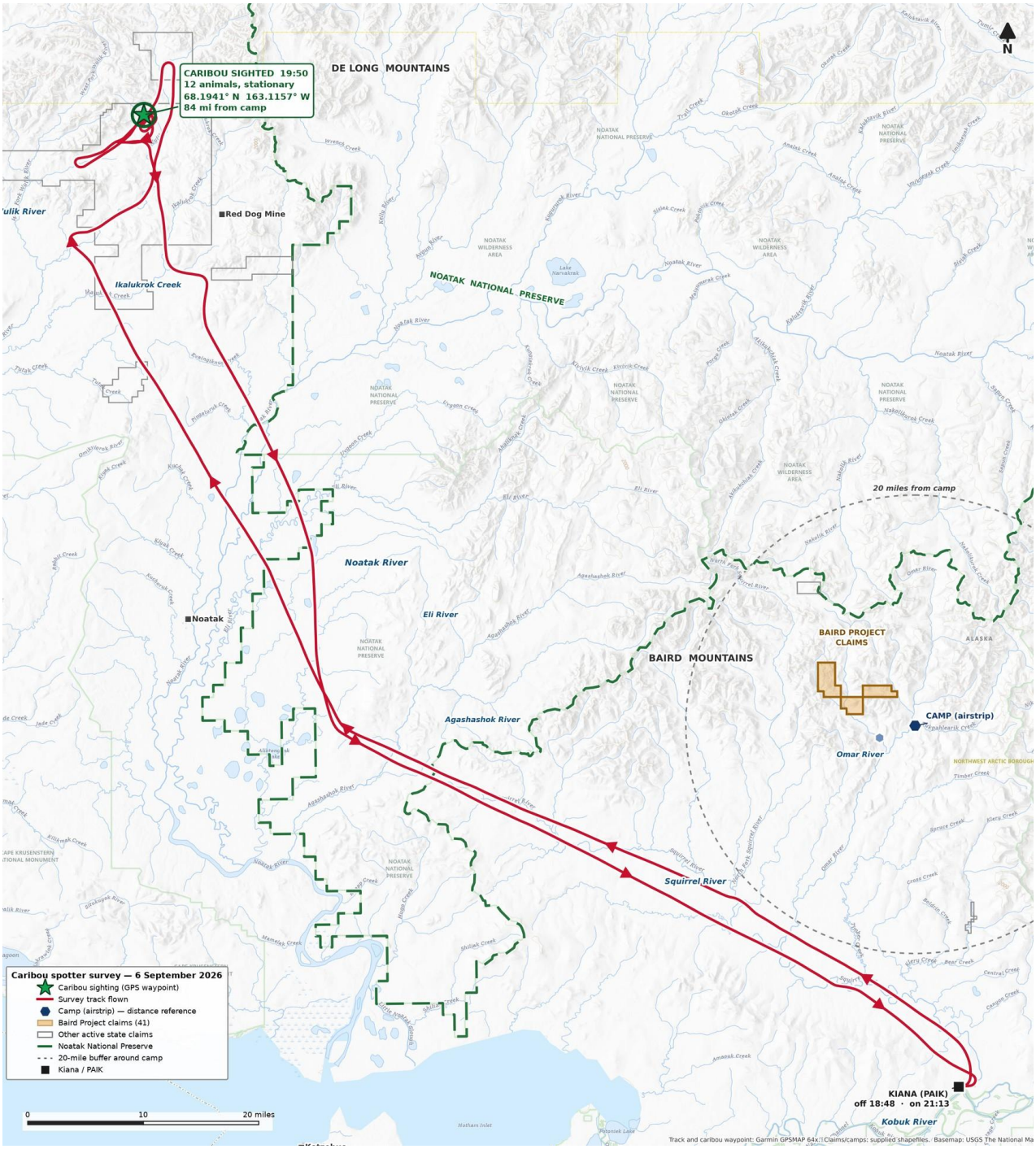


Figure 1. Caribou spotter survey of Sunday, 6 September 2026. Track flown, the recorded caribou sighting, and the Baird Project claim block and camps (not overflown on this flight). The dashed circle is a 20-mile buffer around the airstrip camp.

Photograph log

Six photographs were supplied. Photographs 1–5 show caribou on open tundra and belong to the 19:50 sighting of 12 animals; Photograph 6 shows the spotters scanning from the cabin. None carries an EXIF timestamp, so they cannot be timed or placed along the track and are presented in the order supplied.



Photograph 2, enlarged detail (about three times). *Most of the group of 12 is resolvable here — one bedded at top centre, a pair standing at centre (the right-hand animal antlered), and further animals at the left edge and along the bottom. Caribou are not resolvable at the reduced size of the full frames below.*



Photograph 1

Caribou on open tundra, wing tip lower left; animals left of centre and near the left edge.



Photograph 2

The clearest frame — most of the group visible, scattered across the tundra over roughly the left third of the view. Enlarged above.



Photograph 3
Caribou on tundra at the left and lower left of frame; several animals, well spaced.



Photograph 4
Caribou spread across gently sloping tundra through the centre of the frame.



Photograph 5
Oblique low-level view over tundra; one or two animals visible.



Photograph 6
The spotters at work in the cabin — one scanning with binoculars, one watching out the opposite window. Tundra visible through both windows.

Northwest Arctic Borough P.O. Box 1110
Kotzebue, Alaska 99752 (907) 442-2500 Fax (907) 442-2930 www.nwabor.org

DATE: *September 11, 2026*

TO: *Dickie Moto, Mayor*

FROM: *Clara Johnson, Public Services Director*

SUBJECT: DEPARTMENT REPORT TO ASSEMBLY THRU THE MAYOR

Thank you for the opportunity to provide an update regarding the activities of the Public Services Department and projects we are working on.

Since the last Assembly meeting I have taken some time off for medical appointments and will have a short report.

Most CUAP fuel orders have been received for the WTPs in Ambler, Buckland, Kiana, Kivalina, Kobuk, and Shungnak. We are still waiting for deliveries to Deering, Noorvik, and Selawik. The City of Kotzebue has also received its CUAP funding of $337,563.00.

Great news the pipe was delivered to Ambler over the weekend with Lynden. The load consisted of 42 sticks of 40’ long pipe (1680 LF). There will be 4 more loads in total, we are expecting 2 more loads within the week with the last 2 loads the following week. Brice will update as we confirm delivery schedule.

Currently 2 loads in ANC @ Lynden, the last 2 loads have cleared customs at the Canadian border and should be in ANC within a day and awaiting cargo flight.

Brice started pipe replacement on Monday Sept 7 and got 230 LF replaced on the south loop. Confidence is high that 300’/day will be achievable as team gets in a rhythm. Operators are digging trenches and removing old water line pipes ahead of the pipe installation team. Target timeline for completed pipe replacement is 30 days.

Brice Services will leverage Lynden cargo flight back-hauling capability for anything that is considered excess to this phase of the response. Temp Facilities are operational as of last week. Use of the facilities by the community has increased in the last few days.

Vandalism to equipment and materials has presented multiple challenges to the response. Brice Services is cooperating with the VPSO on their

response. Brice Services will be increasing their security efforts to help limit future instances of vandalism.

Some of Brice Services personnel aided in the response effort to a house fire in the community Saturday night/Sunday morning, leveraging water tanks and trailers to help fight the fire. Report received was that 2 homes burned.

Temporary water systems for school, clinic, teacher housing and residential units continue to be operational. 2 local community members are being hired to keep up with water hauling operations now that pipe has arrived and Brice crew will be prioritizing replacement efforts.

Brice Services will be providing weekly updates that will be distributed around the community (general store, clinic, etc) to help keep residents of Ambler abreast of the replacement effort and schedule.

Had a flooding meeting with Ron Johnson, Fred Smith, Randy Walker, Thomas Baker, Mayor Moto and myself to prep for fall floods for Kotzebue area on Monday the 14th and setting up a round table meeting with all the key players to prepare for future fall storm floods on Monday 21st at 10 am at KIC board meeting room to set up an incident command.

Working with AML on turning in the warm storage grants with John Bullock.

At the end of my report is the latest update on the regional disasters for your read.

That concludes our report for the Public Service Department.

STATUS OF PUBLIC SERVICES ACTIVE PROJECTS

FY27 COMMUNITY ASSISTANCE PROGRAM

Community	*Funding Available*	*Funding Received*
• *Ambler*	*$20,611.36*	
• *Buckland*	*$46,081.67*	
• *Deering*	*$14,655.23*	
• *Kiana*	*$30,094.15*	
• *Kivalina*	*$33,620.81*	
• *Kobuk*	*$12,225.75*	*$12,225.75*
• *Noatak*	*$57,717.05*	
• *Noorvik*	*$51,489.22*	
• *Selawik*	*$58,385.79*	
• *Shungnak*	*$21,081.58*	

Total:	***$345,962.62***	***$12,225.75***

We processed Kobuk's CAP FY27 for $12,225.75..

Project Name:	*Kivalina Road Maintenance Project*
Scope:	*Snow removal, resurfacing, dust control.*
Funding:	*FY26 General Fund*
Project Phase:	*Maintenance*
Community:	*KVL*
Manager:	*Clara Johnson, Public Services Director*

The annual fuel for road maintenance and the shop heating has been delivered. 10,000 gallons.

CUAP FUEL: FY27

Community	*Amount*	*Gallons*
• *Ambler*	*$20,450.53*	*2,569*
• *Buckland*	*$31,881.81*	*4,005*
• *Deering*		*13,000*
• *Kiana*	*$37,733.71*	*5,999*
• *Kivalina*	*$36,070.73*	*4,660*
• *Kobuk*	*$33,410.22*	*4,197*
• *Noorvik*		*32,000*
• *Selawik*		*19,000*
• *Shungnak*	*$39,802.50*	*5,000*

$199,349.50 90,430 gallons

Waiting for Noorvik, Deering and Selawik fuel to be delivered. As we get the invoices, I'm updating the number of gallons and the amount for the fuel.

September Report:

Dominic Ivanoff, Public Service Administrator

Kivalina:

- The annual fuel for road maintenance and the shop heating has been delivered. 10,000 gallons.

Villages:

- Last months report Dominic had traveled to Noatak, Ambler, Shungnak and Deering to install the new watchguard networks for the VPSO program. He didn't have the proper hardware to fully install them permanently onto the wall. He has since, gone back to the villages and is completely done.
- Shungnaks computer to manage the trilogy locks is done, but training to completely add the database has not been completed. Dominic is going to be working with a locksmith out of Washington state to get training and help with this.
- Dominic and a few others from the public services dept. were in Ambler to help with smoke detector install and community feed.
- Austin has scheduled Kobuk smoke detector install and community feed for September 16th. The dept. will be heavily involved with this event as well.

Kotzebue:

- As per usual, assisting John and his crew with procurement and logistics as much as possible has kept us busy. We attempt to take as much administrative duties off Johns hands as possible. By this, it frees him up to get out into the field to get his projects done in a short construction season.

This concludes my report.

Austin Norton, S&R/Fire Coordinator

Search and rescue:

We had five search and rescue calls. One was the three high school boys hunting below Noorvik. Two were self resolved before we can gather searchers to go out. And one was for an SOS down the coast here in Kotzebue. That one the individual turned down being rescued. Also had a call on a missing 14 year old boy here in Kotzebue but turns out he was a run away which they found out he as ok.

Fire report:

We had one call on a house fire in Ambler but I did not go investigate this one as the house was a total loss but I found out from a local that kids might have been smoking in the stormshed that night and that is where the fire was when responders first went over.
We traveled to the city of Ambler last month to install smoke alarms. We invited Maniilaq along and two of their employees came along. Our next village will be the city of Kobuk for more smoke alarm installation



NWAB Emergency Response

Daily Report 9/2, 9/3, 9/4, 9/5, 9/6, 9/7

Kiana, Selawik, Buckland, Ambler, Shungnak, Kobuk

Ambler:

- 2 am double house fire.
- Procuring insulated 4” HDPE pipe for replacement of cracked water line replacement.
    - **1st load of pipe flown into Ambler on Saturday 9/5.** 42- 40’ sticks of pipe, a crate of foam, and a trailer made to haul to pipe.
- Temporary facilities are **completed.** Open to use by community members.
    - Water heater heating element replaced. 9/2
- Temporary 55gal temporary water tanks for each house in Ambler are **completed.**
    - 4 homes decided they wanted temporary water hooked up. 9/2.
    - Water trailer set up and available for community to fill up temp tanks.
- Crew housing boiler serviced and running. 9/2
- Water supply line from the river to the plant leaking
    - Leaking location is being excavated and investigated. 9/2.
    - Located and repaired 9/3
- 4” HDPE pipe installation.
    - Prebuilding water service saddles before installation starts. 9/4.

  - Crews start excavating and removing pipe. 9/6.
  - Start staging pipe. 9/6
  - Fused 230 feet of new HDPE pipe on the South Loop.

-






- Picture (9/2): Boiler serviced. Water heater elements were repaired. Searching for leaking water supply line.

-





- Picture (9/3): 4” sewer line on a house repaired. Located and repaired water supply line leak.

-




- Picture (9/4): Finished clearing ROW of debris.

-





- Picture (9/5): House fire. Unloading of the Herc.

-





- Picture (9/6): Hauling and staging pipe. Pressure testing water main.

-



- Picture (9/7): Installation of new pipe in trench.

Kiana: (No Update)

- Work Complete, no contractors on-site.

Selawik: (No Update)

- Work Complete, no contractors on-site.

Buckland: (No Update)

- Work Complete, no contractors on-site.

Shungnak:

- Work Complete, no contractors on-site.

Kobuk: (No Update)

- Work Complete, no contractors on-site.

September Monthly Report to Assembly through the Mayor

J

To: Dickie Moto Sr., Mayor

From: Darrell Hildebrand, VPSO Coordinator
Chris Hatch, Regional Public Safety Officer

Introduction

This has been a difficult month, with a number of serious incidents including citizens shooting at each other in the middle of a community, a suspect pulling a gun on an officer during an investigation, and officer reports of increasing hostility and violence.

Key Issues This Month

- Ambler: VPSO housing remains limited to hauled water.
- Noatak: The housing remodel plan changed significantly in September — the unit is being expanded to 5 bedrooms to accommodate an officer relocating his family (6 children) to the region full-time. As a result, the department now needs to find another location for the office and holding cell originally planned for that building.

Training and Operational Readiness

Two officers were newly certified as Field Training Officers this month, expanding the department's ability to provide timely field training to new hires.

VPSO Hiring and Training Pipeline

Before a VPSO is certified to work independently, candidates go through a multi-stage process, including background screening and a psychological examination, prior to hiring. Recruits then attend the academy and enter the department's Field Training and Evaluation Program (FTEP), broken into a Pre-Academy Task List and Post-Academy Field Training phase covering dozens of skill areas — including use of force, arrest procedures, evidence handling, prisoner transport, patrol and vehicle procedures, radio operations, and community/domestic violence response. The program has a six-week minimum, but there is no fixed completion timeline beyond that. Not every task on the list will come up naturally during training, and the goal isn't to check every box — it's to see enough real tasks performed that the FTO can honestly assess the recruit's judgment and capacity, not just their ability to go through the motions. Because VPSOs often work independently in high-stress, remote environments with no backup readily available, the department takes the time necessary to be confident an officer is genuinely comfortable and capable before certifying them to work solo. This is why field training commonly runs several months rather than the six-week minimum.

The department currently has 5 certified FTOs — James Kvamme, Josh Harville, Chris Hatch, and newly certified this month, Jeffrey Petzoldt and Henry Martinez — though Chris Hatch is temporarily limited to administrative duty due to injury, which affects near-term field training capacity.

VPSO Village Coverage and Assignments

Current Assignments (September)

- Edward Rizzi – Corporal, Ambler
- Adam Chiles – VPSO, Ambler (K9 Handler) — now also handling all K9 duties region-wide
- James Kvamme – 1st Sergeant, Shungnak
- Ryan Lane – VPSO, Noorvik
- Earl Chicharello – VPSO, Noorvik
- Jeffrey Petzoldt – VPSO/FTO, Buckland (reassigned from Deering; newly certified FTO)
- Henry Martinez – 1st Sergeant, Kiana (newly certified FTO; promoted this reporting period — congratulations, Henry!)
- Lara Martinez – VPSO, Kiana
- Chris Hatch – Regional Public Safety Officer, Kotzebue (limited to administrative duty due to injury)
- Josh Harville – Regional Rover VPSO
- Recruit Timothy Thomas – Field Training and Evaluation Program

Marlin Autaubo (VPSO/Deering, Rover Assignment / Lead K9 Handler) resigned effective 9/9/26. Deering currently has no dedicated VPSO and is covered as possible using roving officers. K9 handling duties now fall exclusively on VPSO Adam Chiles.

Rank Structure and Meaning

The VPSO rank structure reflects experience, training, and supervisory responsibility, and is separate from Alaska State Trooper rank structure:

- VPSO — Entry-level certified officer, performing full peace-officer duties in their assigned community.
- VPSO Corporal — Awarded after a period of acceptable performance (typically several years) and completion of instructor-level training (such as Methods of Instruction, DARE, or AMSEA instructor certification), including actually teaching classes to other officers or recruits.
- VPSO Sergeant — A further step up, generally requiring sustained strong performance evaluations and additional instructor/training responsibilities.
- VPSO First Sergeant (Field Training Officer) — Must have served as Sergeant for a set period and completed Field Training and Evaluation Program (FTEP) instructor training. First Sergeants serve as Field Training Officers (FTOs), directly training and evaluating new recruits before they're certified to work independently.
- Regional Public Safety Officer (RPSO) — Per AS 18.65.680, the commissioner of public safety may appoint regional public safety officers to provide an expanded public safety and law enforcement presence in rural areas of the state; provide oversight and training for the village public safety officer program; administer functions relating to protecting life and property in rural areas, conducting investigations, conducting search and rescue missions, and conducting local training programs in drug and alcohol awareness and prevention, water safety, and gun safety; and perform other public safety duties as directed by the commissioner. In practice, the RPSO role carries administrative supervisory responsibilities similar to an Alaska State Trooper sergeant overseeing his troopers — including reviewing and approving officer reports and handling submissions to the court system and the District Attorney's office.
- VPSO Coordinator — Oversees the department's VPSO program as a whole, including staffing, training standards, and reporting to the Assembly and Mayor.

Village Coverage (Reporting Period: July 30 – September [date])

Coverage has been provided in Ambler, Kobuk, Shungnak, Kiana, Noorvik, Deering, Buckland, and Noatak during this reporting period.

Operational Activities / Incident Trends

Call Volume and Categories — September (as reported to date)

Note: these figures were compiled from officer-submitted incident reports collected in the days immediately preceding this report's submission. As a result, they reflect a snapshot of what had been reported at time of compilation rather than a fully reconciled monthly total. Some calls may appear in more than one category, and multiple officers responding to the same incident may result in overlapping counts. The department is working toward a more consistent, earlier data-collection process for future reports.

Category	Count
Domestic Violence (DV)	17
Non-DV	60
Reportable	20
Non-reportable	66
Assaults	11
DUI/OUI	0
Welfare checks	3
Public appearances / community engagement	8
Village visits/travel	20
Search and rescue	2
Property crimes	15
Alcohol/substance-related calls	8
Transports	17

Noorvik — Armed Confrontation and Solo Officer Response

In the early morning hours, a fourth individual reportedly shot at three other residents, who stated they returned fire — this exchange was the original source of the gunshots-fired report received in the community. The sole VPSO on duty in Noorvik responded on foot toward the sound of gunfire and located the three individuals near a wrecked four-wheeler they had reportedly been driving. When the officer attempted to detain the group, two of the three eventually began complying and were handcuffed. The third individual, kneeling on the ground, then yelled “I’ve got a gun” and grabbed a holstered pistol, which he held facing the officer. The officer drew his firearm on the suspect and gave repeated commands to place the weapon on the ground without drawing it from the holster. The suspect then quickly pulled the pistol from the holster while looking directly at the officer. The officer continued issuing commands to drop the weapon; the suspect complied and was taken into custody without further incident.

While the officer was managing this confrontation alone, multiple community members congregated at the scene, yelling at the officer and crowding both the incident location and evidence. One of the three original individuals was arrested for DUI in connection with the four-wheeler wreck. The original shooting incident between the fourth individual and the three residents remains under active investigation.

What We're Doing About It — Two-Officer Team Deployment (Temporary Measure)

In response to the rise in hostile and violent encounters this summer, the department is temporarily shifting from single-officer village assignments to two-officer teams. This requires officers to rove between assignments to maintain regional coverage, rather than one officer being stationed in a community at all times. This is considered a necessary but temporary measure for both resident and officer safety: when multiple officers respond together, there is less individual stress on any one officer, which reduces the likelihood of an overwhelmed officer needing to escalate to a stronger response. In short, two-officer teams make for safer outcomes for both residents and officers.

Community Education

The department believes better public understanding of the VPSO program — its authority, its role, and the realities officers face — would help address some of the tension seen this summer. Educating the Assembly through this

report is a first step. Coordinator Hildebrand, along with RPSOs and VPSOs, will schedule attendance at community meetings over the next six months to educate residents on VPSO roles and responsibilities, recruit from the region, and answer community concerns and questions directly.

Role of the VPSO, per statute

The Village Public Safety Officer program is established under AS 18.65.670–18.65.688. A certified VPSO holds the same legal authority as a state or municipal peace officer and is charged with protecting life and property, providing pretrial, probation, and parole supervision at the direction of supervising officers, conducting investigations, enforcing state and municipal criminal law, and exercising the powers customarily held by any peace officer. VPSOs are not a lesser or limited form of law enforcement — the program exists to appoint, train, supervise, support, and retain officers who serve their home communities, and their duty to enforce the law applies equally to all residents and visitors, regardless of race or background.

Funding and Equipment Update

The new boat and truck were delivered on the second barge. The boat was immediately placed into service and has been used for multiple prisoner transports, responses to neighboring villages, and moving officers on and off shift in Noorvik — saving on airfare and freight charges.

COPS Grant Match Funding

The department needs to discuss the COPS grant funding with the Assembly. The match amount originally approved by the Assembly is too low to cover hiring the two officers the grant was intended to fund. Coordinator Hildebrand will discuss this issue in detail at the meeting.

Prepared by:

Darrell Hildebrand
VPSO Coordinator

Chris Hatch
NAB RPSO

NORTHWEST ARCTIC BOROUGH

Mayor’s Memorandum

To: Dickie Moto, Mayor

From: Chuck Greene, Director, Community & Economic Development; Ingemar Mathiasson, Energy Manager; Shauntai Shroyer, Community & Economic Development Coordinator; Vika Owens, Sulianich Coordinator

Subject: Community & Economic Development Monthly Update

Date: September 10, 2026

This memorandum provides a summary of current Community & Economic Development activities, including commission actions, program administration, operational risks, and near-term coordination efforts.

Economic Development Commission (EDC)

Pending availability of commission members, the next meeting of the EDC will be on September 21, 2026, in Kotzebue.

Village Improvement Commission (VIC)

The VIC has scheduled meetings for the next four quarters. November 9-10, 2026, March 16-17, 2027, June14-15, 2027, August 9-10, 2027. The next deadline for Village Improvement Fund (VIF) applications is October 31, 2026.

Happy to report that Melissa Ivanoff, formally Assistant to the mayor, is the new Village Improvement Fund (VIF), Project Manager. Melissa is a long-time borough employee and is very familiar with the operations of several departments within the borough. Welcome Melissa! Look forward to working with you.

The VIF reports to the mayor will resume for the month of October.

SULIANICH ART CENTER (SAC)

The SAC Coordinator is preparing to participate in the Alaska Federation of Natives (AFN) Convention Arts and Crafts Fair in

October. Historically, SAC has done quite well in sales during this annual event. The event will take place in Anchorage during the week of October 19-24, 2026.

SMALL BUSINESS GRANTS (SBG)

Small business grant funding is expected to return to previously budgeted levels following approval of Ordinance 26-06am01.

FISHING GRANTS

Funds for the fishing grant program is expected to return to previously budgeted levels following approval of Ordinance 26-06am01. Line-item transfer requests utilizing the current budget were submitted for the short term and approved to take care of outstanding invoices. Thank you, mayor.

F.R. FERGUSON SCHOLARSHIP PROGRAM

The borough scholarship program continues to assist those borough residents who aspire to pursue their secondary education degrees and similarly to those who wish to pursue vocational /technical educational training.

Energy Department Monthly Report

Date: Sep. 8th , 2026.

Conferences

2026 Alaska Rural Energy Conference

October 27-29, 2026 Westmark Hotel, Fairbanks
We may take our ESC members to Fairbanks and have our internal meeting there.

IRS tax returns (Still waiting)

We are waiting for the corrected tax return check for Noatak. The final adjusted credit amount will be $513,981 (interest will be added). Finance department is working on the return together with Baker Tilly.

Discussion will follow regarding setting up a “Regional IPP fund” using the incoming returns, for Renewable Energy development going forward as discussed in our retreat in 2025.

We have shortfalls in the OCED budget and at this time do not have enough funding to complete the Solar PV build out and Heat pumps for all communities. I propose that we us the incoming funds to complete the build out for all communities

I have also now engaged Baker Tilly in advancing the Solar projects for Selawik, Ambler, Noorvik and Kiana for possible Tax returns on our matches.

Cost of Fuel & Electricity

Our cost of fuel in the Region remains high and the current issues between the US and Iran is likely to raise the cost up to 60% higher.

This creates a very serious situation for our communities with everything rising in cost. We will be engaging with NANA to discuss a possible Bulk Fuel summit.

Cost of electricity also remains the same since September 2025 at the moment. but is expected to raise up to 50% in cost by July.

Purple are updated but not new barge pricing yet

Community NANA provide 20% off for Shareholders	Gasoline $/G Retail New	2025 Pricing October	Stove oil $/G Retail New	2025 pricing October	Sales Tax included	Util. & AVEC 2026	2025 pricing October	NWABS Cost $ FY 2026	NWAB 2025 pricing October
Kotzebue KIC and KEA	8.95	8.59	8.99	8.59	N/A	4.60	3.2872		
Kotzebue Vitus	8.94	7.99	9.38	7.85	N/A			6.24	2.2005
Kotzebue Crowley	8.51	8.20	9.05	8.04	N/A				
Ambler	27.60	15.97	27.60	15.97	3%	13.95	6.92	7.98	6.5005
Kobuk out of Diesel	15.45	11.36	12.60	10.77	3%	13.95	10.35	7.98	6.5005
Shungnak ANICA	10.07	7.75	10.91	7.34	2%	13.95	10.35	7.98	6.5005
Kiana	8.76	7.47	9.53	8.24	3%	4.5869		6.28	5.4005
Noorvik	8.25	8.25	7.95	7.95	4%	4.7351		6.28	5.0105
Selawik	6.66	6.66	7.72	7.72	6.5%	4.5943		6.28	5.0105
Buckland	7.13	6.96	7.13	6.79	6%	3.547		7.98	5.9005
Deering	8.80	6.10	8.75	7.75	3%	4.97/7.33		6.28	5.0105
Kivalina	7.04	7.04	6.78	6.78	2%	4.657		8.99	6.2505
Noatak ANICA updated gas	24.49	15.58	10.75	17.23	6%	10.37/13.95		13.95	10.53

NAB Electric rates July 1 2026

Community	1-750Kwh $/Kwh with PCE	Previous	Tax	750 Kwh Actual cost/Kwh PCE with tax and monthly charge	750-up $/Kwh With tax		School rate $/Kwh With tax Not including demand charges	Utility Non firm power purchase rate $/Kwh 7/1/2026
Kotzebue KEA	0.2608		6%	0.2764	0.2829		0.2444	N/A
Ambler AVEC	0.2816		3%	0.2900	0.9109		0.8159	0.4592
Kobuk AVEC	0.2731			0.2731	0.7144		0.6221	N/A
Shungnak AVEC	0.2731		2%	0.2786	0.7287		0.6345	0.3239
Kiana AVEC	0.2663			0.2663	0.5778		0.5778	0.2502
Noorvik AVEC	0.2685		4%	0.2792	0.6212		0.5500	0.2777
Selawik	0.2677		7%	0.3312	0.7879		0.5492	0.2560
Buckland BEC	0.2335			0.2335	0.6390		0.6390	0.4750
Deering IEC	0.2038			0.2038	0.6800		0.7700	0.4750
Kivalina AVEC	0.2678		2%	0.2627	0.7544		0.5260	0.2627
Noatak AVEC	0.4562		6%	0.4836	1.1611		1.0633	0.6984

Ambler Solar Battery project

234kw PV and 384kw LFP BESS

We wrote a TEDO (DOE tribal grants) proposal for Ambler for 2023-24, to construct a Solar PV and Battery solution for them. It's a request for $ 3,435,988 with an inkind match of $ 381,865.00

The proposed Solar array would be placed behind the existing church and the Battery in front of the AVEC plant. Engineering has been completed through e separate AEA grant and this project is looking for construction during the summer fall of 2027-28 due to delay in delivery of power module by AVEC.

Initial Site control and clearing to take place in 2026.

The Tribe of Ambler has signed the TEDO and is ready to engage.

Ambler mini OCED

For the Ambler project we also are wrote a mini OCED grant to upgrade the AVEC com system to be able to adequately operate the utility going forward with Renewable Energy from the coming Tribal IPP.

The amount for the award is $2,833,030.00 and is a fixed award for the powerplant only. The award has been received, and project has been started with MOU's being produced for NAB-AVEC admin.

A setback has occurred regarding the AVEC equipment ordered is not BABA compliant and have to be reordered this year, which push this project to be constructed in 2027-28 instead of this year.

Minisplit Heat pumps

Under the OCED grant we held a 3 day training April. 9-11th 2026. It was well attended 15 students and out of them we now have 7, 608-Certified Heat-pump installers . This part of the Heat-pump project is spearheaded by NANA.

An RFP was just posted for Installations of heat pumps in Deering June-July 2026. Another RFP for Shungnak and Kobuk will follow pending transformer upgrades in the 2 communities.

We have selected Northwest Electric for installations in Deering as our first pilot project to see how it is going to work out. Installations are planned for June and July. This is a joint operation with NANA.The installs will be scheduled for July-Aug. timeframe 2026, due to logistics getting the pumps to Deering with a barge. They have at this time installed the first 5 units, and they are very appreciated.

The next batch of units are planned for installation in Septembe

Selawik Rural Energy Pilot Program (REPP) Grant & OCED 700Kw Solar/1Mwh battery.

All Grant agreements in place. And we have started engineering and is now at 100%.
NEPA negotiations are complete
BABA Compliant Solar Panels was ordered 5th January (ANRI Vendor) and delivered in May.
The Wind turbines has been taken down.
With the construction budget now available we issued an RFP for construction.
ANRI was selected for construction and is under contract to complete the project during 2026.
Separate report from Deerstone attached below.

Alaska REF 15 for Selawik has been funded @ 1,134,500.00

The grant is active, and this funding is added to the REPP grant above as a match

Ambler Fuel farm

- Ambler City is pursuing a new Fuel farm and have received $ 180,000.00 for engineering services from the VIF to get to shovel ready status at 95% design spec.
- Construction is proceeding with Summit Construction.
- Completion of this project was anticipated for end of October, but got delayed due to adverse weather this last summer with excessive rains and unstable soils for creating the pad.
- The project was closed down for the winter and will be completed in the summer-fall of 2025.
- Work has started again. Equipment was flown in as the barge didn't make it in time.
- Now scheduled for completion in October 2026...



Ambler Firehall/Search and Rescue

- Initially started with $ 150K VIF funds in 2019, this project was awarded to Kuna in 2020-21 to do the engineering and NEPA requirements that was completed fall of 2021.
- And in January 2022 the City of Ambler made a request to Murkowski's office for $ 1.5 Mil to fund a fire hall/Search and Rescue bldg. that was needed.
- The project has been awarded the $ 1.5 Mil and Engineering of the building can now proceed to 100% with construction scheduled for 2025, Engineering services have been awarded to KUNA engineering.
- Community engagement started for construction in the summer- fall of 2026
- Pad construction completed as of July 2025
- RFP was issued on 10th September. and Kusher Construction has been selected for construction.

- The project budget needs additional funding, and the community is reaching out to all available funding sources. Construction budget is estimated at $ 2 Mil.
- The project will be seeking additional funding from VIF.
- Construction of the external shell of the building planned for Sep-Oct. 2026

Shungnak_Kobuk IPP
223.5 Kw Solar with a 384kWh Battery data collection ongoing

- Link to project; https://initium.agetoenergy.com/login
- User; Shungnak, password; shungnak2021

Report from Shauntai

Noatak Solar Battery IPP (updated)

280.6 Kw Solar with a 460Kwh Battery

- Link to project; https://initium.agetoenergy.com/login
- User; Noatak, password; noatak2022

- **Report from Shauntai**
  - During the rebuild of the Noatak powerplant the project will be in hibernation

Ingemar Mathiasson, Energy Manager

Deerstone report below.

Selawik Solar PV and BESS Project

Monthly Summary

Report Period: July 2026

Project Elements Completed

Administrative

- ANRI uploaded CPRs through 6/14/2026 to LCP Tracker. These were subsequently reviewed and approved by the NAB. ANRI is working with NAB finance to ensure ANRI provides all necessary documentation for grant reporting and financial tracking.
- Joint Use Agreement between AVEC and the NAB is currently in draft form. JUA discussions are ongoing with anticipated execution by August 2026.
- ANRI worked closely with the NAB finance team to ensure accurate invoicing and compliance requirements for grant administration.
- Tanya Ballot submitted her resignation with the NVS and the Council will be selecting a replacement on the 6th of August.
- Chris and Ingemar attended the monthly Council meeting and discussed the project and began conversations regarding selection of an IPP representative and IPP operator.

Wind turbine material

- The wind turbine material was not backhauled this summer and is currently stored on the gravel pad that will house the emergency warm storage building. A plan for moving and storing the material will need to be developed.

Solar PV

- Material procurement and delivery has been ongoing.

Battery Energy Storage System

- BESS arrived in Selawik and is currently stored at the BESS site.
- BESS foundation engineer completed a site visit to assess BESS gravel pad and obtain all required data for the BESS foundation design.
- BESS electrical design and interconnection is near completion with an anticipated final drawing set to be provided by early August.

Alaska Village Electric Cooperative (AVEC)

- Power poles arrived in Kotzebue and a barge charter was coordinated to deliver the material to Selawik later this fall.
- AVEC is procuring long lead material, as possible/available.

Project Elements in Progress

Administrative

- Continue to complete LCP tracker logging for hours worked onsite through the end of July, including all Non-Performing weeks.
- Continue development of the JUA and PPA.
- Development of a Tribal Energy Development Organization (TEDO) or Memorandum of Agreement (MOA) will continue in August.

- Power Purchase Agreement between AVEC and Independent Power Producer discussions to begin. Next steps will be established in August.
- Identify Tanya Ballot's replacement and establish working relationship.
- Identify IPP representative and operator

Wind turbine material

- Develop storage plan for wind turbine material

Solar PV

- Install fencing around the PV arrays.
- Begin PV shack demolition of electrical components.
- Begin PV electrical interconnection.

Battery Energy Storage System

- Complete BESS foundation design
- Obtain Fire Marshall permit for BESS- final BESS electrical interconnection design required for submittal to Fire Marshall.
- Grade and compact site, pending foundation design needs.
- Wind turbine material, currently located adjacent to the BESS site, backhauling coordination is ongoing.

Alaska Village Electric Cooperative (AVEC)

- Determine clear path forward for all AVEC related construction activities.
- Continue to procure long lead material.

Major Concerns and Action Plan

- AVEC did not receive any proposal's for their RFP for the BESS utility line extension and power plant upgrades due to contractor availability and long lead material procurement requirements, mainly the 4/0 wire required for the bulk power supply (32 week lead time). The NAB and AVEC are actively pursuing contingency plans as this will delay solar PV and BESS integration planned for 2026. As of late July, all work inside the power plant will be completed by a single contractor while the BESS power pole placement and auxiliary power connection will be completed by AVEC employees. Pending availability, a contractor will complete the electrical portion of the utility extension this fall. Worst case scenario AVEC will provide auxiliary power to the BESS so the units can be conditioned this winter. Integration would then be delayed until the spring/summer of 2027 when contractor availability is more favorable.











NORTHWEST ARCTIC BOROUGH

Regional Energy Plan and Comprehensive Climate Action Plan

September 14, 2026

PREPARED BY

KUNA ENGINEERING

4041 B Street, Anchorage, AK 99503

EXECUTIVE SUMMARY

For the Northwest Arctic Borough (NAB), fuel combustion is the largest source of greenhouse gas (GHG) emissions, measured in tons per year of carbon dioxide equivalent (tpy CO2e). Heating (homes and other buildings) accounts for the largest share of emissions, followed by electrical generation, and then transportation (aviation and ground-based). Each of these sources largely relies upon liquid petroleum-derived fuels that are imported and stored in the region until used. Figures ES-1 and ES-2 show calculated GHG emissions by community and by source category for the borough as a whole.

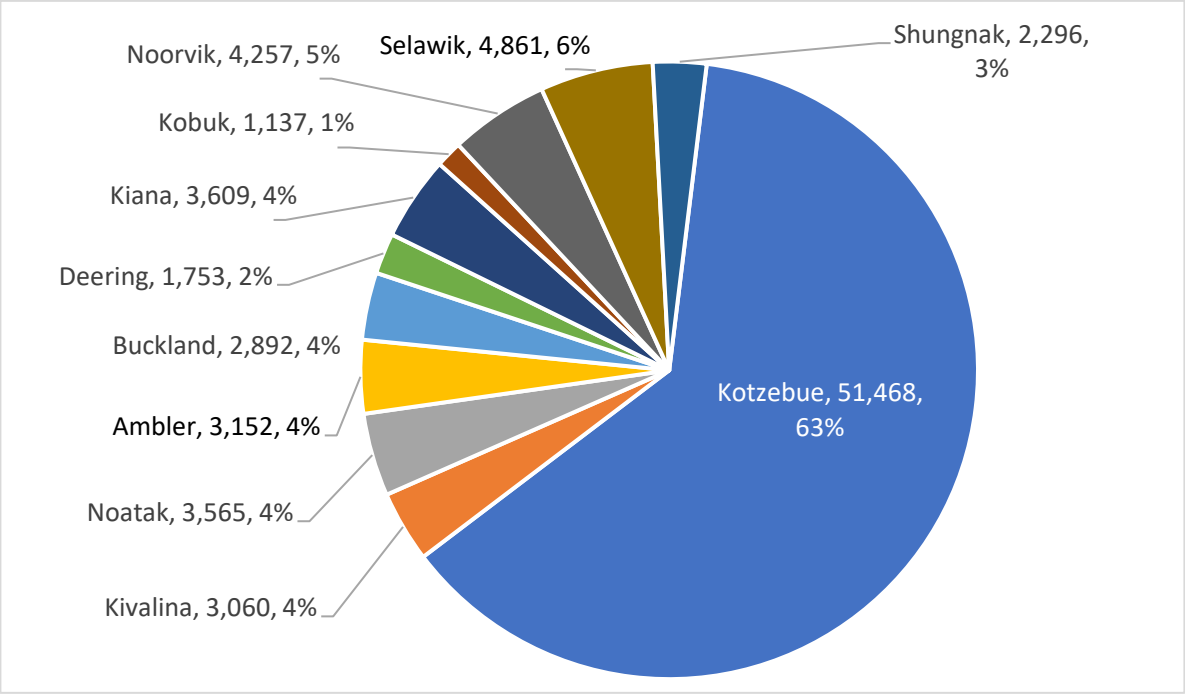


Figure ES-1. *NAB GHG emissions by community (tpy CO2e)*

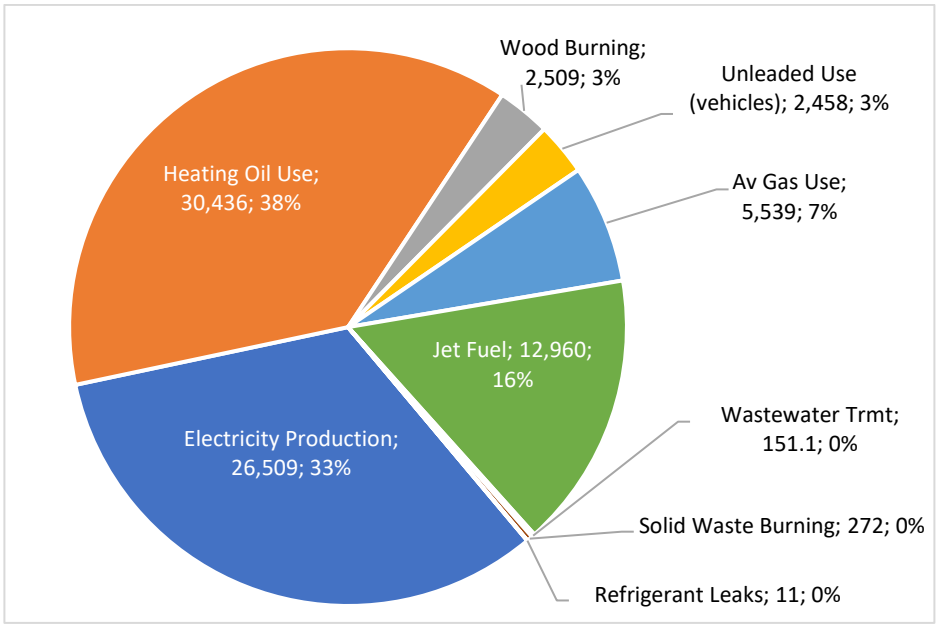


Figure ES-2. *NAB GHG emissions by category (not counting Red Dog Mine)*

Numerous energy-saving and GHG emission reduction measures are underway across the borough and are described in this plan. Table ES-1 summarizes these measures, which are intended to help the borough meet the following diesel and imported fuel reduction goals:

- Decrease imported fuel use by 10% by 2020 compared with 2008 levels. For electricity production alone, the borough has achieved a reduction of about 7% by 2024. However, when heating oil is included, the overall reduction is just over 2%; this reduction does not account for growth since 2008.
- Decrease imported fuel use by 25% by 2030.
- Decrease imported fuel use by 50% by 2050.

Achieving these goals will reduce GHG emissions while also supporting economic opportunities, improving air quality, and reducing the risk of associated environmental impacts. New projects and funding will be necessary to implement these projects. While large scale opportunities, such as the Kogoluktuk hydroelectricity project will provide significant diesel reduction, the disconnected nature of each community will require continued efforts on both large and small opportunities. The continued buildout and expansion of wind, solar, and BESS, alongside related energy efficiency projects will be needed to achieve the goals over the near-term. Heating oil reduction opportunities, such as the implementation of heat pumps and building efficiency improvements should continue to be pursued.

Table ES-1. Overview of potential GHG emission reduction measures

GHG Reduction Measure	*Description*	*Estimated Costs*	*GHG Reduction Potential*
Solar-Battery Systems	Solar arrays coupled with battery energy storage systems in each community to reduce diesel required for electrical generation	Approximately $8,000 - $10,000 per kW of Solar PV (includes battery)	Up to 2,000 tpy CO2e
Increased Wind Energy	Add new wind turbines to reduce diesel use for electrical generation	$10 million per 1 MW turbine	Over 2,700 tpy CO2e
Hydroelectric Power Implementation	Implement hydropower (Kogoluktuk River) to reduce diesel use in electrical generation	>$80 million for Kogoluktuk R. project (700kW)	Up to 4,000 tpy CO2e
Displacement of Diesel via Heat Pumps	Residential heat pumps to displace the use of heating oil for building heating	$8,000-$10,000 per heat pump	More than 2,200 tpy CO2e
Building Weatherization	Improve buildings to maximize energy efficiency	Costs depend upon specific action	Up to 3,000 tpy CO2e

Table ES-2. Estimated diesel and fuel oil reductions (gals/year)

	2008	*2024*	*2030 Estimated*	*2040 Estimated*
Electricity (diesel use)	2,549,830	2,353,770	2,103,770	1,416,270
Heating Oil Use (estimated)	2,612,236	2,702,494	2,364,994	2,207,494
Total	5,162,066	5,056,264	4,468,764	3,623,764
Total Reduction	N/A	2.1%	13.4%	31.3%
Electrical Reduction (from 2008)	N/A	7.7%	17.5%	44.4%

Notes: 2030 estimated reductions include ongoing heat pump and solar-BESS projects and 50% of the potential building weatherization reductions (see Table 7); 2040 estimated reductions also include the potential Kogoluktuk hydro project, the additional Kotzebue wind project, the remaining building weatherization reductions, additional wood heating, and half of the potential improvements from interties between communities (also see Table 7). Note that the projections do not include potential growth in new buildings or electrical demand.

Table of Contents

EXECUTIVE SUMMARY i

1 INTRODUCTION AND BACKGROUND 1

1.1 Low Income and Disadvantaged Community (LIDAC) Analysis 1

2 Energy Storage, Uses, and Costs 4

2.1 Fuel Prices 4

2.2 Fuel Storage 5

2.3 Fuel Users and Data Sources 6

3 GHG INVENTORY 8

3.1 Primary GHG Emission Sources 9

3.2 Secondary GHG Emission Sources 11

3.3 GHG Emissions Summary 11

3.4 Industrial Sources of GHG Emissions 13

4 GHG REDUCTION MEASURES 14

4.1 Opportunities and Implementation Details 15

4.2 Solar and Battery Energy Systems 17

4.3 Intertie Transmission Lines 18

4.4 Household Weatherization/Energy Improvements 19

4.5 Wind Energy Additions 20

4.6 Hydroelectric Power Generation 20

4.7 Biomass/Wood Heating 21

4.8 Residential/Commercial Heat Pumps 22

4.9 Water/Sanitation System Improvements 22

4.10 Energy Efficiency Projects 23

4.11 Funding Mechanisms 23

5 BENEFITS ANALYSIS 25

5.1 Co-Pollutant Analyses 26

5.2 Workforce Development 27

6 AUTHORITY TO IMPLEMENT 28

6.1 Environmental Permits 28

7 SUMMARY 29

8 REFERENCES 30

List of Figures

Figure 1. Northwest Arctic Borough map with land ownership and energy sources 2
Figure 2. NAB community populations 3
Figure 3. Fuel usage across the borough (gallons, 2024) 4
Figure 4. GHG emissions across the borough (tons of CO2e per year) 9
Figure 5. Summary of home heating fuels by community, 2022 10
Figure 6. NAB GHG emissions by category (tons per year, CO2e) 12
Figure 7. NAB GHG emissions (tpy CO2e) summary for liquid fuels (not including Red Dog Mine) 13
Figure 8. Borough fuel (diesel/heating oil) use and diesel savings from alternative energy 14
Figure 9. Near-term potential diesel savings (in gallons per year) from potential projects. 26

List of Tables

Table 1. Key socioeconomic metrics for the NAB 3
Table 2. Community energy costs 5
Table 3. Tank farm volumes and counts 5
Table 4. Sources of GHG emissions 8
Table 5. NAB GHG emissions summary 12
Table 6. GHG reduction measures and implementation details 15
Table 7. Summary of GHG reduction measures and potential benefits. 25
Table 8. Summary of co-pollutant emissions and reductions (diesel and heating oil use only) 26

Appendices

Appendix A – Community Profiles

Appendix B - GHG Emissions Calculations (by community and summary information)

Acronyms and Abbreviations

AC	Alternating Current
ADEC	Alaska Department of Environmental Conservation
AEA	Alaska Energy Authority
AHFC	Alaska Housing Finance Corporation
AMP	Airport Master Plan
ANC	Alaska Native Corporation
ANCSA	Alaska Native Claims Settlement Act
ANTHC	Alaska Native Tribal Health Consortium
ATC	Alaska Technical Center
ATV	All-terrain vehicle
AVEC	Alaska Village Electric Cooperative
AvGas	Aviation gasoline
BESS	Battery energy storage system
BFU	Bulk Fuel Upgrade
BOD	Biochemical oxygen demand
CFR	Code of Federal Regulations
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
CPRG	Climate Pollution Reduction Grant
CWA	Clean Water Act
DC	Direct current
DOE	U.S. Department of Energy
EPA / USEPA	U.S. Environmental Protection Agency
ESC	Energy Steering Committee
GHG	Greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
gpy	Gallons per year
GWP	Global warming potential
HO	Heating oil
HVAC	Heating, ventilation, and air conditioning
IPP	Independent Power Producer

IRA	Inflation Reduction Act
Jet A	Jet A aviation turbine fuel
KEA	Kotzebue Electric Association
kW	Kilowatt
kWh	Kilowatt-hour
LIDAC	Low-Income and Disadvantaged Community
MW	Megawatt
MWh	Megawatt-hour
NAB	Northwest Arctic Borough
NANA	NANA Regional Corporation
NEPA	National Environmental Policy Act
NIHA	Northwest Inupiat Housing Authority
NOx	Nitrogen oxides
NVOK	Native Village of Kotzebue
NWABSD	Northwest Arctic Borough School District
OCED	Office of Clean Energy Demonstrations
PCE	Power Cost Equalization
PM2.5	Fine particulate matter with a diameter of 2.5 micrometers or less
PV	Photovoltaic
QAPP	Quality Assurance Project Plan
RDM	Red Dog Mine
ROW	Right-of-way
RPSU	Rural Power System Upgrade
RurAL CAP	Rural Alaska Community Action Program, Inc.
SW	Solid waste
TCC	Tanana Chiefs Conference
tpy	Tons per year
USACE	U.S. Army Corps of Engineers
VIF	Village Improvement Fund

1 INTRODUCTION AND BACKGROUND

The Northwest Arctic Borough (NAB) is the governmental jurisdiction encompassing northwest Alaska and covers approximately 40,749 square miles, or more than 26 million acres. Community profiles are provided in Appendix A. In 2024, the borough had a total population of 7,216 and more than 1,800 households across 11 communities. Figure 1 provides a map of the borough.

The Climate Pollution Reduction Grant (CPRG) program was established under Section 60114 of the 2022 Inflation Reduction Act (IRA) (U.S. Congress 2022). The program provides funding to states, municipalities, tribes, and territories for development of planning tools and implementation measures to reduce greenhouse gas (GHG) emissions.

The NAB is a subawardee under the CPRG planning grant awarded to Tanana Chiefs Conference (TCC). Through this grant, NAB represents the 11 tribal communities within the borough: Kivalina, Kotzebue, Buckland, Deering, Selawik, Noorvik, Kiana, Noatak, Ambler, Shungnak, and Kobuk.

None of the borough communities are connected by road to the rest of Alaska or to one another. Travel into and out of the borough occurs primarily by air and, during the summer months, by water. Some over-snow and over-ice transportation also occurs during winter, although it generally does not accommodate large volumes of materials, equipment, or supplies. Goods and supplies are transported to communities by seasonal barge or ship and by air. Personal transportation within and between communities occurs primarily by boat, all-terrain vehicle (ATV), snowmachine, and airplane.

The only industrial activity included in this Climate Plan and the associated GHG inventory is Red Dog Mine operations. Additional information on these activities is provided in Section 3.4.

1.1 Low Income and Disadvantaged Community (LIDAC) Analysis

The 11 communities in the NAB had a total population of 7,216 in 2024, with more than 40% of borough residents living in Kotzebue (2,931). More than 80% of the population is Alaska Native or identifies with another racial or ethnic minority group. Nearly all Alaska Native residents are shareholders of NANA Regional Corporation (NANA), the Alaska Native Corporation (ANC) established under the Alaska Native Claims Settlement Act (ANCSA). Most residents are also members of federally recognized tribes based in their respective communities.

The median household income for the borough is $77,647, although income varies considerably among communities. This variation is influenced in part by differences in local employment opportunities, including employment associated with Red Dog Mine (RDM).

Table 1 summarizes key socioeconomic characteristics for the borough. The NAB is also a single census area encompassing the full borough.

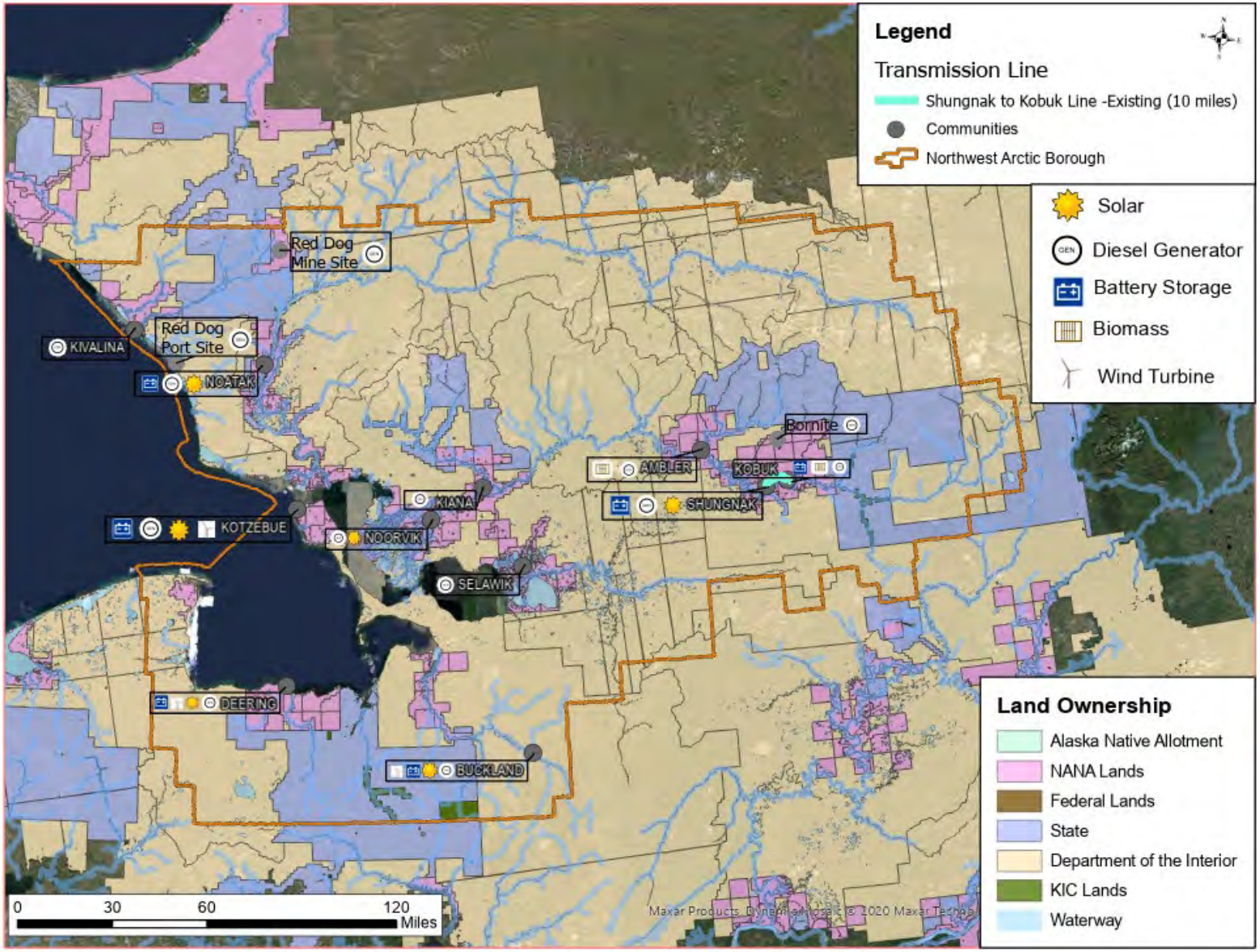


Figure 1. Northwest Arctic Borough map with land ownership and energy sources

Table 1. Key socioeconomic metrics for the NAB

Community	*Tribal Community?*	*Population (1)*	*Number of Households (1)*	*Median Household Income (1)*	*Unemployment Rate (1)*
Kivalina	Y	426	144	$70,278	22.5%
Kotzebue	Y	2,931	845	$106,328	5.7%
Deering	Y	185	45	$55,625	23.2%
Buckland	Y	629	146	$55,136	27.1%
Selawik	Y	757	120	$50,833	33.1%
Noatak	Y	540	102	$77,500	35.5%
Kiana	Y	413	90	$66,719	28.9%
Noorvik	Y	659	120	$63,125	33.7%
Ambler	Y	256	86	$41,563	21.6%
Shungnak	Y	251	73	$68,750	21.8%
Kobuk	Y	169	52	$31,429	6.1%
TOTAL		7,216	1,810		

Notes: (1) Source is 2023 information from U.S. Census Bureau (http://data.census.gov)

Under CPRG program definitions, the entire NAB is considered a LIDAC because each of its 11 communities includes a tribal government. As noted above, tribal membership exceeds 80% boroughwide and exceeds 90% in most communities.

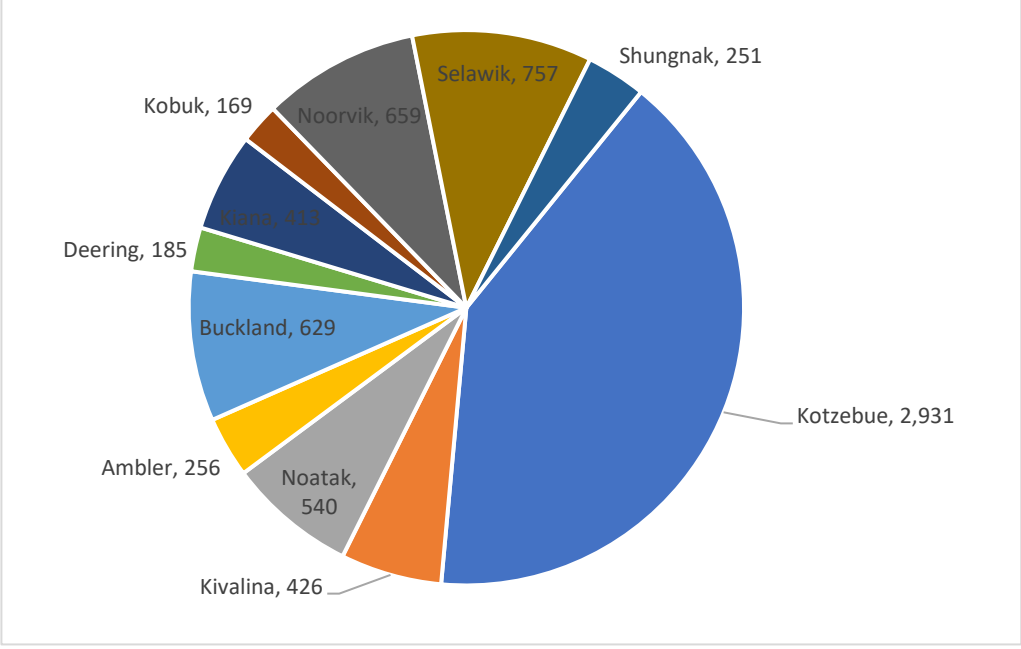


Figure 2. NAB community populations

2 Energy Storage, Uses, and Costs

The region's remote location and challenging logistics result in high energy costs for residents, businesses, and local government. The majority of the energy production for heating and electricity is derived from petroleum sources, primarily from heating/stove oil and diesel, respectively. Fuel is used for the categories as summarized in Figure 3. Section 3 provides information on how the fuel usage information was obtained, largely for 2024-2025.

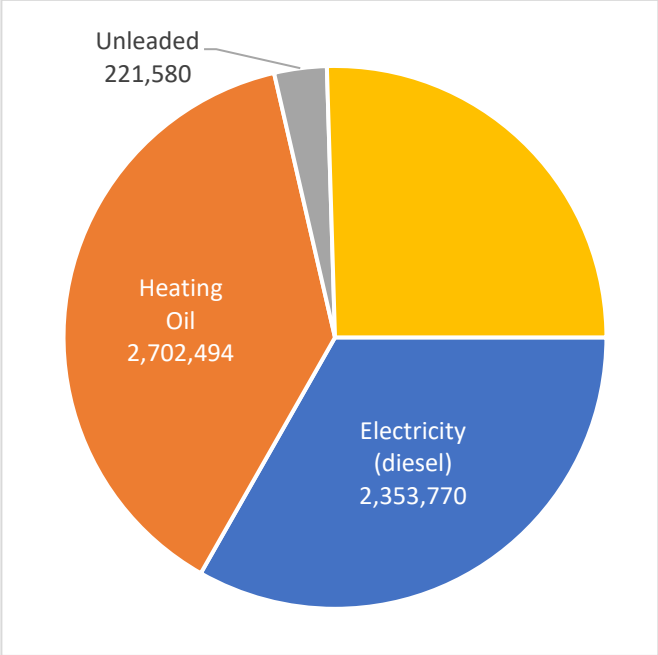


Figure 3. Fuel usage across the borough (gallons, 2024)

2.1 Fuel Prices

Fuel is largely delivered to the region by Crowley Fuels, Inc., a fuel and logistics company that owns and operates fuel barges suitable for the region. A large Crowley-owned bulk fuel tank farm is present in Kotzebue. Fuel prices are influenced by the challenging logistics for the delivery of fuel to the region, the global costs of fuel, and to a lesser extent, the costs for the operation of the bulk fuel tank farms in each community. The lack of competition for fuel logistics also influences local pricing. Recent fuel prices and electricity rates are provided in Table 2. It is important to note that pricing for 2026 is anticipated to be even higher given the changes in underlying oil prices.

Fuel prices for the remainder of 2026 and through winter 2027 are currently being established and are expected to increase in response to broader fuel market conditions. Higher fuel costs will also affect electricity rates in borough communities. Importantly, these are subsidized for residential users through the State's Power Cost Equalization (PCE) program, administered by each local utility. Unfortunately, the PCE program does not provide support for heating, which is typically reliant upon expensive heating oil. NANA Regional Corporation often provides support to its shareholders through its heating assistance grants. Reducing reliance on imported fuels can help moderate these high costs while reducing GHG emissions and supporting the borough's long-term population and economic stability.

Table 2. Community energy costs

Community	*Stove Oil Price (2026)*	*Electricity Price (after PCE), $/kWh (2026)*	*Electricity Price (pre-PCE), $/kWh (2026)*
Kotzebue	$8.99	$0.26	$0.28
Ambler	$27.60	$0.28	$0.91
Kobuk	$12.60	$0.27	$0.71
Shungnak	$10.91	$0.27	$0.73
Kiana	$9.53	$0.27	$0.58
Noorvik	$7.95	$0.27	$0.62
Selawik	$7.72	$0.27	$0.79
Noatak	$10.75	$0.46	$1.16
Kivalina	$6.78	$0.27	$0.75
Deering	$8.75	$0.20	$0.68
Buckland	$7.13	$0.23	$0.64

The 2022 Regional Energy Plan estimated that more than $30 million was spent annually on fuel in the borough, excluding aviation fuel. Current expenditures are likely substantially higher. Nearly 5 million gallons of heating oil and diesel (for electricity) are consumed annually, and with average fuel prices of at least $8 per gallon (2025), total expenditures now exceed the 2022 estimate. Heating oil alone accounts for more than an estimated $21 million in annual expenditures, with costs expected to increase further as fuel prices rise in 2026.

Opportunities for improved collaboration across the 11 communities on fuel purchases, including with AVEC, the school district, and the Maniilaq Association may help reduce overall costs. Additional fuel purchase collaboration with Red Dog Mine would potentially provide a significant opportunity to leverage volume purchasing.

2.2 Fuel Storage

Fuel storage is a challenge across the 11 communities in the borough. The summary information for each community provided in Appendix B includes information on the bulk fuel storage tanks. Table 3 provides a summary of the bulk tanks located in each community (AEA 2022).

Table 3. Tank farm volumes and counts

Community	*Diesel / Heating Oil*		*Gasoline*	
	Volume (gals)	*Number Tanks*	*Volume (gals)*	*Number Tanks*
Kotzebue	3,668,580	7	736,157	5
Ambler	172,900	2 (new)	30,000	1 (new)
Kobuk	40,100	6	4,000	1
Shungnak	218,000	11	32,500	2
Kiana	291,100	17	83,700	6
Noorvik	479,900	25	104,600	6
Selawik	658,500	22	103,500	5
Noatak	209,800	27	33,000	2
Kivalina	334,700	28	44,000	3
Deering	211,000	10	31,000	2
Buckland	350,000	16	51,000	3
TOTALS	**6,634,580**	**171**	**1,274,220**	**36**

Most communities receive fuel via barge delivery, though some communities (Noatak, Shungnak, Kobuk, and sometimes Ambler [pending river water levels]) are inaccessible via barge and require air delivery of fuel, increasing costs significantly. Bulk fuel farms in each community are typically owned by the Native store, the local power utility (Alaska Village Electric Cooperative, AVEC), and the school district. The high price of fuel leaves little additional funds to provide for ongoing maintenance of the bulk fuel tanks; grants have typically provided the funds necessary for tank replacements. Identifying and developing a sustainable source of funds for the continued maintenance of these tanks is critical to ensure their continued safe and efficient operations. Many of the bulk fuel tank farms in the borough are currently ranked high on the AEA Bulk Fuel Upgrade (BFU) listing (AEA 2024), further indicating their need for either replacement or significant repairs. Consolidation of tank farms is an opportunity for improved management and handling efficiency. Similarly, coordination between communities or even common ownership may improve and optimize maintenance.

2.3 Fuel Users and Data Sources

Fuel use estimates were developed from multiple information sources, as summarized below:

- *Northwest Arctic Borough School District (NWABSD).* School heating fuel use is based on information provided by NWABSD. The district purchases fuel annually through a single solicitation and contract. Coordinating this purchase with other large fuel purchases may provide an opportunity for cost savings.
- *Maniilaq Hospital and Clinic.* Fuel use for Maniilaq Health Center in Kotzebue is based on information provided by Maniilaq from their Vitus Energy invoices. Fuel for village clinics is purchased and delivered under a separate contract to fill the clinic storage tanks.
- *Home heating fuel use.* Residential heating fuel use, primarily heating oil, is estimated using information from the Alaska Housing Finance Corporation (AHFC) 2014 assessment of rural housing and heating statewide. Survey response rates were relatively high in three borough communities: Kotzebue, Noatak, and Kivalina. Response rates were lower in other communities, resulting in greater uncertainty in the associated fuel-use estimates. To update the 2014 estimates to 2024 conditions, the number of customers, or structures, in each community was adjusted using the 2024 Power Cost Equalization (PCE) data. The PCE data identify nearly 2,600 customers boroughwide (AEA 2025). Additional information on the methodology used to estimate total residential fuel use is provided in Appendix B.
- *Commercial building fuel use.* Most communities have relatively few commercial buildings beyond facilities such as Maniilaq clinics, power plants, schools, and water treatment facilities. Kotzebue, however, includes numerous medium and large buildings that use heating oil. The 2026 PCE report, covering State FY2025, identifies 172 non-PCE customers in Kotzebue (AEA 2025). Estimated heating fuel use for these facilities is approximately 250,000 gallons annually. This estimate excludes fuel use by NVOK, the City, and the Nullagvik Hotel, for which separate estimates were provided. This estimate is partially based on heating oil use per square foot data provided by Qavvik Air, NVOK, and the Nullagvik, which were then proportioned for the other facilities. Relatively few commercial buildings exist in the other villages in the borough.
- *Transportation fuel use.* Transportation fuel use is estimated based on the number of cars and trucks, ATVs, boats, and snowmachines in each community and their assumed average use. Unleaded gasoline is assumed to be the primary fuel for these vehicles. Boroughwide unleaded gasoline use is

estimated at nearly 222,000 gallons annually. Some vehicles are diesel powered, but diesel consumption for transportation is expected to be relatively small and is generally included within the reported heating oil volumes.

- *Air transportation fuel use.* Air transportation is a primary means of travel between borough communities, with Kotzebue serving as the regional hub for passenger and cargo service. As a result, most aircraft fueling activity occurs in Kotzebue. Both AvGas and Jet A are used, depending on aircraft type. Fuel-use estimates are based on takeoff and landing activity reported in the 2015 Airport Master Plan (AMP). The AMP projected nearly 25,000 flights for 2025, an estimate considered generally representative of current activity.

Additional detail on fuel-use estimates by user and category, including the data sources and assumptions used in the calculations, is provided in Appendix B.

3 GHG INVENTORY

GHG emissions from tribal communities in the NAB are primarily associated with fuel combustion for electricity generation, heating, and transportation. As described previously, the borough's remote location requires fuel to be transported into each community, where it is stored in one or more bulk fuel tank farms for local use. Additional sources of GHG emissions are identified in Table 4.

Table 4. Sources of GHG emissions

GHG Contribution Rank	*Emission Source*	*Sub-Category*	*Notes*
Primary Sources			
1	Heating	Heating oil combustion Wood combustion	Nearly all buildings are primarily heated via heating oil stored in bulk tanks in each community and distributed to residences/businesses as-needed
2	Electrical Generation	Diesel combustion	Fuel is stored in bulk tank farms in each community
3	Transportation	Gasoline, diesel, and aviation fuel combustion	*Intra-Community:* Cars, trucks, ATVs, boats, snowmachines *Inter-Community:* Boats, ATVs, snowmachines, planes
Secondary Sources			
4	Wastewater Treatment	Carbon dioxide emissions	Aerobic biologic activity for sewage treatment (lagoons)
5	Refrigerant Use	Small Appliance Leakage	Appliance disposal is not tracked
6	Solid Waste Disposal	Waste burning	Landfills are not capped; significant volume of waste is burned

Heavy fuel, primarily the Diesel No. 6 stored at the Crowley tank farm in Kotzebue, is not included in the GHG emissions calculations because the associated emissions are expected to occur primarily outside the borough or from marine vessels that are typically not counted in emission estimates.

Red Dog Mine (RDM), located approximately 85 miles northeast of Kotzebue, is the largest single source of GHG emissions in the borough. The mine is one of the world's largest producers of zinc and lead, producing more than 500,000 metric tons of zinc concentrate and 100,000 metric tons of lead concentrate annually. As a remote operation, RDM maintains more than 16 million gallons of on-site diesel storage and consumes more than 19 million gallons annually for electricity generation and transportation. RDM reports its GHG emissions to the U.S. Environmental Protection Agency (USEPA) under the Greenhouse Gas Reporting Program (GHGRP), as required by 40 CFR Part 98. Reported emissions values are incorporated into this plan. The bulk fuel tank farm located at the Red Dog Port has a diesel storage capacity of just over 17.5 million gallons across 7 bulk tanks; typically these tanks are filled twice annually, in July and late September.

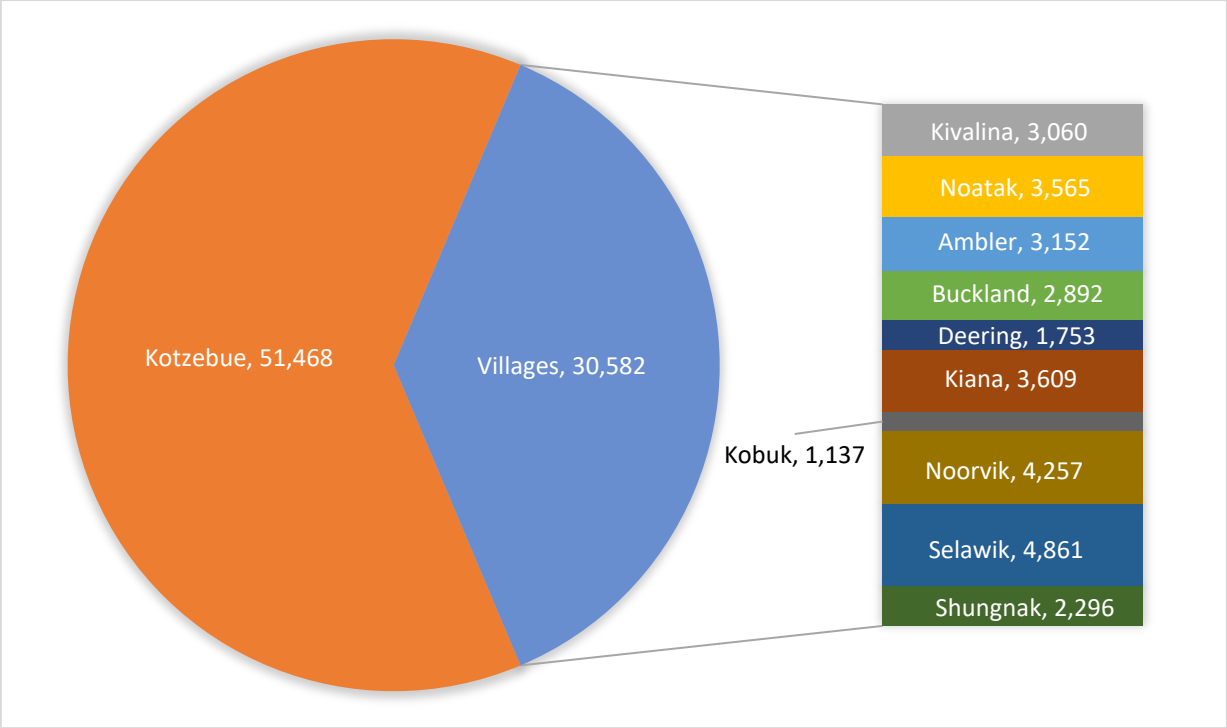


Figure 4. GHG emissions across the borough (tons of CO2e per year)

3.1 Primary GHG Emission Sources

As described in Section 2, petroleum-based fuels are the primary source of energy in the NAB and the largest contributor to GHG emissions. Heating, electricity generation, and transportation account for most liquid fuel use.

Heating oil, primarily Arctic-grade No. 1 fuel oil, is the largest source of GHG emissions across the borough and is used for residential and commercial building heat. A heat pump project currently in the pilot phase is expected to expand across the borough and reduce household heating oil consumption. Additional information on the project, including estimated fuel savings and associated GHG reductions, is provided in subsequent sections of this plan.

Diesel-fired electricity generation is the second largest single source of community GHG emissions. Four electric utilities serve the borough's 11 communities:

- Alaska Village Electric Cooperative (AVEC)
- Kotzebue Electric Association (KEA)
- City of Buckland
- Ipnatchiaq Electric Company (Deering)



Shungnak Independent Power Producer

Fuel used by these utilities is generally stored in bulk tank facilities owned or operated by the utilities. A later section of this plan discusses bulk fuel storage challenges within the borough communities.

NANA conducted a home heating survey in 2022 to identify the primary heating sources used by borough residents (McKinley Research Group, 2022). The results show considerable variation among communities, reflecting differences in fuel availability and cost. Figure 5 summarizes home heating sources by community.

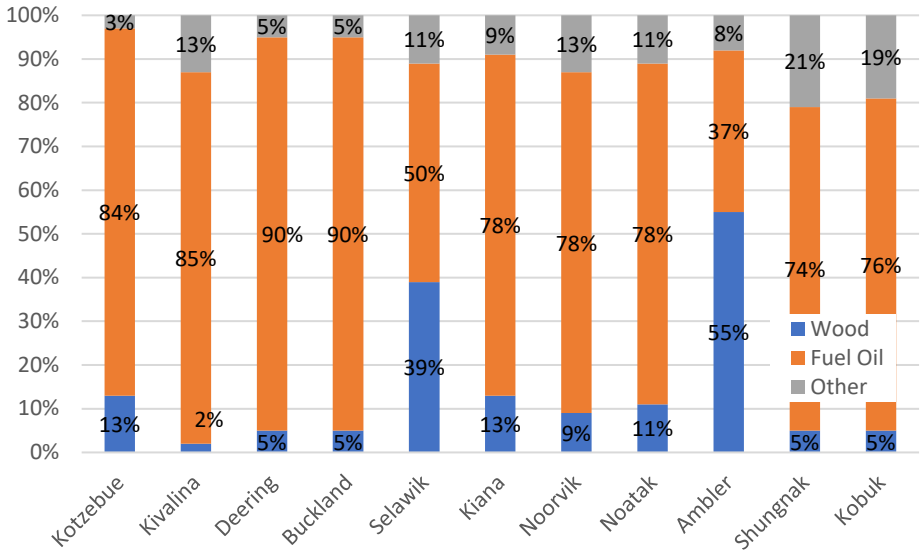


Figure 5. Summary of home heating fuels by community, 2022



Emissions from wood burning and fuel oil are calculated using standard conversion factors. For wood heating, it is conservatively assumed that households may use up to six cords of wood annually, consisting of a mix of spruce and birch. The "other fuels" category includes electricity and fuels such as propane. Direct emissions from these other fuels are not currently included in the GHG inventory because reliable consumption data are not readily available. Emissions associated with electric heating, however, are captured through diesel fuel used for electricity generation. Propane use is assumed to be minimal because of transportation challenges and limitations associated with very cold temperatures.

Transportation is the third-largest source of GHG emissions in the borough. Aviation fuel is used extensively for regional air travel and, as noted previously, nearly all aviation fuel is dispensed at Ralph Wien Memorial Airport in Kotzebue. Methods used to estimate aircraft fuel consumption are described in Appendix B.

Fuel use for ground and local water transportation is estimated based on vehicle ownership, assumed travel distances, and typical fuel efficiencies. Appendix B provides the assumptions and calculations used to develop these estimates. As noted above, some diesel used for transportation may be included in the heating oil estimate described in Section 2.2.

3.2 Secondary GHG Emission Sources

In addition to fuel combustion, other sources of GHG emissions in the borough include the following:

- *Wastewater treatment emissions.* Many borough communities use lagoons to manage and treat wastewater. Biological activity within these systems generates GHG emissions. Emissions are estimated using typical residential wastewater strength, expressed as biochemical oxygen demand (BOD), and average wastewater flow rates for each community.
- *Solid waste (SW) burning*. A portion of the solid waste generated in the borough is burned in household burn barrels, at community landfills, or in specialized burn cages. For this inventory, it is conservatively assumed that approximately 10% of generated solid waste is burned. Based on an estimated solid waste generation rate of 2 to 2.5 pounds per person per day, the assumed burning rate is approximately 0.2 pound per person per day. Emissions are calculated using applicable emission factors from 40 CFR Part 98.
- *Refrigerant leaks.* Releases of fluorocarbon refrigerants can contribute substantially to GHG emissions because of their high global warming potential (GWP). R-134a and R-410A are assumed to represent commonly used refrigerants in household appliances and equipment. For purposes of this inventory, each household is conservatively assumed to contain 0.1 pound of refrigerant, with 5% of that amount released annually through leakage. An average GWP of 1,759 is applied, based on GWPs of 2,088 for R-410A and 1,430 for R-134a (National Refrigerants 2018).

Additional information on the calculation methods, assumptions, and data sources used to develop the GHG emissions inventory is provided in Appendix B.

3.3 GHG Emissions Summary

Estimated total GHG emissions for the NAB are just over 80,000 tons of carbon dioxide equivalent (tpy CO2e) per year. Table 5 summarizes emissions by community and source and Figure 6 presents the total emissions by source category across the borough. Figure 7 provides the breakdown of CO2e emissions by liquid fuel source. The estimated total Alaska-wide GHG emissions are over 35 million tons annually; based on these estimates, the NAB represents just 0.2% of the state's total emissions.

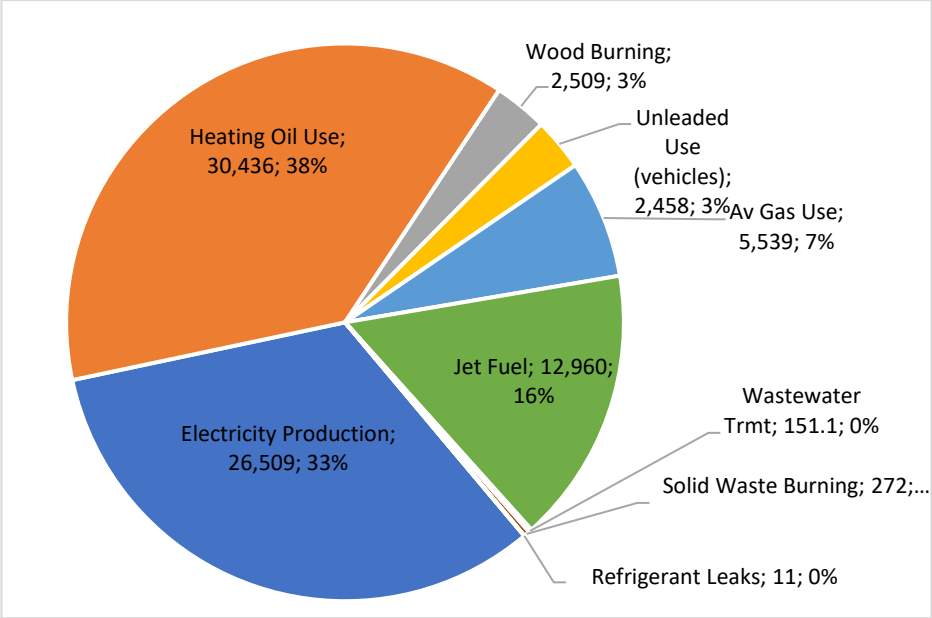


Figure 6. NAB GHG emissions by category (tons per year, CO2e)

Table 5. NAB GHG emissions summary

		Total CO2e Emissions (tons/year)				
Community	*Total CO2e Emissions (tons/year)*	*Fuel Use (including electricity)*	*Wood Heating*	*Solid Waste Burning*	*Wastewater Treatment*	*Refrigerant Leaks*
Kotzebue	51,468	49,061	1,013	120	64.2	4.7
Kivalina	3,060	3,019	28	8.7	2.3	0.7
Noatak	3,565	3,365	175	11.1	11.8	1.3
Ambler	3,152	2,557	578	10.5	5.6	1
Buckland	2,892	2,785	67	25.7	13.8	0.7
Deering	1,753	1,722	19	7.6	4.1	0.3
Kiana	3,609	3,457	126	16.9	9	0.7
Kobuk	1,137	1,104	26	3.1	3.7	0.3
Noorvik	4,257	4,114	101	27	14.4	0.7
Selawik	4,861	4,468	345	31	16.6	0.6
Shungnak	2,296	2,250	30	10.3	5.5	0.3
Borough Total	**82,050**	**56,397**	**2,509**	**271.9**	**151**	**11.3**
Red Dog Mine	162,488					
State of Alaska	36,740,000					

Note: Totals may not match sums of the communities due to rounding. Fuel use does not include aviation use.

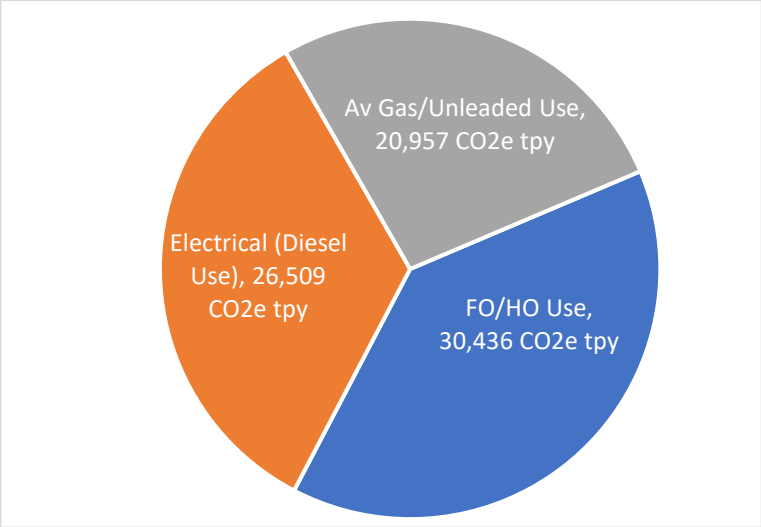


Figure 7. NAB GHG emissions (tpy CO2e) summary for liquid fuels (not including Red Dog Mine)

3.4 Industrial Sources of GHG Emissions

Table 5 presents estimated GHG emissions from each community in the NAB together with reported emissions from Red Dog Mine (RDM), the borough's largest industrial source. Reported RDM emissions are more than twice the combined emissions from the borough communities. Other "industrial" sources of GHG emissions in the borough are limited due to a lack of industry in the region. High energy prices also limit industrial opportunities.

The RDM values include only emissions reported under 40 CFR Part 98 and do not include mobile-source emissions or emissions associated with port operations. Including these additional sources would increase the total GHG emissions attributed to RDM.

RDM is currently pursuing several GHG reduction opportunities, including the potential development of a large solar energy project [8.8 MW] (ADN 2026).

4 GHG REDUCTION MEASURES

Fuel use in the three primary categories (transportation, heating, and electrical production) represents the largest source of GHG emissions in the borough. Opportunities to reduce transportation fuel use may be limited, particularly given the borough's reliance on aviation. However, reducing heating oil (HO) use and diesel consumption for electricity generation offers significant opportunities to reduce GHG emissions.

The 2022 Regional Energy Plan established the following fuel reduction goals for the borough and its communities:

- Decrease imported fuel use by 10% by 2020, as compared to 2008 metrics. The 2022 plan notes this goal as "accomplished." As documented in Appendix B, in 2024, just over 14% of borough electricity generation was supplied by non-diesel sources. Table ES-2 provides the estimated fuel use reductions against the 2008 baseline year. Based on 2024 data, the borough has achieved roughly a 2.1% reduction in total fuel use and roughly 7% reduction for just electrical fuel use. Importantly, while the borough population has not changed significantly since 2008, electrical demand has grown by over 5%.
- Decrease imported fuel use by 25% by 2030. This plan provides further information on progress toward this goal.
- Decrease imported fuel use by 50% by 2050.

Figure 8 illustrates fuel savings associated with alternative energy generation in the borough over the past decade (see table in Appendix B). Year-to-year variability in fuel savings is largely attributable to fluctuations in wind generation in Kotzebue and Selawik. Selawik's wind turbines ceased operating in 2019. More recently, alternative energy generation has increased steadily, driven in large part by the addition of solar-battery systems (battery energy storage systems, BESS) in Shungnak and Noatak. A larger BESS is also being installed into Kotzebue in 2026. A solar-BESS system is also coming on-line in Selawik in 2026.

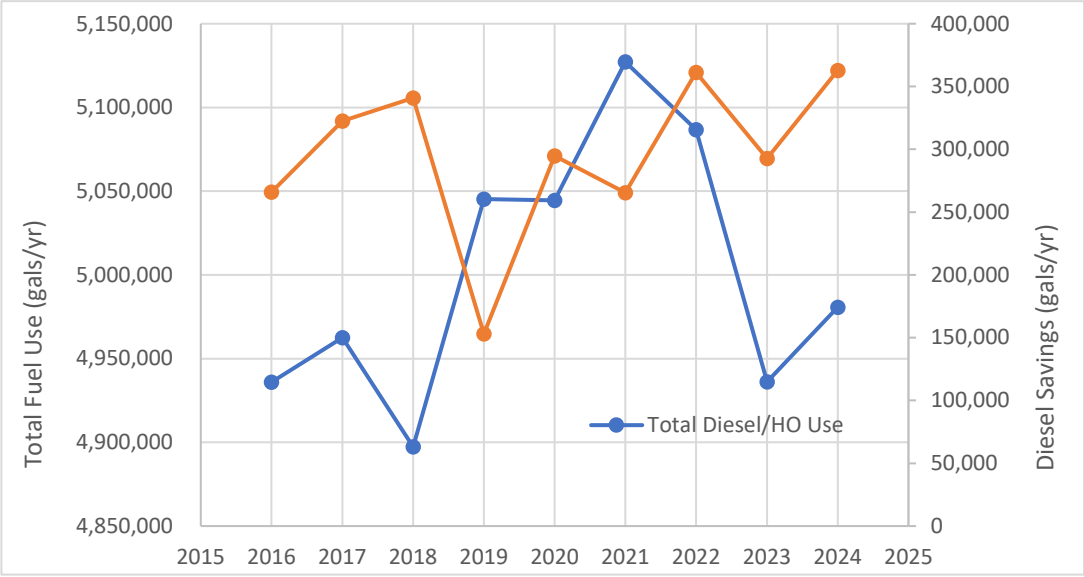


Figure 8. Borough fuel (diesel/heating oil) use and diesel savings from alternative energy

Achieving the 25% and 50% fuel reduction goals would produce substantial GHG reductions while providing additional benefits to borough communities. These include reduced expenditures on imported fuel, improved local air quality, lower risk of fuel spills, greater reliance on local energy resources, expanded economic development opportunities, potential new revenue sources, and increased opportunities for local workforce development. Reducing fuel costs is particularly important because high energy expenditures can constrain economic activity and investment within the borough.

The borough has established an Energy Steering Committee (ESC), which meets twice annually to review energy goals, ongoing projects, and progress toward implementation. The ESC supports continued development of measures intended to achieve the fuel reduction goals described above. Several of these measures, many of which were identified in the Regional Energy Plan, are summarized in the table below and described in greater detail in the following subsections.

4.1 Opportunities and Implementation Details

The implementation of the potential GHG reduction and energy reduction measures described in this section will require appropriate planning and support. The following table provides a high-level summary of how each measure may be implemented.

Table 6. GHG reduction measures and implementation details

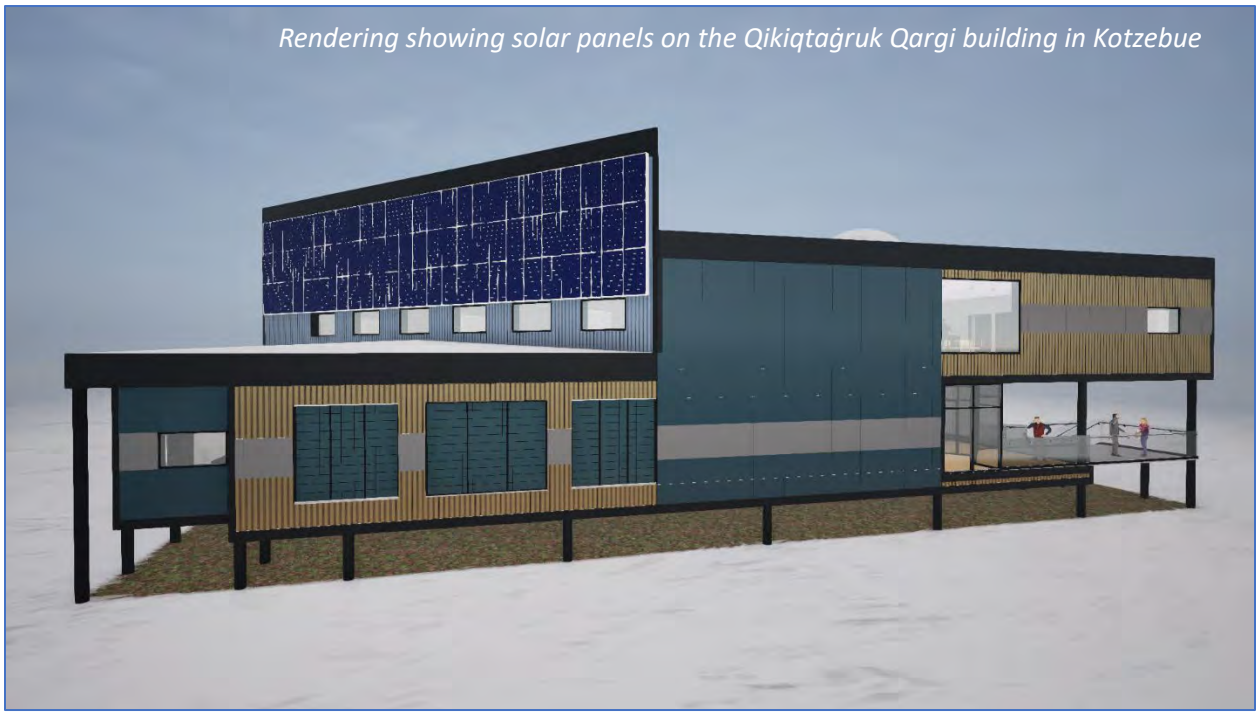
Measure	*Specific Opportunities [Estimated Costs]*	*Timing/Schedule*	*Responsible Agency/Entity*
Increased Solar-BESS	• Implement solar-BESS in additional communities (Ambler, Selawik, Kiana, Noorvik, Kivalina, Buckland, Deering) [Approx. $8,300 per kW of Solar PV] • Increase sizes of existing systems (Deering, Buckland, Kotzebue, Noatak) [Approx. $8,300 per kW of Solar PV]	• DOE OCED grant will support additional communities, 2026 – 2029 • Kotzebue is adding over 700kW of solar through an ongoing project (NVOK). • System design (per community) and implementation take 3-4 years pending funding availability	Northwest Arctic Borough or Tribal Independent Power Producer (IPP)
Electrical Transmission Interties	• Kobuk-Shungnak line needs replaced; funding included in recent DOE-OCED grant award; design is ongoing • Potential Ambler-Shungnak line provides next best opportunity [$20 million estimate] • Other feasible lines include Noorvik-Kiana and/or Noorvik-Selawik [$15-25 million estimate]	• Implementation timeframe for Kobuk-Shungnak replacement is 2-3 years • Ambler-Shungnak timeframe is 3-4 years once funding is received; Right-of-Way [ROW] is currently in place • Other lines are 4+ years away	AVEC, NAB, or Tribal IPP is likely owner of the transmission lines

Measure	*Specific Opportunities [Estimated Costs]*	*Timing/Schedule*	*Responsible Agency/Entity*
Building Weatherization	Upgrade/weatherize buildings across the borough [individual projects can be in the $000s; larger/grouped projects can be significantly more]	1 – 5 years pending available funding and grant opportunities	NAB or Tribes to administer grant opportunities
Heat Pump Implementation	• Provide heat pumps to individual residences across the borough [Approx. $8,000 per household] • Existing OCED project will provide 26 heat pumps in 2026; more than 800 in total	DOE OCED grant provides initial funding to support: 2026 – 2029;	NAB to oversee funding for across borough residences
Increase Wind Use	• Add capacity to Kotzebue, Deering, and/or Buckland [widely varying costs] • NVOK wind tower cancelled by EPA in 2025 (2 @ 1MW each); • Identify future funding opportunity for Selawik (1 MW possible?)	Timeframe is approximately 5 years pending available funding	Existing utilities or tribal IPPs to implement/ oversee projects
Water and Sanitation System Upgrades	Modify/improve existing water or sewage systems, upgrading heat transfer systems from power plants and replacing pumps/blowers with more efficient models [widely varying cost estimates]	Typical upgrades take approximately 3 years minimum to implement	ANTHC to oversee most projects
Housing Upgrades or Replacements	Renovate and/or replace housing in many communities [widely varying cost estimates] to improve energy efficiency	Typical new housing or large renovation projects take at least 3 years to implement	Northwest Inupiat Housing Authority (NIHA) to oversee most housing projects
Increased Biomass Implementation (Community and/or Residential)	• Add biomass heating capability to Ambler water system [<$1 million] • Add potential biomass heating for Kobuk city buildings [<$1 million] • Add potential biomass heating for various facilities in Noatak [$500k - $2 million] • Provide biomass heating to Shungnak (various buildings/systems) [$500k - $2 million] • Provide grant or financing opportunities for more residential wood stoves in Kobuk, Ambler, Shungnak, or Noatak [$10,000 - $20,000 per house]	Most projects will take at least 2 years to implement, pending available funding	NAB in combination with Tribes and/or Cities
Community Energy Efficiency Projects	• LED light bulb distribution and fixture replacements [$950 per household] • LED streetlight implementation [$400 per streetlight]	• Residential LED distribution: 1 year to implement	NAB and individual City or Tribal Councils

Measure	*Specific Opportunities [Estimated Costs]*	*Timing/Schedule*	*Responsible Agency/Entity*
		• Community LED streetlights: 1-2 years to implement	
Hydropower Implementation	Implement Upper Cosmos Hills hydropower opportunity (Kogoluktuk Hydro) [$>80 million]	>5 years to implement	NAB, NANA, and/or AVEC

4.2 Solar and Battery Energy Systems

The recent improvements and cost reductions in solar panels and lithium-ion batteries present opportunities to implement these technologies in microgrid communities such as those in the NAB. The projects previously completed in Kotzebue, Deering, Buckland, Shungnak, and Noatak demonstrate the opportunity for energy savings from these systems. Additional opportunities exist to increase the size of these systems (both solar and BESS) and to implement these systems in other communities. The ongoing DOE OCED and other grants will implement solar/BESS in Selawik (in 2026), Kiana, Noorvik, Ambler, Kivalina, Deering, and Buckland. Kotzebue Electric Association (KEA) is also planning to install additional BESS capability (in 2027) and the Native Village of Kotzebue (NVOK) will be adding 700kW of solar panels in Kotzebue in 2027. NVOK will sell the power to KEA as an IPP. The projected energy savings from these future projects is equivalent to just over 250,000 gallons of diesel equivalent per year.



Rendering showing solar panels on the Qikiqtaġruk Qargi building in Kotzebue

In addition to these grid-related projects, smaller, building-sized solar projects should be considered. An example of these projects includes the solar panels installed on many of the bulk water tanks in the region. The NVOK is planning for the installation of solar panels on their Qikiqtaġruk Qargi building currently under construction in Kotzebue. This building will include 28kW of solar panels that may offset 10-15% of the building's power requirements annually. Solar panels for commercial buildings are a proven method of reducing building energy consumption with minimal maintenance requirements. Even in the high-construction cost environment of the NAB, these projects have payback periods of less than 20 years and many of the panels offer lifespans exceeding these payback periods.

4.3 Intertie Transmission Lines

Each of the communities in the NAB currently operates its electrical system as a small microgrid, with the exception of Shungnak and Kobuk, which have an existing intertie. The operations of microgrids with significant load variations and limited operational efficiencies present opportunities to reduce GHG emissions. Interties between communities will improve efficiency, reliability, and other factors.

The existing intertie between Shungnak and Kobuk provides a good example of the benefits that can be gained. Although this 10.5-mile transmission line is now 30 years old, it continues to provide the primary power for Kobuk. This enables the recently implemented Shungnak solar-battery system to share power to Kobuk and to minimize the operational requirements for the Kobuk power plant. In fact, Kobuk reports minimal diesel use in 2022 for their power plant (AEA 2022). Sharing and increasing the load on the electrical generators in the region will improve the efficiency of these engines; a typical diesel generator operates at maximum efficiency when it is running at levels above 70 – 80% (Powerguard 2023).



Shungnak solar array

Development of inter-community transmission lines will require coordination between the large landholders in the region, including various federal agencies and NANA. Some potential routes will also present engineering challenges due to the local terrain and waterbodies that may need to be crossed. A recent study evaluated potential routing options, permitting requirements, and costs for these potential interties (Kuna 2023). The replacement of the Shungnak-Kobuk intertie that is planned and funded through the DOE-OCED grant will provide critical information for the planning of future interties and the costs of these connections. This replacement is planned for 2027, using a medium voltage direct-current line. This relatively new approach for power transmission should provide a benefit of simplifying the overall operations of the transmission line as compared to a standard alternating current (AC) line. DC transmission also requires fewer conductors than AC, reducing the material requirements and potentially reducing construction costs.



Deering power lines

4.4 Household Weatherization/Energy Improvements

Home and building heating is the largest use of fuel in the borough. The NANA Home Heating Survey found that many households struggle with heating costs and maintaining adequate indoor temperatures (McKinley Research 2022). According to the 2022 Regional Energy Plan, only 32% of homes in the region had received weatherization funding, and 47% were constructed before 1980. Older homes generally have lower energy efficiency and higher heating requirements than newer or weatherized homes. Improving housing conditions through replacement, weatherization, and other energy-efficiency measures can reduce household heating costs while also lowering GHG emissions.



Photo courtesy of AHFC.

Several organizations, including the Northwest Inupiat Housing Authority (NIHA), Alaska Housing Finance Corporation (AHFC), and Rural Alaska Community Action Program, Inc. (RurAL CAP), support new housing construction, rehabilitation, financing, energy audits, and weatherization. The ongoing DOE-OCED project, combined with other funding, includes weatherization improvements for homes that will receive new heat pumps, as described in the following section. These improvements are anticipated to result in significant heating reductions (at least 15-20% per house).

4.5 Wind Energy Additions

Several borough communities currently use wind turbines to reduce diesel consumption for electricity generation, including Kotzebue, Deering, and Buckland. Other communities have implemented wind projects, but maintenance requirements and severe Arctic conditions have resulted in turbines becoming non-operational after several years. Selawik's wind turbines, for example, ceased operation in 2019.


Kotzebue wind turbines

Where wind generation remains viable (typically closer to the coast), additional capacity and opportunity may be possible. Newer turbine technologies may also warrant evaluation in other communities because of improvements in design, durability, and maintenance requirements. Funding previously awarded to NVOK for the installation of two additional wind turbines in Kotzebue was canceled in 2025. Those turbines were expected to provide substantial additional diesel savings for the community. Based on conservative estimates comparable to output from the existing turbines, the two proposed turbines could have generated approximately 3.5 MWh annually and reduced diesel consumption by roughly 240,000 gallons per year.

4.6 Hydroelectric Power Generation

Hydroelectric power can provide a reliable source of low-carbon electricity. Several rivers and streams in the borough have been evaluated for potential hydropower development (WHPacific 2014). In some locations, hydropower generation could exceed current community electricity demand, creating opportunities for increased use of electric heating and supporting future economic development. However, many borough communities are located in relatively flat areas without suitable hydropower resources nearby.

The Upper Kobuk area presents one of the strongest opportunities for hydropower development. A 2014 study identified an approximately 700-kW project on the Kogoluktuk River east of Kobuk as the most feasible option in this area (WHPacific 2014). The project could provide continuous power to Kobuk, which is connected to Shungnak through the existing intertie. Extending the intertie to Ambler could further expand use of the available generation. Appendix B provides some additional details on the Kogoluktuk hydro opportunity.


Proposed Kogoluktuk River intake site

The project is estimated to reduce diesel consumption by nearly 400,000 gallons annually while providing additional electrical capacity to accommodate future community growth and potential economic development.


Kogoluktuk River in the Upper Kobuk

4.7 Biomass/Wood Heating

Wood and other biomass fuels can reduce reliance on heating oil and lower overall GHG emissions from building heating. In Northwest Alaska, biomass heating can provide an alternative to imported fuel oil where suitable local wood resources are available. As noted in the 2022 NANA Home Heating Survey, wood is a key heat source for many households across the borough.

Ambler and Kobuk have historically encouraged greater use of wood heating through measures such as community wood storage facilities. Additional opportunities may exist in communities with access to nearby wood resources. However, several borough communities, including Deering, Buckland, Kivalina, Selawik, and Kotzebue, are located in areas with few to no local tree resources.

If the estimated current wood heating use (approximately 1,100 cords per year) across the borough is increased by 10-15%, this may be anticipated to reduce heating oil requirements by up to 3,000 gallons per year.

4.8 Residential/Commercial Heat Pumps

Cold-climate air-source heat pump technology continues to improve, with some newer systems capable of operating at temperatures as low as -20°F. When paired with increased renewable electricity generation, heat pumps can reduce GHG emissions by decreasing household heating oil consumption. However, heat pump deployment will increase community electrical loads, emphasizing the importance of continued implementation of solar-battery and other alternative energy options. For homes with heat pumps, a secondary heating source is still necessary because heat pump efficiency declines as temperatures decrease and some units may not operate during extreme cold.



Air-source heat pump

The NAB's ongoing DOE-OCED project includes the installation of up to 800 heat pumps throughout the borough. Midea™ heat pumps are currently planned for the project; these units are capable of operating to approximately 0°F. A pilot installation of 26 units is planned for 2026, with additional installations anticipated in subsequent years.

Based on the borough's heat pump calculator, installation of a heat pump is estimated to reduce heating oil consumption by approximately 260 gallons per residence annually while increasing electricity consumption by approximately 3,300 kWh per residence per year.

4.9 Water/Sanitation System Improvements

The cold climate of the NAB requires measures to prevent water and sewer piping and associated infrastructure from freezing. In many communities, this includes circulating heated glycol along water and sewer lines or providing heat trace to these lines. Waste heat from diesel power plants can be used to heat the glycol and may also be used to help maintain above-freezing temperatures in the community water storage tanks.



Selawik water tank with solar panels

Additional system improvements, such as more efficient pumps and treatment processes, may reduce electrical demand and associated GHG emissions. Several communities have also installed solar thermal systems on water storage tanks to supplement heating requirements. Many of these systems are now aging or non-operational and may require repair or replacement.

The City of Kotzebue recently installed new electric boilers to heat the glycol for its water system. These boilers make use of available electricity, including excess generation from renewable energy sources. Similar electric boiler systems may warrant consideration at water treatment facilities in other borough communities where sufficient electrical capacity and renewable generation are available.

4.10 Energy Efficiency Projects

Improving energy efficiency can reduce GHG emissions by lowering electricity and heating demand. One of the most accessible opportunities is continued adoption of LED lighting. Most communities have converted streetlights to LEDs, but LED lighting has not been universally adopted in homes and other buildings.

Replacing older household appliances with more energy-efficient models can also reduce electricity consumption, particularly for frequently used equipment such as refrigerators, freezers, washers, and clothes dryers. Additional opportunities may include replacing conventional water heaters with more efficient systems, including on-demand water heaters where appropriate.

Financial incentives or subsidy programs may be needed to encourage broader adoption of these energy-efficiency measures, particularly where the upfront cost of replacement equipment presents a barrier.

4.11 Funding Mechanisms

Several funding mechanisms may be available to support continued and new fuel reduction measures. The ongoing DOE-OCED grant is expected to provide substantial reductions in fuel use through the heat pump and solar-BESS projects described above. The NAB may also use the Village Improvement Fund (VIF) to support smaller-scale energy projects and fuel reduction initiatives. Similarly, the NANA Village Economic Improvement (VEI) fund provides grants to tribes and cities in the region for potential capital projects, including energy efficiency projects. Weatherization projects may also be eligible for funding through the Alaska Housing Finance Corporation (AHFC).

The Alaska Energy Authority (AEA) has supported generator upgrades through the Rural Power System Upgrade (RPSU) program and may also provide funding opportunities for renewable and alternative energy projects. AEA also funds the Bulk Fuel Upgrade (BFU) program through periodic state funds and other funding mechanisms. The ongoing BFU program performs inspections of community tank farms to assess their continued operability and maintenance or replacement project needs and funding requirements.

The Denali Commission is an important source of potential federal funding, often providing matching funds for federal or state grants where other funds may not exist to enable the “completion” of the funding for particular projects. Of note, the Denali Commission, in partnership with the Alaska Native Tribal Health Consortium (ANTHC), is currently funding the replacement of the bulk fuel tank farms in Kivalina, Noatak, and Kobuk.

Long-term operation and maintenance of alternative energy systems, including solar-battery projects, may be supported through establishment of Independent Power Producers (IPPs) in participating communities. Under this model, the IPP (typically owned by the tribe) would own or operate the generation system and sell electricity to the local utility, such as AVEC. This arrangement can allow the utility to continue receiving applicable Power Cost Equalization (PCE) support while incorporating locally generated renewable power. PCE remains an important mechanism for maintaining affordable electricity rates in rural Alaska.

Where IPP revenues exceed operation and maintenance costs, these funds may be available to support other community priorities or to support the continued application of energy efficiency or alternative energy opportunities.

5 BENEFITS ANALYSIS

This section provides a summary of the benefits that may be recognized through the implementation of the energy reduction or alternative energy measures described in Section 4. These benefits are listed in Table 7, alongside an estimation of the potential GHG emissions reductions for each, based on the calculated GHG emissions from Section 3.3. A summary of the potential diesel savings after implementation of the projects that are currently underway or with near-term opportunity is provided in Figure 9.

Table 7. Summary of GHG reduction measures and potential benefits.

GHG Reduction/ Alternative Energy Measure	*Potential Advantages/Benefits*	*Relative GHG Reduction Potential*
Solar-Battery Systems	- Decreased diesel fuel use; handling, storage, and spill potential - Batteries provide short-term system reliability - Improved air quality	***Significant*** *Ongoing projects:* >250,000 gpy diesel savings (2,000 tpy CO2e reduction)
Heat Pump Adoption/Use	- Decreased fuel oil use for heating - Improved indoor air quality - Decreased fuel oil use, handling, storage, spill potential	***Significant*** *Ongoing projects:* ~200,000 gpy HO savings (2,200 tpy CO2e reduction)
Increased Wind Energy	- Decreased diesel fuel handling, storage, spill potential - Improved air quality	***Significant*** *Potential Kotzebue Project:* 240,000 gpy diesel savings (2,712 tpy CO2e reduction)
Hydroelectric Power Implementation	- Reliable, green energy source - Reduced energy expenditures - Excess power used for development - Decreased diesel use for electrical production - Decreased diesel handling/spillage potential	***Significant*** Potential Kogoluktuk Hydro: ~360,000 gpy diesel savings (~4,000 tpy CO2e reduction)
Intertie Transmission Lines	- Overall decreased diesel use, handling, storage, and spill potential - Increased electrical system reliability, efficiency; - Increased opportunities for alternative energy	***Significant*** Inter-community lines: ~175,000 gpy diesel savings (up to 20% diesel reduction for electrical production; not including Kotzebue, Noatak, Kivalina); 1,900 tpy CO2e reduction
Building Weatherization	- Decreased fuel oil use for heating, handling, storage, and spill potential - Improved indoor air quality	***Significant*** ~275,000 gpy heating oil savings (up to 20% of residential heating oil use); ~3,000 tpy CO2e reduction
Increased Biomass/Wood Heating	- Decreased fuel oil use for heating - Decreased fuel oil handling, storage, and spill potential - Increased local fuel source	***Moderate*** ~3,000 gal/yr HO savings (10-15% increase in wood use); ~200 tpy CO2e reduction

Notes: Relative GHG reduction potentials are classified as follows: Significant = >1,500 tpy CO2e reduction potential; Moderate = >200 tpy CO2e reduction potential

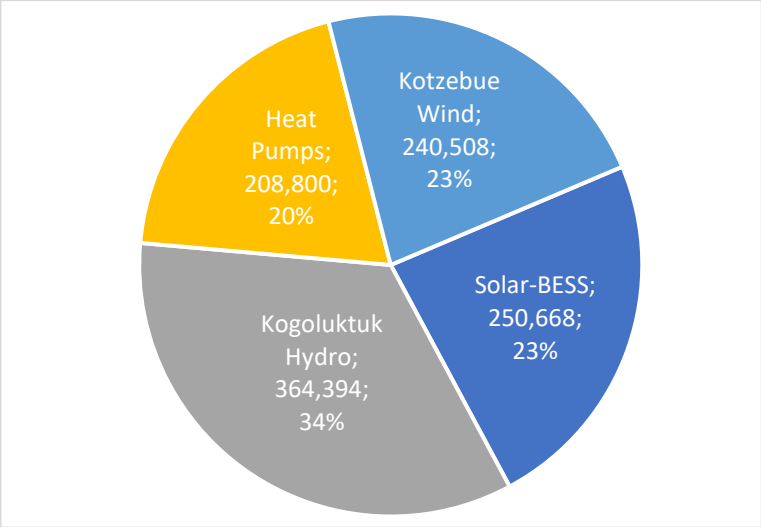


Figure 9. Near-term potential diesel savings (in gallons per year) from potential projects.

5.1 Co-Pollutant Analyses

Implementation of the GHG reduction measures described above would also provide air quality benefits, particularly where the measures reduce fuel combustion. Fuel used for heating, electricity generation, and transportation also produces air pollutants such as fine particulate matter (PM2.5) and nitrogen oxides (NOx). Based on USEPA emission factors, the following approximate reductions may occur for each ton of CO2 emissions avoided (USEPA 1996):

- *Diesel combustion* – A reduction of 1 ton of CO2 is associated with reductions of approximately 18.7 pounds of PM2.5 and 265 pounds of NOx.
- *Unleaded combustion (and jet fuel combustion)* – A reduction of 1 ton of CO2 is associated with reductions of approximately 6.3 pounds of PM2.5 and 102 pounds of NOx.

The anticipated reductions in diesel use through the ongoing DOE-OCED and related funding for the continued buildout of solar-BESS and heat pump installations in the borough, coupled with about half of the building weatherization opportunities are anticipated to result in reductions in co-pollutant emissions as summarized in Table 8. Long-range (2040) emissions (with associated reductions) are based on the implementation of the potential Kogoluktuk hydro project, additional building weatherization measures, implementation of additional wood heating, the implementation of the additional Kotzebue wind turbines, and some intertie implementations. See Table ES-2 for the corresponding fuel use reductions included in these estimated emissions.

Table 8. Summary of co-pollutant emissions and reductions (diesel and heating oil use only).

	Year (emissions in tpy)		
Pollutant	*2024 (current)*	*2030 estimated*	*2040 estimated*
CO2e	57,135	50,497	40,949
PM2.5	534	472	383
NOx	7,570	6,690	5,426

5.2 Workforce Development

Implementation of the proposed GHG reduction measures also presents opportunities to support workforce development within the borough. Long-term success will depend on having appropriately trained local personnel to install, operate, maintain, and optimize new systems.



Alaska Technical Center, Kotzebue

Electricians, HVAC technicians, and water and wastewater system operators will be needed to support implementation and ongoing operation of many of these measures. Training for these occupations is available through the Alaska Technical Center (ATC) in Kotzebue. As projects advance toward implementation, funding should be identified to support both training programs and student participation. NANA and the borough have recently supported training opportunities to support these occupations in anticipation of the need for the ongoing DOE-OCED projects.

6 AUTHORITY TO IMPLEMENT

Implementation of GHG reduction measures will require coordination among the appropriate agencies, local governments, tribes, utilities, and landowners. Within the NAB, infrastructure and development projects may require review and approval by the NAB Planning Department and Planning Commission in accordance with Title 9 of the NAB Code. Projects implemented within individual communities should also be coordinated with and approved by the applicable tribal council and/or city council. Noatak is the only borough community without both forms of local government.

Where a project requires use of a specific site, authorization or agreement from the landowner will also be necessary.

As projects advance, the NAB will consult with affected tribes and communities to obtain appropriate authorization and support for GHG reduction measures pursued through the appropriate granting program/agency. The Quality Assurance Project Plan (QAPP) prepared for NAB CPRG activities identifies stakeholders and contact information to support consultation with tribes and cities (Kuna 2024).

6.1 Environmental Permits

GHG reduction projects may require federal, state, and local permits or approvals depending on their location, scope, and potential impacts. For example, construction activities that disturb one acre or more may require coverage under the State of Alaska Construction General Permit for stormwater discharges. Projects involving discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, may require authorization under Section 404 of the Clean Water Act (CWA) from the U.S. Army Corps of Engineers (USACE).

Modifications to community water or wastewater systems may require review and approval by the Alaska Department of Environmental Conservation (ADEC). Construction of certain enclosed structures may also require plan review and approval by the State Fire Marshal.

Projects involving federal funding or other federal actions may require environmental review under the National Environmental Policy Act (NEPA). NEPA reviews may also be required when a project requires a federal permit or approval that constitutes a federal action.

7 SUMMARY

The Northwest Arctic Borough includes 11 remote communities that are culturally connected through a shared Inupiaq heritage and culture. The region's remote location and harsh winters, coupled with a lack of road or electrical intertie connections result in high energy prices for residents and commercial/government entities. In 2025, stove (fuel) oil prices were at least $7 per gallon, and 2026 prices are higher. The Borough developed a Regional Energy Plan in 2022 that provided a summary of current energy sources and uses across the 11 communities. That plan also outlined energy reduction goals that the borough continues to track and implement:

- Decrease imported fuel use by 10% by 2020, as compared to 2008 metrics.
- Decrease imported fuel use by 25% by 2030.
- Decrease imported fuel use by 50% by 2050.

As noted in section 4, based on 2024 estimates, electrical diesel usage has decreased by roughly 7%, while total electrical diesel and heating oil usage has only decreased by 2.1%. It is important to note that overall electrical consumption has increased by over 5% since 2008.

Numerous projects are ongoing to assist with assist with decreasing both electrical diesel usage and residential heating oil usage. These include projects to install new solar power production capacity, install new BESS capacity, and to provide air source heat pumps to residences throughout the borough. Coupled with ongoing projects to improve residential energy efficiency (weatherization), these projects are anticipated to result in more than 500,000 gallons of heating oil/diesel reduction (not counting potential growth). This will reduce GHG emissions by more than 7,000 tpy CO_2e. The continued development of wind, wood, and hydroelectric opportunities in future years will further reduce heating oil/diesel requirements, while also reducing GHG emissions. Importantly, the reduced reliance upon imported fuels may also provide opportunities for future economic development and improved quality of life for residents in the borough.

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APPENDIX A

Community Profiles



Ambler

Ivisaappaat

Native Village of Ambler: 907-445-2238
City of Ambler: 907-445-2122 **AVEC:** 907-561-1818

Demographics –
Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Ivisaappaat
Population: 263
Avg. Household Size: 3.60
Median Household Income: $41,563

Access –
Barge Access: Seasonal / None (depending on river water levels)
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 2,400 ft x 60 ft
Runway 2: 3,000 ft x 60 ft

Climate –
Average Summer Temperature: 56°F
Average Winter Temperature: -1°F
Heating Degree Days: 15,670

Heat & Power Costs –
***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:** $6.44 **2025:** $6.58
Cost of Electricity (2025): $0.86 per kWh
Cost of Electricity, after PCE (2025): $0.29 per kWh

Tank Farms -
Ownership: Ambler Traditional Council, Northwest Arctic Borough School District (NWABSD), AVEC, City of Ambler
Bulk Fuel Capacity: *See info in Appendix B*
Condition: Deteriorating (new tank farm under construction, 2026)

Electric Utility –
Alaska Village Electric Coop (AVEC)

Power Demand (2025)–
Residential Power Sold: 506 MWh
Community Facility Power Sold: 297 MWh
Non-PCE Power Sold: 407 MWh
Total Power Sold: 1.21 GWh
Powerhouse (PH) Consumption: 49.17 MWh
Total Power Sold & PH Consumption: 1.26 GWh

Power System (2025) –
Fuel Efficiency: 14.71 kWh/gal diesel
Line Loss: 3.5%
Number of Community Buildings on PCE: 12
Community PCE Power Use of Total Allowed: 74%
(162,862 kWh - used / 220,920 kWh – total allowed)

Power Generation Infrastructure –
Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	S60K4c	363 kW
Cummins	K19G2 1200	271 kW
Cummins	K19G2 1800	397 kW

Wind Turbine(s): None
Section 1 **Utility-Scale Solar PV:** 8.4 kW installed for water plant, behind the meter; 1 kW installed on each residence, not grid-tied

Battery Storage System: None

Heat Recovery –
Facilities Served: Water Treatment Plant
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –
Ownership: City of Ambler
Water System: Circulating Loop(s)
Wastewater System: Gravity

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/ambler/fuel)*



Buckland
Nunatchiaq

Demographics –
Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Nunachiak
Population: 588
Avg. Household Size: 5.65
Median Household Income: $56,136

Access –
Barge Access: Seasonal
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 3,200 ft x 75 ft
Runway 2: None

Climate –
Average Summer Temperature: 52 °F
Average Winter Temperature: -2 °F
Heating Degree Days: 15,751

Heat & Power Costs (2026) –
***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:** $6.44 **2025:** $6.58
Cost of Electricity (2025): $0.50 per kWh
Cost of Electricity, after PCE (2025): $0.20 per kWh

Tank Farm –
Ownership: Native Village, City, School, AKDOT
Tank Capacity: 297,300 gal
Status / Year Built: Acceptable (see info in Appendix B)

Electric Utility –
City of Buckland

Power Demand (2025) –
Residential Power Sold: 859 MWh
Community Facility Power Sold: 136 MWh
Non-PCE Power Sold: 836 MWh
Total Power Sold: 1.83 GWh
Powerhouse (PH) Consumption: 52.2 MWh
Total Power Sold & PH Consumption: 1.88 GWh

Power System (2025) –
Fuel Efficiency: 13.80 kWh/gal diesel
Line Loss (2023): 3.1%
Number of Community Buildings on PCE: 12
Community PCE kWh Use of Total Allowed: 23%
(114,334 kWh – used / 493,920 kWh – total allowed)

Power Generation Infrastructure –
Diesel Engines:

Manufacturer	Model	Capacity	Year Built
Caterpillar	3456	475 kW	2006
John Deere	6135	400 kW	2021
John Deere	6135	310 kW	2021

Wind Turbine(s):

Manufacturer	Model	Capacity	Year Built
Northern Power Systems	Northwind 100	100 kW	2013
Northern Power Systems	Northwind 100	100 kW	2013

Solar PV:

Installer	Inverter	Capacity	Year Built
BoxPower	SMA Tripower	45.99 kW	2019

(*Additional 10.13 kW installed for water plant, behind the meter)*

Battery Storage System:

Manufacturer	Model	Capacity	Year Built
SAFT	Intensium Mini-M	277 kW / 218 kWh	2019

Heat Recovery –
Facilities Served: City office, new WTP, old WTP / Washeteria
Opportunities to Expand Waste Heat: Yes

Water & Wastewater –
Ownership: City of Buckland
Water System: Circulation Loop(s)
Wastewater System: Gravity

\.Cost.of.Diesel.™ .Gasoline.source¿DCRA.regional.value.(https¿ ~~ak~~energygateway¡alaska¡edu ~~explore communities buckland fuel~~).



Demographics –

Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Ipnatchiaq
Population: 187
Avg. Household Size: 3.82
Median Household Income: $55,625

Access –

Barge Access: Seasonal
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 3,320 ft x 75 ft
Runway 2: 2,660 ft x 75 ft

Climate –

Average Summer Temperature: 50 °F
Average Winter Temperature: 0 °F
Heating Degree Days: 15,751

Heat & Power Costs –

***Cost of Diesel Fuel (gal): 2024:** $6.16 **2025:** $6.11
***Cost of Gasoline (gal): 2024:** $6.90 **2025:** $6.32
Cost of Electricity (2025): $0.68 per kWh
Cost of Electricity, after PCE (2025): $0.22 per kWh

Tank Farms -

Ownership: City of Deering, Northwest Arctic Borough School District (NWABSD), Ipnatchiaq Electric Company, Deering IRA
Bulk Fuel Capacity: see info in Appendix B
Condition: Acceptable

Electric Utility –

Ipnatchiaq Electric Company (Subdivision of City)

Power Demand (2025) –

Residential Power Sold: 294 MWh
Community Facility Power Sold: 179 MWh
Non PCE Power Sold: 416 MWh
Total Power Sold: 889 MWh
Powerhouse (PH) Consumption: 33.0 MWh
Total Power Sold & PH Consumption: 922 MWh

Power System (2025) –

Fuel Efficiency: 12.72 kWh/gal diesel
Line Loss: 7.6%
Number of Community Buildings on PCE: 5
Community PCE kWh Use of Total Allowed: 95% (149,713 kWh - used / 157,080 kWh – total allowed)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity	Year Built
John Deere	6068TDW56	100 kW	2015
John Deere	6081AFM75	180 kW	2007
Cummins	LTA10G3	175 kW	1999
Cummins	LTA10G3	175 kW	1999

Wind Turbine(s):

Manufacturer	Model	Capacity	Year Built
Northern Power Systems	Northwind 100	100 kW	2014

Utility-Scale Solar PV:

Installer	Inverter	Capacity	Year Built
BoxPower	SMA Tripower	48.51 kW	2019

(*Additional 11.13 kW installed for water plant, behind the meter)*

Battery Storage System:

Manufacturer	Model	Capacity	Year Built
SAFT	Intensium Mini-M	277 kW/ 109 kWh	2019

Heat Recovery –

Facilities Served: Washeteria/WTP
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –

Ownership: City of Deering
Water System: Delivery; Washeteria
Wastewater System: Vacuum, Honey Bucket

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/deering/fuel)*



Kiana

Katyaak

Demographics –
- **Native Village Status**: Federally Recognized Tribal Council
- **Alaska Native Name:** Katyaak
- **Population**: 384
- **Avg. Household Size**: 4.49
- **Median Household Income**: $66,719

Access –
- **Barge Access**: Seasonal
- **Runway Ownership**: State
- **Runway Surface**: Gravel
- **Runway 1**: 3,400 ft x 100 ft
- **Runway 2**: None

Climate –
- **Average Summer Temperature**: 55 °F
- **Average Winter Temperature**: 0 °F
- **Heating Degree Days**: 15,812

Heat & Power Costs –
- ***Cost of Diesel Fuel (gal)**: **2024**: $6.96 **2025:** $8.37
- ***Cost of Gasoline(gal)**: **2024**: $6.96 **2025:**$7.47
- **Cost of Electricity (2025)**: $0.74 per kWh
- **Cost of Electricity, after PCE (2025)**: $0.28 per kWh

Tank Farm –
- **Ownership**: City of Kiana, AVEC, Northwest Arctic Borough School District (NWABSD), Dorsey Family, Native Store, AKDOT

Details: See info in Appendix B
Condition: Acceptable

Electric Utility –
- **Alaska Village Electric Coop (AVEC)**

Power Demand (2025) –
- **Residential Power Sold**: 743 MWh
- **Community Facility Power Sold**: 346 MWh
- **Non-PCE Power Sold**: 566 MWh
- **Total Power Sold**: 1.65 GWh
- **Powerhouse (PH) Consumption**: 36.13 MWh
- **Total Power Sold & PH Consumption**: 1.69 GWh

Power System (2025) –
- **Efficiency**: 14.88 kWh/gal diesel
- **Line Loss**: 2.6%
- **Number of Community Buildings on PCE**: 13
- **Community PCE kWh Use of Total Allowed:** 73% (234,219 kWh - used / 322,560 kWh - total allowed)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	S60K4c	314 kW
Cummins	KTA1150	350 kW
Cummins	KTA19G4	499 kW

Wind Turbines(s): None

Solar PV: 10.53 kW installed for water plant, behind the meter

Battery Storage System: None

Heat Recovery –
- **Facilities Served:** Water Treatment Plant
- **Opportunities to Expand Waste Heat:** Yes, new fire hall

Water & Wastewater –
- **Ownership:** City of Kiana
- **Water System:** Circulating Loop(s)
- **Wastewater System:** Gravity

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/kiana/fuel)*

Kivalina

Kivaliniq



Native Village of Kivalina:
907-645-2153
City of Kivalina:
907-645-2137
AVEC:
907-561-1818

Demographics –
Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Kivaliniq
Population: 429
Avg. Household Size: 4.99
Median Household Income: $70,278

Access –
Barge Access: Seasonal
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 3,000 ft x 60 ft
Runway 2: None

Climate –
Average Summer Temperature: 47 °F
Average Winter Temperature: 1 °F
Heating Degree Days: 19,579

Heat & Power Costs –
***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:**$6.44 **2025:** $6.58
Cost of Electricity (2025): $0.77 per kWh
Cost of Electricity after PCE (2025): $0.28 per kWh

Tank Farm –
Ownership: Northwest Arctic Borough School District (NWABSD), Native Store, City of Kivalina, AVEC
Tank Details: See info in Appendix B
Condition: Deteriorating – New tank farm under construction 2026

Electric Utility –
Alaska Village Electric Cooperative (AVEC)

Power Demand (2025) –
Residential Power Sold: 584 MWh
Community Facility Power Sold: 471 MWh
Non-PCE Power Sold: 393 MWh
Total Power Sold: 1.45 GWh
Powerhouse (PH) Consumption: 34.0 MWh
Total Power sold & PH Consumption: 1.48 GWh

Power System (2025) –
Fuel Efficiency: 14.88 kWh/gal diesel
Line Loss: 4.4%
Number of Community Buildings on PCE: 7
Community PCE kWh Use of Total Allowed: 35% (127,894 kWh - used / 360,360 kWh - total allowed)

Power Generation Infrastructure –
Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	DDEC3-S60	229 kW
Caterpillar	D353	337 kW
Cummins	LTA 10	250 kW
Detroit Diesel	DDEC4-S60	363 kW

Wind Turbine(s): None

Solar PV: 10.53 kW installed for water plant, behind the meter

Battery Storage System: None

Heat Recovery –
Facilities Served: Washeteria and Raw Water Line
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –
Ownership: City of Kivalina
Water System: Haul, Washeteria
Wastewater System: Honeybucket

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/kivalina/fuel)*



Demographics –

Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Laugviik
Population: 156
Avg. Household Size: 5.20
Median Household Income: $31,429

Access –

Barge Access: Seasonal / None (depending on river water levels)
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 4,020 ft x 75 ft
Runway 2: 4,780 ft x 75 ft

Climate –

Average Summer Temperature: 54 °F
Average Winter Temperature: 7 °F
Heating Degree Days: 15,780

Heat & Power Costs –

***Cost of Diesel Fuel (gal): (2024)** $6.41 **(2025)** $6.71
***Cost of Gasoline (gal)**: **(2024)** $6.44 **(2025)** $6.58
Cost of Electricity (2025): $1.08 per kWh
Cost of Electricity, after PCE (2025): $0.32 per kWh

Tank Farm –

Ownership: City of Kobuk, Northwest Arctic Borough School District (NWABSD)
Tank Details: See info in Appendix B
Condition: New tank farm being planned/designed

Electric Utility –

Alaska Village Electric Cooperative (based in Shungnak, with electrical intertie to Shungnak)

Power Demand (2025) –

Residential Power Sold: 181 MWh
Community Facility Power Sold: 149 MWh
Non-PCE Power Sold: 225 MWh
Total Power Sold: 555 MWh
Powerhouse (PH) Consumption: N/A
Total Power Sold & PH Consumption: 555 MWh

Total Power Purchased – Shungnak: 888,093 kWh

Power System (2025) –

Fuel Efficiency – Shungnak: N/A
Line Loss – Shungnak: N/A
Number of Community Buildings on PCE: 2
Community PCE kWh Use of Total Allowed: 69% (89,990 kWh - used / 131,040 kWh - total allowed)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity	Use
Caterpillar	C9	171 kW	Back-Up

Wind Turbine(s): None

Solar PV:

Installer	Inverter	Capacity	Year Built
Alaska Native Renewable Industries	Solar Edge	223.6 kW bifacial	2021

Installation located in Shungnak, 37.26 kW owned by Kobuk, distributed via electrical intertie with Shungnak. (Additional 7.38 kW installed for water plant, behind the meter)

Battery Storage System: None, all battery storage is in Shungnak

Heat Recovery –

Facilities Served: N/A
Opportunity to Expand Waste Heat: N/A

Water & Wastewater –

Ownership: City of Kobuk
Water System: Circulating Loop(s)
Wastewater System: Gravity

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/kobuk/fuel)*



Kotzebue

Qikiqtaġruk

Native Village of Kotzebue:
907-442-3467
City of Kotzebue:
907-442-3401
Kikiktagruk Inupiat Corp.:
907-442-3165
Kotzebue Electric Association:
907-442-3491

Demographics –

Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Qikiqtaġruk
Population: 2953
Avg. Household Size: 2.72
Median Household Income: $106,328

Access –

Barge Access: Seasonal
Runway Ownership: State
Runway Surface: Asphalt
Runway 1: 5,300 ft x 150 ft
Runway 2: 3,876 ft x 90 ft

Climate –

Average Summer Temperature: 51 °F
Average Winter Temperature: 0 °F
Heating Degree Days: 16,531

Heat & Power Costs –

***Cost of Diesel Fuel (gal): (2024):**$7.95 **(2025):**$7.84*
***Cost of Gasoline (gal): (2024):**$7.97 **(2025):**$7.99*
***Cost of Electricity (2024):** $0.52 per kWh*
***Cost of Electricity after PCE (2024):** $0.26 per kWh*

Tank Farm –

Ownership: Kotzebue Electric Association (KEA) (Vitus – leasing a portion), Crowley
Tank Details:

Owner	Fuel	Capacity (gal)
KEA	Diesel	2,228,820
Vitus	ULSD1	650,000 (from above; leased from KEA)
Vitus	Gasoline	300,000 (owned by Vitus)
Crowley	Diesel Gasoline ULSD AV100LL Jet A	See Appendix B

Condition: Acceptable

Electric Utility –

Kotzebue Electric Association (KEA)

Power Demand (2025) –

Residential Power Sold: 6.83 GWh
Community Facility Power Sold: 1.78 GWh
Non-PCE Power Sold: 10.44 GWh
Total Power Sold: 19.0 GWh
Powerhouse (PH) Consumption: 0.42 GWh
Total Power Sold & PH Consumption:19.5 GWh

Power System (2025) –

Fuel Efficiency: 14.04 kWh/gal diesel
Line Loss: 7.3%
Number of Community Buildings on PCE: 26
Community PCE kWh Use of Total Allowed: 72% (1,779,695 kWh / 2,480,520 kWh)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity
Caterpillar	3516	1135 kW
Caterpillar	C27	725 kW
EMD	8-710	1440 kW
EMD	16-710	2865 kW
EMD	16-710	2865 kW
EMD	20-710	3010 kW

Note: *New generators being planned for installation in upcoming years*

Wind Turbine(s):

Manuf.	Model	Cap.	Qty	Status	Year Built
EWT	DW 54-900	900 kW	2	Functional	2012
Vestas	V15	65 kW	1	Needs Repair	2005
Northern Power Systems	Northwind 100	100 kW	1	Needs Repair	2000
AOC	15/50	66 kW	15	Needs Repair	1997-2005

Grid Stabilization:

Component	Manuf.	Model	Capacity	Year Built
STATCOM	ABB	PCS100	1MVAr	2012

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/kotzebue/fuel)*

Solar PV:

Installer	Inverter	Capacity	Year Built
Alaska Native Renewable Industries	Solar Edge	576 kW bifacial	2020

(Additional 20 kW installed for water plant, behind the meter)

Battery Storage System:

Component	Manuf.	Model	Capacity	Year Built
Battery	SAFT	IM-20	950 kWh	2015
Converter	ABB	PCS100	1,225 kW	2015
Microgrid Controller	EPS	Demand Control	-	2005

Electric Boiler:

Owner	Capacity	Year Installed
Maniilaq Health Center	450 kW	2014
National Park Service	108 kW	2022

New boiler added to City Water Plant 2026. Uncertain size.

Heat Recovery –

Facilities Served: Circulating water main – heat added in power plant to raise temp from 38°F to 50°F in winter months.

Opportunity to Expand Waste Heat: Yes

Water & Wastewater –

Ownership: City of Kotzebue

Water System: Piped; New water treatment plant – construction expected to conclude in fall 2022

Wastewater System: Piped

Noatak

Nautaaq



Native Village of Noatak:
907-485-2173
AVEC:
907-561-1818

Demographics –

Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Nautaaq
Population: 535
Avg. Household Size: 4. 78
Median Household Income: $77,500

Access –

Barge Access: None (all fuel flown in)
Runway Ownership: State
Runway Surface: Gravel (new airfield to be constructed starting in 2027
Runway 1: 3,992 ft x 60 ft
Runway 2: None

Climate –

Average Summer Temperature: 52 °F
Average Winter Temperature: -2 °F
Heating Degree Days: 15,229

Heat & Power Costs –

***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:** $6.44 **2025:** $6.58
Cost of Electricity (2025): $1.06 per kWh
Cost of Electricity after PCE (2025): $0.30 per kWh

Tank Farm –

Ownership: Northwest Arctic Borough School District (NWABSD), Native Store, AVEC, Noatak IRA Council
Bulk Fuel Capacity: See info in Appendix B
Condition: Deteriorating, new tank farm under design

Electric Utility –

Alaska Village Electric Cooperative (AVEC)

Power Demand (2025) –

Residential Power Sold: 796 MWh
Community Facility Power Sold: 346 MWh
Non-PCE Power Sold: 752 MWh
Total Power Sold: 1.89 GWh
Powerhouse (PH) Consumption: 84.8 MWh
Total Power sold & PH Consumption: 1.98 GWh

Power System (2025) –

Fuel Efficiency: 15.14 kWh/gal diesel
Line Loss: 3.5%
Number of Community Buildings on PCE: 10
Community PCE kWh Use of Total Allowed: 54% (244,755 kWh / 449,400 kWh)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	S60D3 1800	314 kW
Cummins	QSX 15 G9	499 kW
Caterpillar	3456	455 kW

Wind Turbine(s): None

Utility-Scale Solar PV:

Installer	Inverter	Capacity	Year Built
		275 kW	2022

(Additional 11.27 kW installed for water plant, behind the meter)

Battery Storage System:

Manufacturer	Model	Capacity	Year Built
		500 kW/ 460 kWh	2022

Heat Recovery –

Facilities Served: Water Treatment Plant
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –

Ownership: Native Village of Noatak
Water System: Circulating Loop(s)
Wastewater System: Gravity

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/noatak/fuel)*

No City of Noatak phone number is provided because the community does not have a City government.



Noorvik

Nuurvik

Native Village of Noorvik:
907-636-2144
City of Noorvik:
907-636-2100
AVEC:
907-561-1818

Demographics –
Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Nuurvik
Population: 657
Avg. Household Size: 5.02
Median Household Income: $63,125

Access –
Barge Access: Seasonal
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 4,000 ft x 100 ft
Runway 2: None

Climate –
Average Summer Temperature: 60 °F
Average Winter Temperature: 32 °F
Heating Degree Days: 15,812

Heat & Power Costs –
***Cost of Diesel Fuel (gal): 2024:** $6.49 **2025:** $7.38
***Cost of Gasoline (gal): 2024:** $7.21 **2025:** $7.73
Cost of Electricity (2025): $0.77 per kWh
Cost of Electricity, after PCE (2025): $0.28 per kWh

Ownership: AVEC, Northwest Arctic Borough School District (NWABSD), City of Noorvik, Native Store
Total Capacity: See info in Appendix B
Condition: Deteriorating

Electric Utility –
Alaska Village Electric Cooperative (AVEC)

Power Demand (2025) –
Residential Power Sold: 931 MWh
Community Facility Power Sold: 499 MWh
Non-PCE Power Sold: 532 MWh
Total Power Sold: 1.96 GWh
Powerhouse (PH) Consumption: 49.2 MWh
Total Power Sold & PH Consumption: 2.01 GWh

Power System (2025) –
Fuel Efficiency: 14.9 kWh/gal diesel
Line Loss: 5.4%
Number of Community Buildings on PCE: 10
Community PCE kWh Use of Total Allowed: 69% (379,063 kWh / 551,880 kWh)

Power Generation Infrastructure –
Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	S60K4c	363 kW
Cummins	K19G4	499 kW
MTU	12V2000	710 kW

Wind Turbine(s): None

Solar PV:

Installer	Microinverters	Capacity	Year Built
Northwest Arctic Borough	AP Systems YC 1000-3	28.8 kW	2016

(Additional 22.7 kW installed for water plant, behind the meter)

Battery Storage System: None

Heat Recovery –
Facilities Served: Water Treatment Plant, City offices
Opportunity to Expand Waste Heat: No

Water & Wastewater –
Ownership: City of Noorvik
Water System: Pressure, Circulating Loop(s)
Wastewater System: Vacuum

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/noorvik/fuel)*



Selawik

Akuligaq

Native Village of Selawik:
907-484-2165
City of Selawik:
907-484-2132
AVEC:
907-561-1818

Demographics –
Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Akuligaq
Population: 745
Avg. Household Size: 4.97
Median Household Income: $63,125

Access –
Barge Access: Seasonal
Runway Ownership: City / State
Runway Surface: Gravel
Runway 1: 3,000 ft x 60 ft
Runway 2: 2,659 ft x 60 ft

Climate –
Average Summer Temperature: 54 °F
Average Winter Temperature: -3 °F
Heating Degree Days: 15,812

Heat & Power Costs –
***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:** $6.44 **2025:** $6.58
Cost of Electricity (2025): $0.71 per kWh
Cost of Electricity, after PCE (2025): $0.23 per kWh

Tank Farm –
Ownership: City of Selawik, Native Village of Selawik, AVEC, Native Store, National Guard, Northwest Arctic Borough School District (NWABSD)
Tank Details: see further information in Appendix B
Condition: Deteriorating

Electric Utility –
Alaska Village Electric Cooperative (AVEC)

Power Demand (2025) –
Residential Power Sold: 1.10 GWh
Community Facility Power Sold: 705 MWh
Non-PCE Power Sold: 801 MWh
Total Power Sold: 2.60 GWh
Powerhouse (PH) Consumption: 31.6 MWh
Total Power Sold & PH Consumption: 2.63 GWh

Power System (2025) –
Fuel Efficiency: 14.41 kWh/gal diesel
Line Loss: 4.5%
Number of Community Buildings on PCE: 13
Community PCE kWh Use of Total Allowed: 74% (460,190 kWh - used / 625,800 kWh – total allowed)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity
Detroit Diesel	S60K4 1800	363 kW
Cummins	QSX15-G9	499 kW
Cummins	K38G4 1800	900 kW

Wind Turbine(s):

Manuf.	Model	Capacity	Qty.	Condition	Year Built
AOC	15/50	50 kW	4	Non-functional	2006

Note: these were removed in 2025

Solar PV: 9.72 kW installed for water plant, behind the meter

Battery Storage System: None

New Solar-BESS under construction in 2026. See details in Appendix B.

Heat Recovery –
Facilities Served: Water Treatment Plant, Power Plant
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –
Ownership: City of Selawik
Water System: Circulating Loop
Wastewater System: Vacuum

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/selawik/fuel)*



Shungak

Issingnak

Native Village of Shungnak:
907-437-2163
City of Shungnak:
907-437-2161
Alaska Village Electric Cooperative:
907-561-1818

Demographics –

Native Village Status: Federally Recognized Tribal Council
Alaska Native Name: Issingnak
Population: 269
Avg. Household Size: 4.5
Median Household Income: $76,667

Access –

Barge Access: Seasonal / None (depending on river water levels)
Runway Ownership: State
Runway Surface: Gravel
Runway 1: 4,001 ft x 60 ft
Runway 2: None

Climate –

Average Summer Temperature: 57 °F
Average Winter Temperature: -1 °F
Heating Degree Days: 15,780

Heat & Power Costs–

***Cost of Diesel Fuel (gal): 2024:** $6.41 **2025:** $6.71
***Cost of Gasoline (gal): 2024:** $6.44 **2025:** $6.58
Cost of Electricity (2025): $1.08
Cost of Electricity after PCE (2025): $0.32 per kWh

Tank Farm –

Ownership: City of Shungnak, Northwest Arctic Borough School District (NWABSD), AVEC, Native Store
Tank Details: see info in Appendix B
Condition: Deteriorating

Electric Utility –

Alaska Village Electric Cooperative

Power Demand (2025) –

Residential Power Sold: 366 MWh
Community Facilities Power Sold: 213 MWh
Non-PCE Power Sold: 310 MWh
Total Power Sold: 888 MWh
Powerhouse (PH) Consumption: 64.4 MWh
Total Sold & PH Consumption: 953 MWh

Total Power Purchased by Kobuk: 555 MWh

Power System (2025) –

Efficiency: 14.96 kWh/gal
Line Loss: 41.6%
Number of Community Buildings on PCE: 8
Community PCE kWh Use of Total Allowed: 65% (147,981 kWh / 225,960 kWh)

Power Generation Infrastructure –

Diesel Engines:

Manufacturer	Model	Capacity
Caterpillar	3456	505 kW
Caterpillar	3406B	363 kW
Caterpillar	3456	505 kW

Wind Turbine(s): None

Solar PV:

Installer	Inverter	Capacity	Year Built
Alaska Native Renewable Industries	Solar Edge	223.6 kW bifacial	2021

**Installation located in Shungnak, 186.3 kW owned by Shungnak*
(Additional 7.5kw installed for water plant, behind the meter)

Battery Storage System: *New in 2021*

Component	Manuf.	Model	Capacity	Year Built
Battery	Blue Planet	Blue Ion 2.0	384 kWh	2021
Microgrid Controller	Ageto	ARC	-	2021
Converter	EPC	PD-250	250 kW	2021

Heat Recovery –

Facilities Served: Water Treatment Plant, City offices
Opportunity to Expand Waste Heat: Yes

Water & Wastewater –

Ownership: City of Shungnak
Water System: Circulating Loop(s)
Wastewater System: Gravity

** Cost of Diesel & Gasoline source: DCRA regional value (https://akenergygateway.alaska.edu/explore/communities/shungnak/fuel)*

APPENDIX B

Fuel Usage Information and Emission Calculations

GHG Data and Emissions Summary

Community	Popu- lation	Percent of Borough Population	No. House- holds	CO2e Emissions (tons/yr)	CO2e Emissions Percent of Total		Total Htg+Elec+ Vehicle Fuel Use CO2e Emissions (tpy)	Fuel for Electrical CO2e Emissions (tpy)	Heating Oil CO2e Emissions (tpy)	Unleaded / Av Gas / Jet Fuel CO2e Emissions (tpy)	Wood CO2e Emissions (tpy)	Solid Waste / Wastewater Treatment / Refrigerant (tpy)	Emissions per Capita (tpy/person)
Kotzebue	2,931	41%	845	51,468	63%		31,768	13,732	15,299	20,030	1,013	189	**17.6**
Kivalina	426	6%	154	3,060	4%		3,019	1,328	1,565	126.4	28	12	**7.2**
Noatak	540	7%	138	3,565	4%		3,365	1,630	1,606	129.9	175	24	**6.6**
Ambler	256	4%	76	3,152	4%		2,557	1,189	1,303	65.0	578	17	**12.3**
Buckland	629	9%	146	2,892	4%		2,785	940	1,692	152.9	67	40	**4.6**
Deering	185	3%	51	1,753	2%		1,722	694	983	45.2	19	12	**9.5**
Kiana	413	6%	105	3,609	4%		3,457	1,497	1,845	115.2	126	27	**8.7**
Kobuk	169	2%	38	1,137	1%		1,104	0	1,069	34.9	26	7	**6.7**
Noorvik	659	9%	122	4,257	5%		4,114	1,818	2,169	126.3	101	42	**6.5**
Selawik	757	10%	96	4,861	6%		4,468	2,418	1,961	89.1	345	48	**6.4**
Shungnak	251	3%	44	2,296	3%		2,250	1,264	944	42.0	30	16	**9.1**
Total	**7,216**		**1,815**	**82,050**			**60,608**	**26,509**	**30,436**	**20,957**	**2,509**	**434**	**8.4**
							Percents	32%	37%	26%	3%	1%	

Total Borough Diesel/Heating Oil Use **5,056,264** gals (2024 estimated)

Community	2024 Percent of Fuel Use	2024 Electricity Fuel Use, gal [(1)]	Non-Elec Heating Oil/Diesel Use	Unleaded Gas Use	Av Gas/Jet Fuel Use	Wood Use (gal equiv)	Wood Use (cords)	Total Gas and Diesel use	Percent of Fuel and Diesel Use	2025 Heating Oil Price	Heating Oil Expendi- tures
Kotzebue	64%	1,219,298	1,358,418	126,154	1,804,460	69,545	439	2,703,871	51%	$ 8.59	$ 11,668,814
Kivalina	4%	117,894	138,979	13,013		1,950	12	269,886	5%	$ 6.78	$ 942,274
Noatak	4%	144,703	142,589	13,374		12,013	76	300,665	6%	$ 17.23	$ 2,456,800
Ambler	3%	105,584	115,676	6,693		39,695	251	227,953	4%	$ 15.97	$ 1,847,345
Buckland	4%	83,446	150,248	15,742		4,622	29	249,436	5%	$ 6.79	$ 1,020,184
Deering	2%	61,609	87,325	4,651		1,292	8	153,585	3%	$ 7.75	$ 676,767
Kiana	4%	132,904	163,799	11,859		8,642	55	308,562	6%	$ 8.24	$ 1,349,707
Kobuk	1%	0	94,897	3,590		1,804	11	98,486	2%	$ 10.77	$ 1,022,038
Noorvik	5%	161,463	192,599	13,004		6,951	44	367,065	7%	$ 7.95	$ 1,531,159
Selawik	6%	214,659	174,147	9,177		23,703	150	397,983	8%	$ 7.72	$ 1,344,415
Shungnak	3%	112,210	83,818	4,323		2,089	13	200,351	4%	$ 7.34	$ 615,227
Subtotals		**2,353,770**	**2,702,494**	**221,580**	**1,804,460**	**172,306**	**1,089**	**5,277,844**	100%		
	Total Heating Oil+Diesel		**5,056,264**	gals/year							

Notes:

(1) From 2022 NAB Strategic Energy Plan and NAB data

(2) Calculated based on percent of overall fuel use in borough and electricity use by community.

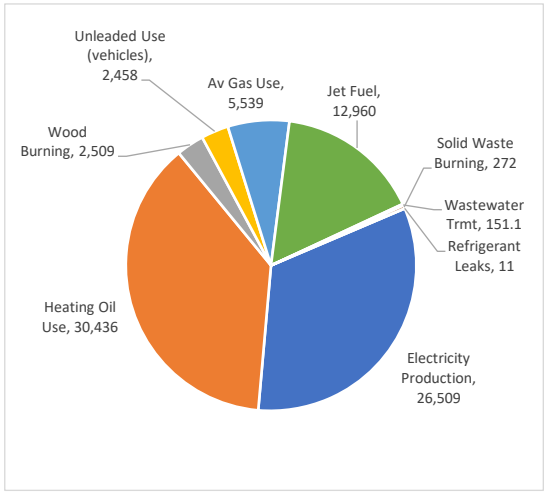
(3) Calculated based on ratio of community storage tank capacities. Kotzebue is assumed based on average of other communities.

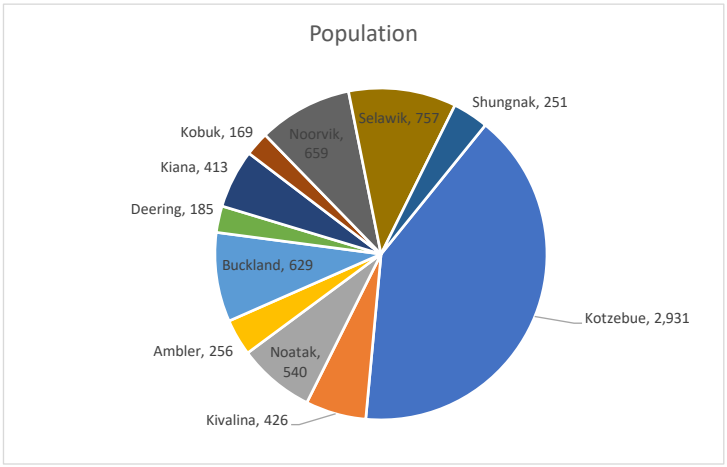
		Emissions, US tpy			
Emissions	**CO2e**	**CO2**	**CH4e**	**N2Oe**	**Refrigerant**
NAB	82,050	81,725	88	226	11.3
Red Dog Mine	162,488	161,947	188	353	
Bornite Camp Site					
Total	**244,539**	**243,672**	**277**	**579**	**11**

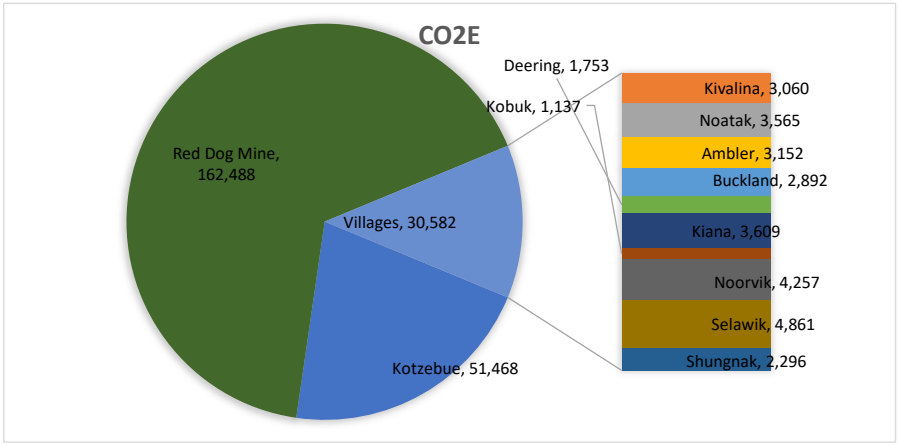
Summary Fuel Use

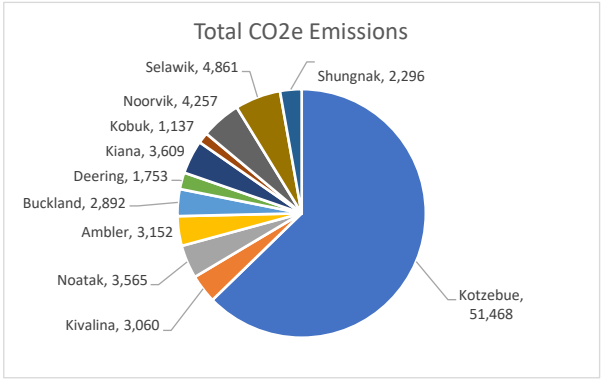
		% of Total	Alt. Energy Offset (2024)	Percent of Total HO/Dieseil
Electricity (diesel)	2,353,770	33%	362,869	7.2%
Heating Oil/Diesel	2,702,494	38%		
Unleaded	221,580	3%		
AV Gas/Jet Fuel	1,804,460	25%		
Total	**7,082,304**			

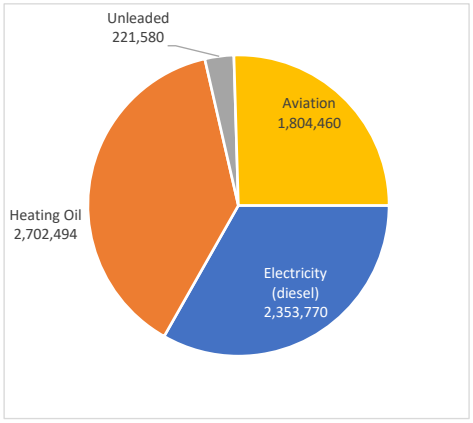
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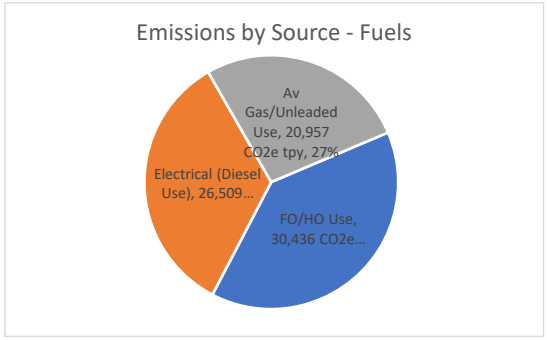

Unleaded Use (vehicles), 2,458
Av Gas Use, 5,539
Jet Fuel, 12,960
Wood Burning, 2,509
Solid Waste Burning, 272
Wastewater Trmt, 151.1
Refrigerant Leaks, 11
Heating Oil Use, 30,436
Electricity Production, 26,509

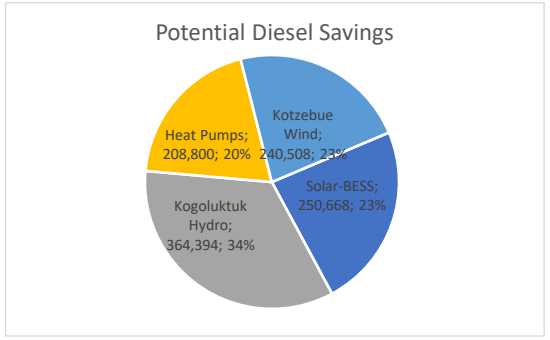

Population
Shungnak, 251
Selawik, 757
Noorvik, 659
Kobuk, 169
Kiana, 413
Deering, 185
Buckland, 629
Kotzebue, 2,931
Ambler, 256
Noatak, 540
Kivalina, 426

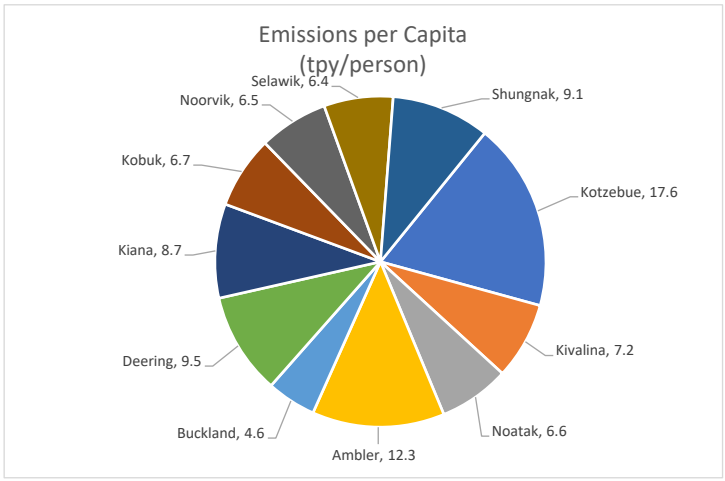

CO2E
Deering, 1,753
Kobuk, 1,137
Red Dog Mine, 162,488
Villages, 30,582
Kotzebue, 51,468
Kivalina, 3,060
Noatak, 3,565
Ambler, 3,152
Buckland, 2,892
Kiana, 3,609
Noorvik, 4,257
Selawik, 4,861
Shungnak, 2,296

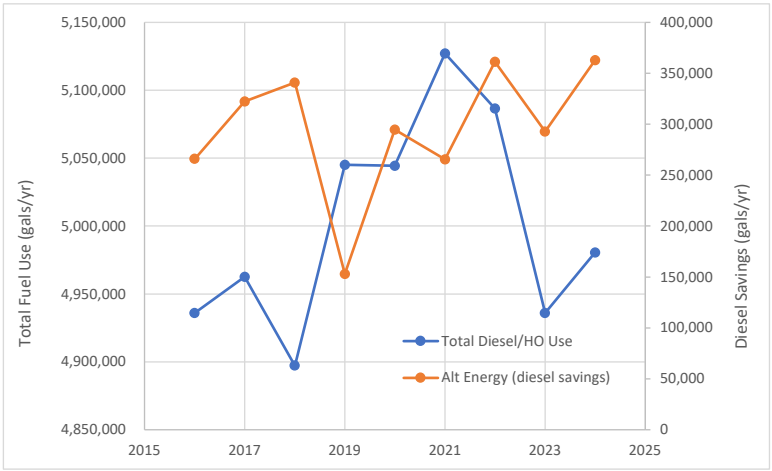

Total CO2e Emissions
Selawik, 4,861
Shungnak, 2,296
Noorvik, 4,257
Kobuk, 1,137
Kiana, 3,609
Deering, 1,753
Buckland, 2,892
Ambler, 3,152
Noatak, 3,565
Kivalina, 3,060
Kotzebue, 51,468


Unleaded
221,580
Aviation
1,804,460
Heating Oil
2,702,494
Electricity
(diesel)
2,353,770


Emissions by Source - Fuels
Av
Gas/Unleaded
Use, 20,957
CO2e tpy, 27%
Electrical (Diesel
Use), 26,509…
FO/HO Use,
30,436 CO2e…


Potential Diesel Savings
Heat Pumps;
208,800; 20%
Kotzebue
Wind;
240,508; 23%
Solar-BESS;
250,668; 23%
Kogoluktuk
Hydro;
364,394; 34%


Emissions per Capita
(tpy/person)
Selawik, 6.4
Noorvik, 6.5
Shungnak, 9.1
Kobuk, 6.7
Kotzebue, 17.6
Kiana, 8.7
Kivalina, 7.2
Deering, 9.5
Buckland, 4.6
Noatak, 6.6
Ambler, 12.3


5,150,000
5,100,000
5,050,000
5,000,000
4,950,000
4,900,000
4,850,000
Total Fuel Use (gals/yr)
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Diesel Savings (gals/yr)
2015
2017
2019
2021
2023
2025
Total Diesel/HO Use
Alt Energy (diesel savings)

Key Data Input

Community	Population	No. Households	2024 PCE Elec Diesel Used (Gals)
Kotzebue	2,931	845	1,219,298
Kivalina	426	154	117,894
Noatak	540	138	144,703
Ambler	256	76	105,584
Buckland	629	146	83,446
Deering	185	51	61,609
Kiana	413	105	132,904
Kobuk	169	38	
Noorvik	659	122	161,463
Selawik	757	96	214,659
Shungnak	251	44	112,210

NWABSD ANNUAL FUEL ORDER/USAGE

Community	NWABSD	ANTHC WTP	TOTAL
Ambler	15,000	6,000	21,000
Buckland	22,000	11,000	33,000
Deering	10,000	14,000	24,000
Kiana	25,000	7,000	32,000
Kivalina	38,000	5,000	43,000
Kobuk	17,000	1,000	18,000
Kotzebue	110,000		110,000
Noatak	35,000	*10,000*	45,000
Noorvik	44,000	24,000	68,000
Selawik	35,000	22,400	57,400
Shungnak	17,000	1,000	18,000
TOTAL	**368,000**	**101,400**	**469,400**

Maniilaq and Other Entity Fuel Uses

Community	Gasoline	Stove Oil (10/25-3/26)	Stove Oil (annual)	Notes
Ambler	2,194	22,958	29,845	
Buckland	937	20,960	27,248	
Deering	1,994	14,800	19,240	
Kiana	2,604	27,577	35,850	
Kivalina	2,602	0	41,737	Assumed same as Noatak
Kotzebue	0	167,100	167,100	Avg of 13,925/mo
Kobuk	3,496	36,710	47,723	
Noatak	3,288	32,105	41,737	
Noorvik	0	26,536	34,497	
Selawik	0	11,600	15,080	
Shungnak	580	22,898	29,767	
		TOTAL	**489,824**	

Notes: Stove oil use is for Oct-2025 thru Mar-2026; value is annualized by adding roughly 30% (based on annual HDDs)

NVOK Fuel Use (2024)	12,500	gals/yr
Nullagvik Use (2025)	46,000	gals/yr
Other Commercial	200,000	estimate (gals/yr)
City of Kotzebue Fuel Use	85,000	gals/yr (heating oil) [incl. water plant]
	22,000	gals/yr (ULSD)
Other Diesel Use	15,000	gals/yr (ULSD, other transportation)

Note: Other commercial facilities include hangars, businesses, and office buildings.

Northwest Arctic Borough Residential and Electric HO/FO Usages

Community	Data Quality	No. Customers (2024)	No. House-holds (2023)	Total Fuel Oil Use (gal)	2024 PCE Elec Diesel Used (gals)	2024 PCE Report Fuel Cost	2020-2022 3 yr Avg Stove Oil (gals/yr)	Stove Oil per HH (gals/yr)	Calc'd HH Stove Oil Use (gals/yr)	Total HH Stove Oil Use (gals/yr)
NAB	*Overall*	*2577*	*1865*	*1,386,771*	*2,353,770*	*$ 11,054,014*				1,386,771
Kotzebue	High	1282	895	700,818	1,219,298	$ 3,990,241			700,818	700,818
Selawik	Medium	214	96	101,667	214,659	$ 1,024,970	101,667	612.5		101,667
Noorvik	Low	177	122	114,102	161,463	$ 855,792			114,102	114,102
Noatak	High	152	138	55,852	144,703	$ 1,077,378	55,852	526.9		55,852
Kiana	Medium	154	105	95,949	132,904	$ 684,707			95,949	95,949
Buckland	Medium	146	146	90,000	83,446	$ 441,775	90,000	947.4		90,000
Kivalina	High	126	154	54,242	117,894	$ 650,789	54,242	686.6		54,242
Shungnak	Medium	91	44	36,051	112,210	$ 1,378,752	36,051	468.2		36,051
Ambler	Low	108	76	64,831	105,584	$ 654,312			64,831	64,831
Deering	Medium	76	51	44,085	61,609	$ 295,298			44,085	44,085
Kobuk	Medium	51	38	29,174	0				29,174	29,174

Notes:

1. Wood use is from 2022 NANA home heating survey
2. Housing information is from 2014 Alaska Housing Assessment information (for Kivalina and Noatak). Other communities are inferred based on assessment data.
3. 3-yr average stove oil usage is from HDL Bulk Tank Assessment report. Usages include Maniilaq clinic use.

Total Bulk Tank Capacities

Community	Fuel Oil/Diesel	Unleaded	AV100	Jet A	Diesel #6	Notes	Estimated HO/Diesel Usage (2024-25)	Percent of Tank Volume
Ambler	202,900	4,000				New tank farm 2026	221,260	109%
Buckland	350,000	51,000					233,694	67%
Deering	211,000	31,000					148,934	71%
Kiana	291,100	83,700					296,703	102%
Kivalina	334,700	44,000				New tank farm in 2027	256,873	77%
Kobuk	40,100	4,000					94,897	237%
Kotzebue-KEA	2,228,820					partly used by Vitus	1,219,298	55%
Kotzebue-Crowley	1,439,760	815,220	1,183,560	1,796,256	932,400		1,358,418	94%
Noatak	209,800	33,000					287,292	137%
Noorvik	479,900	72,300					354,062	74%
Selawik	658,500	103,500					388,806	59%
Shungnak	218,000	32,500					196,028	90%

Sources: NAB Bulk Fuel Master Plan (2024), KEA C-Plan (2024), Crowley C-Plan (2025)
Note: Ambler, Shungnak, Kobuk, and Noatak are provided fuel year-round by plane.
Kotzebue heating oil tank volume does not include bulk tanks for NWABSD and the City.

TRANSPORTATION FUEL USAGE ESTIMATES

Households with vehicles available				Vehicle Annual Gas consumption	
				High Estimate (gal/yr/vehicle)	Low Estimate (gal/yr/vehicle)
Village	**1 Vehicle**	**2 Vehicles**	**4 Vehicles**	224.5	122
Kotzebue	529	114	5	161,873	71,747
Selawik	11			2,470	1,338
Noorvik	23	4		5,613	3,042
Noatak	16	2		3,884	2,105
Kiana	24	6		6,062	3,285
Buckland	29	3		7,049	3,820
Kivalina	3			808	438
Shungnak	6			1,347	730
Ambler	4			898	487
Deering	4			898	487
Kobuk	4			898	487

Vehicle Equiv. Weighting (by usage)		
Vehicle Count (per HH)	**Usage Factor**	**Equivalent # Vehicles**
1	1	1
2	0.75	1.50
3	0.60	1.80
4	0.50	2.00

Notes: The data is estimated based on best available information; includes 150 commercial vehicles for Kotzebue
https://data.census.gov/table?q=B08201
Kotzebue added 50 gals per vehicle for usage due to higher amount of roads.

Colored by Barge Reliability	Barge Access	Listed Gasoline Storage (bulk tanks, gals)	Total Occupied Households	# of ATVs	# of Snowmachines	# of Boats	Vehicle Gas Consumption	% of Storage
Kotzebue	Seasonal	815,220	845	422.5	422.5	84.5	140,747	0.17
Selawik	Seasonal	103,500	96	48.0	48.0	9.6	9,177	0.09
Noorvik	Seasonal	72,300	122	61.0	61.0	12.2	13,004	0.18
Noatak	None	33,000	138	69.0	69.0	13.8	13,374	0.41
Kiana	Seasonal	83,700	105	52.5	52.5	10.5	11,859	0.14
Buckland	Seasonal	51,000	146	73.0	73.0	14.6	15,742	
Kivalina	Seasonal	44,000	154	77.0	77.0	15.4	13,013	0.30
Shungnak	River Dependent	32,500	44	22.0	22.0	4.4	4,323	0.13
Ambler	River Dependent	4,000	76	38.0	38.0	7.6	6,693	1.67
Deering	Seasonal	31,000	51	25.5	25.5	5.1	4,651	0.15
Kobuk	River Dependent	4,000	38	19.0	19.0	3.8	3,590	0.90
Shungnak + Kobuk	River Dependent	36,500	82	41.0	41.0	8.2	6,696	0.18
	Total	**1,274,220**				**Total**	**236,173**	**0.19**

Notes: 4 villages in red text typically receive fuel via air transport.

TRANSPORTATION FUEL USAGE ESTIMATES

Estimated Vehicle Gas Consumption

Vehicle Type	Annual Gasoline Usage (gal)	mpg	est. daily miles traveled	est. annual miles	est. annual gas	Est. # per household
Car / Truck	224.5	12	4	1460	122	use ACS data
4 Wheeler	151	5	2	365	73	0.50
Snowmachine	303.5	6.5	6	547.5	84	0.50
boat	303	6	5	182.5	30	0.10

Notes: 2013 Personal Transportation in Rural Alaska, Tobias Schworer

Historic Electrical Info and Diesel Savings

	2008	2016			2017			2018		
	Diesel Used (gals)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)
Kotzebue	1,423,571	1,200,444	17,725,701	3,551,337	1,197,011	17,348,511	4,455,199	1,179,262	17,022,643	4,711,606
Kivalina	99,221	87,675	1,297,360	0	92,600	1,359,752	0	91,192	1,290,371	0
Noatak	130,644	132,906	1,866,872	0	128,768	1,843,704	0	136,839	1,925,947	0
Deering	53,886	44,154	612,613	0	50,177	642,532	19,406	43,743	596,835	54,986
Buckland	148,639	110,049	1,584,351	166,470	116,933	1,614,300	122,899	87,895	1,080,261	28,678
Selawik	209,718	196,437	2,719,620	117,902	207,814	2,960,131	6,733	195,505	2,691,929	11,762
Noorvik	154,406	131,544	1,895,588	0	130,808	1,976,906	9,961	137,322	1,940,148	12,831
Kiana	128,267	113,839	1,580,983	0	116,665	1,627,563	0	113,265	1,628,797	0
Ambler	93,867	94,586	1,354,290	0	100,440	1,353,201	0	91,318	1,221,249	0
Shungnak	107,611	121,883	1,572,529	0	118,820	1,609,282	0	118,477	1,626,999	0
TOTALS	**2,549,830**	2,233,517	32,209,907	3,835,709	2,260,036	32,335,882	4,614,198	2,194,818	31,025,179	4,819,863
% Offset				**11.9%**			**14.3%**			**15.5%**
Avg. Diesel Savings (gals)				**265,978**			**322,498**			**340,972**
% Reduction (from 2008)				**12.4%**			**11.4%**			**13.9%**

Note: Data is from AEA PCE Reports (annual).
Annual heating oil use is proportionally calculated based on borough population as a ratio of 2024 population.

Historic Electrical Info and Diesel Savings

	2019			2020			2021		
	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)
Kotzebue	1,273,584	14,047,721	1,705,720	1,227,703	17,990,980	3,560,316	1,250,134	17,807,832	3,250,183
Kivalina	105,010	1,509,342	0	124,131	1,789,756	0	127,031	1,844,027	0
Noatak	133,496	1,915,300	0	129,989	1,859,086	0	132,174	1,872,146	0
Deering	47,196	574,803	86,880	46,022	260,053	104,750	55,914	582,208	61,648
Buckland	131,514	1,633,208	75,661	125,304	1,398,202	228,419	164,839	1,551,250	292,345
Selawik	186,297	2,586,498	0	201,864	2,795,072	0	209,608	2,814,874	0
Noorvik	140,876	1,965,278	9,748	143,753	1,993,735	11,418	142,078	1,964,833	12,650
Kiana	114,624	1,656,716	0	117,719	1,695,620	0	127,120	1,679,744	0
Ambler	92,452	1,245,551	0	98,354	1,244,815	0	88,152	1,268,407	0
Shungnak	117,643	1,620,304	0	127,094	1,713,87	0	127,651	1,635,476	0
TOTALS	2,342,692	28,754,721	1,878,009	2,341,933	31,027,319	3,904,903	2,424,701	33,020,797	3,616,826
% Offset			**6.5%**			**12.6%**			**11.0%**
Avg. Diesel Savings (gals)			**153,004**			**294,741**			**265,582**
% Reduction (from 2008)			**8.1%**			**8.2%**			**4.9%**

Historic Electrical Info and Diesel Savings

	2022			2023			2024		
	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)
Kotzebue	1,143,667	17,250,772	4,533,820	1,165,673	15,907,452	3,662,784	1,143,667	17,250,772	4,533,820
Kivalina	137,666	1,941,488	0	114,902	1,996,223	0	117,894	1,586,375	0
Noatak	144,955	1,882,034	0	106,376	1,956,224	0	144,703	1,938,919	132,826
Deering	56,366	680,946	148,459	57,268	720,289	145,466	61,609	793,080	183,196
Buckland	128,898	1,547,104	182,362	172,335	1,788,191	189,145	83,446	943,846	95,821
Selawik	219,788	3,040,117	0	191,747	2,840,860	0	214,659	2,868,102	0
Noorvik	167,539	2,055,194	13,360	135,410	2,192,185	12,436	161,463	2,237,086	4,598
Kiana	143,699	1,794,635	0	90,041	1,848,264	0	132,904	1,815,817	0
Ambler	104,324	1,377,921	0	81,961	1,298,918	0	105,584	1,293,299	0
Shungnak	137,255	1,555,854	142,433	117,876	1,521,425	193,423	112,210	1,457,566	176,245
TOTALS	2,384,157	33,126,065	5,020,434	2,233,589	32,070,031	4,203,254	2,278,139	32,184,862	5,126,506
% Offset			**15.2%**			**13.1%**			**15.9%**
Avg. Diesel Savings (gals)			**361,332**			**292,745**			**362,869**
% Reduction (from 2008)			**6.5%**			**12.4%**			**10.7%**

Historic Electrical Info and Diesel Savings

	2025		
	Diesel Used (gals)	Diesel Power (kWh)	Non-Diesel Power (kWh)
Kotzebue	1,197,401	16,811,088	4,184,339
Kivalina	104,237	1,550,772	0
Noatak	134,327	2,033,164	17,578
Deering	67,423	857,530	140,292
Buckland	121,087	1,671,452	271,136
Selawik	191,445	2,758,653	0
Noorvik	142,745	2,126,803	0
Kiana	116,586	1,735,233	0
Ambler	88,715	1,304,896	0
Shungnak	106,514	1,593,584	36,958
TOTALS	2,270,480	32,443,175	4,650,303
% Offset			**14.3%**
Avg. Diesel Savings (gals)			**325,443**
% Reduction (from 2008)			**11.0%**

Solar BESS Unit Installations

	Fuel Savings (gals)	Period	Annual Average (gals)	Solar Size (kW)	BESS Size (kWH)	Savings (gal/kW)
Shungnak	57,286	9/2021-9/2025	14,322	233	350	61.5
Noorvik	9,285	7/2017-3/2026	1,071	23	0	46.6
Buckland + Deering	12,500	11/2018-3/2026	1,705	95		18.0
Noatak	22,177	7/15/2023-8/30/2025	10,436	280	442	37.3
		Total Annual Fuel Savings (gals)	27,534	631		
		Average		157.6		
		Average Savings (gal/kW)		*43.7*		

Future Installations

Community	Solar Size (kW)	BESS Size (kWH)	Install Year	Potential Savings (gal/yr)	% of Elec Diesel
Kotzebue	700	8,000	Multiple	67,857	6%
Selawik	703	1,568	2026	32,143	15%
Noorvik	500	1,000	2027	23,290	14%
Noatak (Ph 2)	270		2028+	10,064	7%
Ambler	525	1,000	2027	30,857	29%
Kiana	500	1,000	2027	30,857	23%
Deering	140	250	2028+	16,071	26%
Buckland	320	500	2028+	13,974	17%
Kivalina	360	500	2028+	15,721	13%
Shungnak (Ph2)	160	Existing	2028+	9,835	9%
			Total Annual Fuel Savings (gals/yr)	**250,668**	
			Total Annual Fuel Savings (gals/yr) [current + future]	**278,202**	

Heat Pump Analysis

Proposed Heat Pump	Midea	
Heat Output (@ 5F)	16,500	BTU/hr
COP	2.5	
Diesel Savings	261	gal/yr
Total Number Heat Pumps	800	
Total Diesel Savings	208,800	gallons/year

Notes: See attached output in Appendix B.

Wind Power Analysis

KEA 2016 Wind Savings (w/ 2 900kW turbines)	3,551,337	kWh per year
Heating Oil savings	240,508	gals/yr

Alaska Mini-Split Heat Pump Calculator

Thank you to our sponsors:



This calculator allows you to evaluate the possible energy and cost savings from use of a mini-split (ductless) heat pump in an Alaskan home or small building. Fill out the inputs listed below and then click the "Calculate" button at the bottom of the page to see the results on the analysis.

Where you see the question mark symbol ? additional help for the input is available. Hover your mouse over the symbol to see the pop-up help.

If you would like to reset all inputs to their default values and start over, click the Refresh button in your web browser.

The calculator was primarily built to evaluate retrofitting a mini-split heat pump into an existing home with an existing heating system. However, it can be used to compare use of a heat pump in a new home to use of a different heating fuel. To do a fair economic comparison in that situation, for the "Installed Cost of the Heat Pump" input, enter in the *extra* cost of the heat pump relative to the alternative heating system; this could be a negative number if the heat pump system is less expensive. This same approach should be used if you are in need of *replacing* your existing heating system; enter the additional cost of the heat pump install relative to replacing the existing system.

March 2022 Updates: The calculator now uses fuel and electricity prices from the most current AkWarm Home Energy Rating Library (updated every 6 months). Also, the estimated efficiency characteristics for heat pumps were adjusted 10% downward to more closely match measured data from heat pump units in Seward, Alaska.

For more information on development of this calculator, see this page.

General

Building Name (optional)

Generic House

Enter in any Notes you want shown when you print this page (optional).

Location Info

City where Building is Located:

Kotzebue ×

Input method:

- (●) Select Utility Rate Schedule
- ( ) Manual Entry
- ( ) Manual Entry (Advanced)

Select your Utility and Rate Schedule

Kotzebue Electric Assn - Residential

Electric Rate Elements for this Utility:

Monthly Customer Charge: $20.00 /month
Demand Charge: $0.00 /kW/month
Power Cost Equalization: $0.2673 /kWh

kWh Energy Charges:
1 - all kWh: $0.4526 /kWh

▶ Click Here to change Advanced Utility Inputs

Building Info

Type of Building:

- (●) Residential
- ( ) Commercial Building
- ( ) Community Building

Building Floor Area, excluding garage (square feet): 1200 ft2

Size of Garage:

- (●) No Garage
- ( ) 1-Car
- ( ) 2-Car
- ( ) 3-Car
- ( ) 4-Car

Wall Construction:

- ( ) 2x4
- (●) 2x6
- ( ) Better than 2x6

Select existing Space Heating Fuel type:

#1 Oil

Besides Space Heating, what other Appliances use this Fuel type?

- [x] Domestic Water Heater

☐ Clothes Dryer
☐ Range or Oven

Number of Occupants in Building using the above Appliances: 4 people

Fuel Price Per Unit: 7.79 $ / gallon

Efficiency of Existing Heating System:

○ Low 74%
◉ Standard 80%
○ High Efficiency (e.g. Toyostove) 84%
○ Manual Entry

Auxiliary electricity use (fans/pumps/controls) from existing heating system:

○ No Fans/Pumps (e.g. wood stove)
◉ Hydronic (boiler)
○ Fan-assisted Space Heater (e.g. Toyostove)
○ Forced Air Furnace, Efficient Fan
○ Forced Air Furnace, Standard Fan

Annual Fuel Use for the building including space heating and any other appliances that use that same fuel. (Optional, but very helpful for an accurate estimate of heat pump savings, particularly if your building is super-efficient or very inefficient.):

783 gallon per year

The following inputs asking for January and May electricity use are important in two situations:

- Your home or building is in Rural Alaska and receives Power Cost Equalization (PCE) limited to 750 kilowatt-hours per month.
- Your utility has a "block" rate structure where the electricity rate varies depending on how much you use.

If either one of those is true, review the Video Help below and take time to accurately fill out these inputs. Otherwise, these inputs have no effect on the financial payback of a heat pump (although they do affect some of the total energy cost graphs in the results section).

Video Help for Finding Electricity Usage on Your Bill

Whole Building Electricity Use (without heat pump) in January: 700 kWh

Whole Building Electricity Use (without heat pump) in May: 550 kWh

---

Heating Temperature Setpoint: Value = 68 °F

60 65 70 75 80

Heat Pump Info

Type of Heat Pump: Single- or Multi-zone

- (•) Single Zone
- ( ) Multi Zone: 2 zones installed
- ( ) Multi Zone: 3 zones installed
- ( ) Multi Zone: 4 zones installed

Heat Pump Selection Method

- (•) Simple (Heat Pump Model is Automatically Selected)
- ( ) Advanced (You select Manufacturer/Model)

Heat Pump Characteristics Used in Calculator:

HSPF (a Rating of Heating Efficiency): 14.0
Maximum Heat Output at 5 °F: 16,500 BTUs per hour

Installed Cost of Heat Pump (include applicable sales tax), $ 8000 $

Rebates Received for Heat Pump, $ 0 $

% of Heat Pump Purchase Financed with a Loan Value = 0 %

0 10 20 30 40 50 60 70 80 90 100

Heat Pump is Turned Off below this Outdoor Temperature: Value = 5 °F

-20 -15 -10 -5 0 5 10 15 20

Select Months when Heat Pump is Turned Off for Entire Month:

- [ ] October
- [ ] November
- [ ] December
- [ ] January
- [ ] February
- [ ] March

These next questions will help determine how much of the building's heat load can actually be reached by the Heat Pump. Often the Heat Pump's indoor units do not fully serve all of the spaces in the building.

Is All of the Building's Heat currently Provided by one Space Heater like a Toyostove or Wood Stove?

- ○ Yes
- ◉ No

Percentage of the Home that is Openly Exposed to the Heat Pump Indoor Units:
Value = 60 %

0 10 20 30 40 50 60 70 80 90 100

For those rooms that are not openly exposed to the heat pump indoor units, the following two questions help determine when the heat pump can successfully provide heat to those rooms.

What is your Tolerance for Cooler Bedroom and Back Room Temperatures?

- ○ Bedrooms must be kept at nearly the Same Temperature as Main Spaces
- ◉ Bedrooms can be as much as 5 degrees Cooler than Main Spaces
- ○ Bedrooms can be as much as 10 degrees Cooler than Main Spaces

Are Doors typically open to the Bedrooms and Back rooms that do not have a Heat Pump Indoor Unit?

◉ Open Doors ○ Closed Doors

Economic Inputs

Sales Tax (applies to heating fuel and electricity costs): Value = 4 %

0 1 2 3 4 5 6 7 8 9 10

▶ Click Here to change Advanced Economic Inputs

Results

Rate of Return: 11.9%

The rate of return on the investment is estimated to be **11.9%**. Compare this *tax-free* return to the rate of return or interest of your other investment options. Usually a value greater than 4% indicates a cost-effective investment.

Net Present Value: $4,366

The Net Present Value of installing an air-source heat pump is estimated to be **$4,366**.

This means that over the life of the equipment you will earn a total of \$4,366 in today's dollars beyond your initial investment accounting for interest. Any value greater than zero indicates a cost-effective investment.

You can change the default heat pump life of 14 years in the Advanced Economic Inputs section. If you are trying out different heat pumps or different operating procedures for the heat pump, you should try to pick the combination that maximizes this net present value figure. Note that this only includes economic costs and benefits and does not include any environmental or social benefits of the heat pump.

Annual Heating Fuel Savings: 261 gallon of #1 Oil

This shows how much heating fuel is saved each year by use of the heat pump. The heat pump achieves these savings by serving 45% of the building's space heating load. The amount of load served by the heat pump is affected by:

- your choices concerning lower temperatures in the bedrooms and whether doors are open to those rooms,
- the Outdoor Temperature cutoff below which the heat pump doesn't run,
- the maximum heating capacity available for the heat pump selected.

Annual Increase in Electricity Use: 3,354 kWh

Use of the heat pump adds to the electric use of the building. Shown here is the annual increase in electricity use.

Heat Pump Sizing

This energy model shows that the heat pump *did not* need to deliver its maximum output capacity at any point during the year.

You might try smaller heat pump sizes in the model to see if the Net Present Value benefit of the heat pump increases.

Seasonal Average Heat Pump COP: 2.5

The Seasonal Average Heat Pump COP indicates the annual average efficiency of the heat pump. Conventional Electric Resistance heat (e.g. electric baseboard) would have a COP of 1.0 (100%). Heat Pumps generally have COPs in excess of 2.0 (200%).

Electricity and Fuel Prices

The average cost for the *additional* electricity needed for the heat pump is \$0.3371/kWh. This accounts for any block rates and PCE (Rural Power Cost Assistance) limits that may be present. The fuel price for the fuel saved is \$8.102/gallon. These values include sales taxes.

Greenhouse Gas Emissions

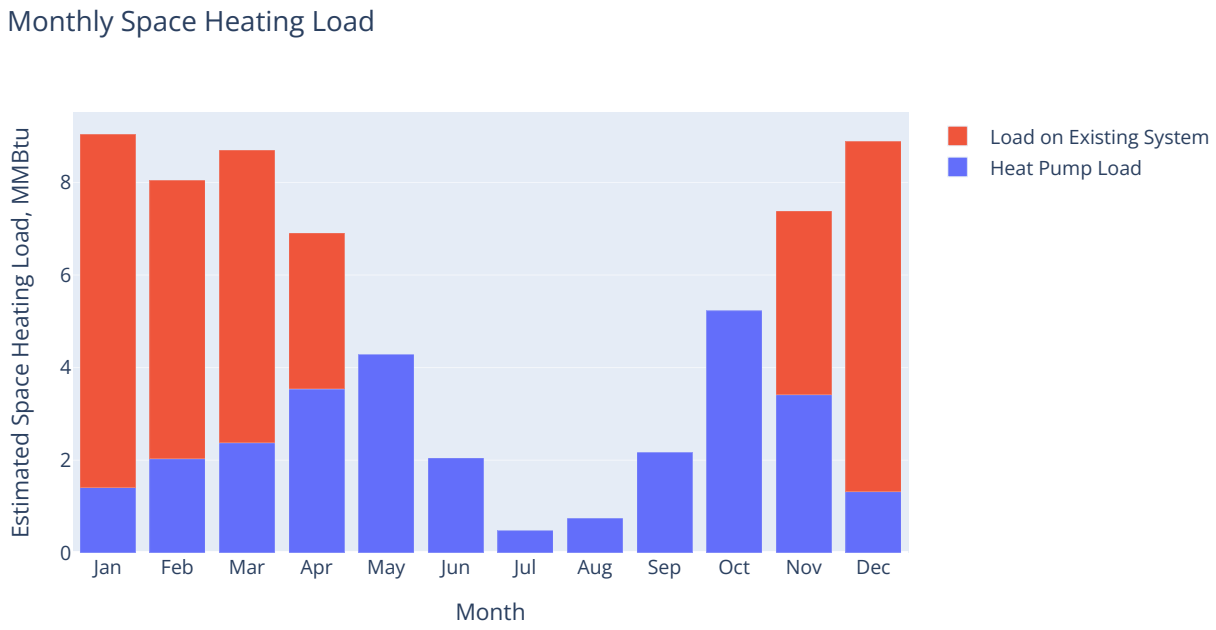
Installing a heat pump is predicted to save 751 pounds of CO_2 emissions annually, or 10,512 pounds over the life of the equipment. This is equivalent to a reduction of 842 miles driven by an average passenger vehicle annually, or 11,787 miles over the equipment's life.

▶ Click Here for Year-by-Year Cash Flow Information

Results by Month

Monthly Space Heating Load

This graph shows how the space heating load of the building varies across the months, and it shows what portion of that load is served by the heat pump versus the existing heating system. The units are total MMBtu of heating load placed on the building's heating system. Not all of this load may be served by the heat pump, due to heat distribution, low-temperature cut-off, and capacity limitations of the heat pump. This figure does *not* include Domestic Hot Water or any other uses of the fuel.

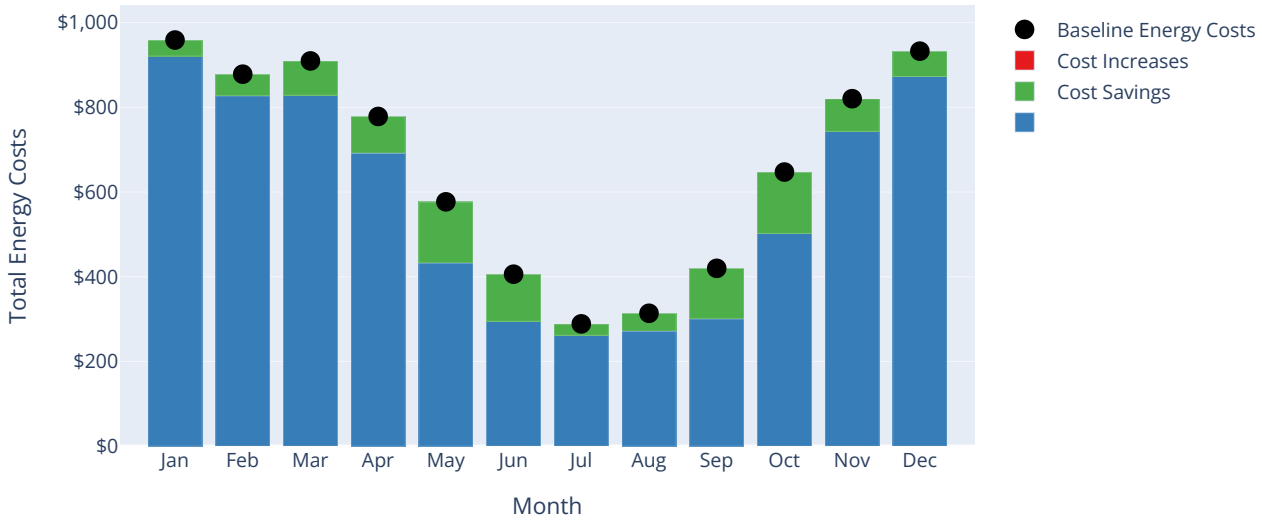


Monthly Energy Cost Impacts

This graph shows how the building's monthly energy costs in the first year change due to the heat pump. Both electricity costs and fuel costs are included. The dots show the current level of energy cost prior to installing the heat pump. If the heat pump lowers energy cost in the month, a green bar drops from the dot down to the new level of energy cost for the month. If the heat pump raises costs in the month (e.g. the added electricity cost is more than the fuel cost savings), a red bar extends from the current cost dot to the new, higher, energy cost level. It could be more economical to shut off the heat pump in these months, although red bars (cost increases) can turn into green bars (savings) in future years if heating fuel costs are projected to increase in price faster than electricity (see Advanced Economic Inputs for price escalation inputs). This graph shows monthly energy costs in the *first year* after installing the heat pump.

All energy uses are included in the costs, not just space heating.

Energy Costs: Heat Pump vs. Baseline



▶ Click Here for More Detailed Monthly Information

Design Heating Load Information

An approximate estimate of the design space heating load of this building is **21,240 Btu/hour**, not including any domestic hot water load. This was based on a Design Outdoor Temperature of **-31.0 °F**; approximately 1% of the hours in the year (88 hours) will be colder than this temperature. The design heating load figure does *not* include any safety margin and is measured at the output of the heating system.

The heat pump is estimated to have an output of **11,978 Btu/hour at a 5 °F** outdoor temperature. The heat pump will have different maximum output capacities at other outdoor temperatures, as the heat pump's efficiency varies with outdoor temperature. This energy model shows that the heat pump *did not* need to deliver its maximum output capacity at any point during the year.

File: 1788131310.39.pkl.gz

▶ Click Here for Debug Output

This calculator was created by Analysis North, The Cold Climate Housing Research Center, and Arctic Energy Systems. The underlying code for this calculator is Open Source and available on Github. The calculator was built entirely in the Python programming language through use of the Dash by Plotly framework. Questions and comments may be sent to Alan Mitchell alan@analysisnorth.com.

Kogoluktuk Hydro Analysis

Installed Size (kW)	700	
Annual Output (kWh)	5,410,000	per year
Shungnak Diesel Output	1,593,584	kWh, 2025
Ambler Diesel Output	1,304,896	kWh, 2025
Offset	187%	
Average Diesel Output	0.0674	avg gal/kWh
Potential Diesel Savings	364,394	gals/year

NAB Aviation Fuel Usage Estimates

Qavvik Air LLC	Total 2025 Fuel Usage
Cessna 208 Caravan/Pilatus PC-12 Medivac+Charter Services	95,865

Category			Annual Takeoff/Landings (2024, estimated)	Refuel	Fuel Efficiency (gal/nm)	Annual Fuel (Av Gas + Jet A)
General Aviation	Itinerant GA	Avgas	12469	Y	0.4	498,760
General Aviation	Local GA	Avgas	2963	Y	0.35	103,705
Total Commercial	Various	Jet A	36871	Y	0.3	1,106,130

Notes: 200 nm assumed RT distance per flight.

	Qavvik + Commercial Jet Fuel		Avgas (GA+Bering+Other)
Kotzebue	1,201,995		602,465
TOTALS	**1,201,995**		**602,465**

Table 3-11 - Estimate of Aircraft Operations Based on Schedules and Contacts, 2013

Operator	Service	Scheduled Operations		Actual Operations
		Frequency	Annual	
Alaska Airlines	Air Carrier	26/week	2,704	1,936
Bering Air Inc.	Commuter	151/week	15,704	15,704
Northern Air Cargo	Air Cargo	6/week	624	774
Everts Air[2]	Air Cargo	5/week	520	632
Ravn Alaska[3]	Commuter	141/week	14,664	14,664
Military	Military Transient	---	---	1,000
Part 91 Transient	GA	---	---	11,400
Part 91 Local	GA	---	---	2,709

Table 3-14 - OTZ Aviation Forecast

	Base Year: 2013					Avg. Annual Compound Growth Rates			
	Base Yr.	+1 Yr.	+5 Yrs.	+10 Yrs.	+15 Yrs.	+1 Yr.	+5 Yrs.	+10 Yrs.	+15 Yrs.
Passenger Enplanements									
Air Carrier	29,579	29,845	30,934	32,352	33,834	0.9	0.9	0.9	0.9
Commuter	31,890	33,147	34,666	36,254	36,254	0.9	0.9	0.9	0.9
Total Enplanements	**61,274**	**61,826**	**64,081**	**67,018**	**70,088**	**0.9**	**0.9**	**0.9**	**0.9**
Operations									
Itinerant									
Commercial									
Air Carrier	*1,936*	*1,953*	*2,024*	*2,118*	*2,215*	*0.9*	*0.9*	*0.9*	*0.9*
Commuter/ Air Taxi	*30,368*	*30,641*	*31,759*	*33,215*	*34,736*	*0.9*	*0.9*	*0.9*	*0.9*
All-Cargo Carriers	*1,406*	*1,419*	*1,470*	*1,538*	*1,608*	*0.9*	*0.9*	*0.9*	*0.9*
Total Commercial	33,710	34,012	35,253	36,871	38,559	0.9	0.9	0.9	0.9
General Aviation	11,400	11,503	11,922	12,469	13,040	0.9	0.9	0.9	0.9
Military	1,000	1,000	1,000	1,000	1,000	0	0	0	0
Local									
General Aviation	2,709	2,733	2,833	2,963	3,099	0.9	0.9	0.9	0.9
Military	0	0	0	0	0	0	0	0	0
Total Operations	**48,819**	**49,249**	**51,008**	**53,303**	**55,698**	**0.9**	**0.9**	**0.9**	**0.9**
Based Aircraft									
Single Engine (Non-Jet)	37	37	39	41	42	0	5	5	2.4
Multi-Engine (Non-Jet)	6	6	6	7	7	0	0	17	0
Jet Engine	0	0	0	0	0	0	0	0	0
Helicopter	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
Total Based Aircraft	**43**	**43**	**45**	**48**	**49**	**0**	**5**	**7**	**2**

Kotzebue GHG Calculations and Data

Metrics		Data Source
Population	2,931	2024 PCE Report
% of borough pop.	41%	
No. Housing Units	1,067	censusreport.org
No. Households	845	censusreport.org

Wood Informaiton		
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord Volume	128	ft3
Wood Use	4	cords/yr/household
	439	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	13%	NANA Survey, 2022 (Table 7)
Fuel Oil	84%	NANA Survey, 2022 (Table 7)
Other	3%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information		
Heating Fuel+ULSD Use	1,358,418	gallons per year
Electricity Fuel Use	1,219,298	gallons per year
Aviation Fuel Use	1,804,460	gallons per year
Unleaded Use	126,154	gallons per year

BULK FUEL TANKS

Crowley		
ULSD	752,253	ULSD1/ULSD2
HF-1/Stove Oil	1,687,543	
Jet Fuel	1,617,716	
Av Gas	779,093	
Unleaded Fuel	736,157	

KEA Tank Farm		
Total Fuel Use	1,168,000	gals per year (electrical)
ULSD	2,228,820	gallons (4 tanks)
Unleaded Fuel	500	gallons (mobile tank)

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	21,396,300	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	1,067	same as # households (0.1 lbs/unit)
Refrigerant Pounds	107	lbs R-410a/R-134a assumed (0.1 lb/HH)
	5	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

City of Kotzebue Fuel Usage		
ULSD	22,000	gallons per year
Heating Oil	85,000	gallons per year
Gasoline	17,000	gallons per year

Kotzebue GHG Calculations

Emission Factor Information

GHG	*GWP*
CO_2	1
CH_4	25
N_2O	298

		Emission Factors					
		CO_2		CH_4		N_2O	
	Heat Content (mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.0066	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.0066	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.0066	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.0066	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (mmBTU/ton)	17.48	93.8	206.8	0.0072	0.0159	0.0036	0.0079
Solid Waste (mmBTU/ton)	9.95	90.7	200.0	0.032	0.0705	0.0042	0.0093

		Emissions (tons)				
Fuel	**Total Use**	**CO_2**	**CH_4**	**N_2O**	**Other**	**Total by source (CO2e)**
ULSD+HF-1	2,684,716	30,131	1.234	0.247		30,235.9
Av Gas	602,465	5,519	0.239	0.048		5,538.9
Jet Fuel	1,201,995	12,914	0.537	0.107		12,959.8
Unleaded Fuel	157,747	1,526	0.065	0.013		1,531.8
Total Fuel CO2e Emissions		**50,091**	**51.87**	**123.67**		
		CO_2	**CH_4**	**N_2O**	**Other**	**Total by source (CO2e)**
Wood (mmBTU/yr)	9,667	1,000	0.077	0.038		1,012.9
Solid Waste	1,173	117	0.041	0.0054		120.0
Wastewater Trmt		64.2				64.2
Refrigerant					0.003	4.7
	TOTALS	**51,272**	**2.193**	**0.459**	**0.003**	

TOTAL CO2e	**51,272**	**54.8**	**136.7**	**4.7**	
GRAND TOTAL	**51,468**				

Kivalina GHG Calculations and Source Data

Metrics		Data Source
Population	426	2024 PCE Report
% of borough pop.	6%	
No. Housing Units	174	censusreport.org
No. Households	154	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	12	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	2%	NANA Survey, 2022 (Table 7)
Fuel Oil	85%	NANA Survey, 2022 (Table 7)
Other	14%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Emissions/Information		
Heating Fuel Use	54,242	gallons per year
Electricity Fuel Use	117,894	gallons per year
Unleaded Use	13,013	gallons per year
NWABSD/ANTHC	43,000	gallons per year
Maniilaq	41,737	gallons per year

Bulk Fuel Tanks

Owner	Fuel	Capacity (gal)	No. Tanks
City of Kivalina (WTP)	Diesel	8,400	1
NWABSD	Diesel	97,000	4
Native Store	Gasoline	44,000	3
Native Store	Diesel	84,400	5
AVEC	Diesel	144,900	18

Refrigerant Quantities

No. Units	154	same as # households (0.1 lbs/unit)
Refrigerant Pounds	15	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Solid Waste	0.05	kg/person/day (burned)
	0.110	lb/person/day (burned)
Wastewater Treatment		
Wastewater Volume	5.0	gal/ppl/day (assumed)
	777,450	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Kivalina GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	256,873	2,883	0.118	0.024		2,893.0
Av Gas	0	0	0	0		0.0
Jet Fuel	0	0	0	0		0.0
Unleaded Fuel	13,013	126	0.005	0.001		126.4
Total Fuel CO2e Emissions		**3,009**	**3.09**	**7.36**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood (mmBTU)	271	28	0.002	0.0011		28.4
Solid Waste (mmBTU)	85	9	0.003	0.0004	0.0001	8.7
Wastewater Trmt		2.3				2.3
Refrigerant					0.0004	0.7
	TOTALS	3,048	0.129	0.026	0.000	

TOTAL CO2e	**3,048**	**3.2**	**7.8**	**0.8**
GRAND TOTAL	**3,060**			

Noatak GHG Calculations and Data

Metrics		Data Source
Population	540	2024 PCE Report
% of borough pop.	7%	
No. Housing Units	151	censusreport.org
No. Households	138	censusreport.org
Commercial Facilities	N/A	assume all are heated with liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	5	cords/yr/household
	76	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	11%	NANA Survey, 2022 (Table 7)
Fuel Oil	85%	NANA Survey, 2022 (Table 7)
Other	14%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Emissions/Information		
Heating Fuel Use	55,852	gallons per year
Electricity Fuel Use	144,703	gallons per year
Unleaded Use	13,374	gallons per year
Maniilaq Stove Oil	41,737	gallons per year
NWABSD/ANTHC	45,000	gallons per year

Solid Waste	0.05	kg/person/day (burned)
	0.110	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	3,942,000	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	151	same as # households (0.1 lbs/unit)
Refrigerant Pounds	15	lbs R-410a/R-134a assumed (0.1 lb/house)
	2	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
NVN (WTP/airport)	Diesel	20,000	2
NWABSD	Diesel	72,000	12
NVN	Gasoline	33,000	2
NVN	Diesel	23,000	1
AVEC	Diesel	94,800	12

Noatak GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	287,292	3,224	0.132	0.026		3,235.5
Av Gas	0	0	0	0		0.0
Jet Fuel	0	0	0	0		0.0
Unleaded Fuel	13,374	129	0.006	0.001		129.9
Total Fuel CO2e Emissions		**3,354**	**3.44**	**8.20**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood	1,670	173	0.013	0.007		175.0
Solid Waste	108	11	0.004	0.0005		11.1
Wastewater Trmt		11.8				11.8
Refrigerant					0.0008	1.3
	TOTALS	3,549	0.15	0.03	0.001	

TOTAL CO2e	**3,549**	**3.9**	**10.3**	**1.3**
GRAND TOTAL	**3,565**			

Deering GHG Calculations and Data

Metrics		Data Source
Population	185	2024 PCE Report
% of borough pop.	3%	
No. Housing Units	70	censusreport.org
No. Households	51	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	8	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	4%	NANA Survey, 2022 (Table 7)
Fuel Oil	90%	NANA Survey, 2022 (Table 7)
Other	4%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	1,350,500	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	70	same as # households (0.1 lbs/unit)
Pounds per Unit	7	lbs R-410a/R-134a assumed (0.1 lb/house)
	0	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
City of Deering	Diesel	23,000	1
NWABSD	Diesel	46,000	2
Ipnatchiaq Electric Company	Diesel	69,000	3
Deering IRA	Diesel	73,000	4
Deering IRA	Gasoline	31,000	2

Fuel Use Information		
Home Heaeting Fuel	44,085	gallons per year
Electricity Diesel	61,609	gallons per year
Maniilaq Heating Fuel	19,240	gallons per year
NWABSD/ANTHC Fuel	24,000	gallons per year

Deering GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	148,934	1,672	0.068	0.014		1,677.3
Av Gas		0	0	0		0.0
Jet Fuel		0	0	0		0.0
Unleaded Fuel	4,651	45	0.002	0.0004		45.2
Total Fuel CO2e Emissions		**1,717**	**1.76**	**4.19**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood	180	19	0.0014	0.0007		18.8
Solid Waste	74	7	0.003	0.0003		7.6
Wastewater Trmt		4.1				4.1
Refrigerant					0.0002	0.3
	TOTALS	1,747	0.074	0.015	0.0002	

TOTAL CO2e	**1,747**	**1.9**	**4.5**	**0.3**
GRAND TOTAL	**1,753**			

Buckland GHG Calculations and Data

Metrics		Data Source
Population	629	2024 PCE Report
% of borough pop.	9%	
No. Housing Units	159	censusreport.org
No. Households	146	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	29	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	5%	NANA Survey, 2022 (Table 7)
Fuel Oil	90%	NANA Survey, 2022 (Table 7)
Other	5%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	4,591,700	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	159	same as # households (0.1 lbs/unit)
Pounds per Unit	16	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
NVB	Diesel	97,000	5
NVB	Gasoline	51,000	3
City of Buckland	Diesel	161,000	7
NWABSD	Diesel	92,000	4

Fuel Use Information		
Home Heaeting Fuel	90,000	gallons per year
Electricity Diesel	83,446	gallons per year
Maniilaq Heating Fuel	27,248	gallons per year
NWABSD/ANTHC Fuel	33,000	gallons per year

Buckland GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	233,694	2,623	0.107	0.021		2,631.9
Av Gas		0	0	0		0.0
Jet Fuel		0	0	0		0.0
Unleaded Fuel	15,742	152	0.007	0.001		152.9
Total Fuel CO2e Emissions		**2,775**	**2.85**	**6.79**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood (mmbtu)	642	66	0.005	0.003	0	67.3
Solid Waste (mmbtu)	252	25	0.009	0.0012	0	25.7
Wastewater Trmt		13.8				13.8
Refrigerant					0.0004	0.7
	TOTALS	2,881	0	0	0.0004	

TOTAL CO2e	**2,881**	**3.2**	**7.9**	**0.7**
GRAND TOTAL	**2,892**			

Selawik GHG Calculations and Data

Metrics		Data Source
Population	757	2024 PCE Report
% of borough pop.	10%	
No. Housing Units	133	censusreport.org
No. Households	96	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	150	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	39%	NANA Survey, 2022 (Table 7)
Fuel Oil	50%	NANA Survey, 2022 (Table 7)
Other	11%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information		
Home Heating Oil Use	101,667	gallons per year
Electricity Diesel Use	214,659	gallons per year
Maniilaq Stove Oil	15,080	gallons per year
NWABSD Stove Oil	57,400	gallons per year

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	5,526,100	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	133	same as # households (0.1 lbs/unit)
Pounds per Unit	13	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
City of Selawik	Diesel	48,000	2
Native Village of Selawik	Diesel	142,500	7
Native Village of Selawik	Gasoline	103,500	5
AVEC	Diesel	294,000	7
NIHA	Diesel	30,000	2
NWABSD	Diesel	144,000	4

Selawik GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	388,806	4,364	0.179	0.036		4,378.8
Av Gas		0	0.000	0.000		0.0
Jet Fuel		0	0.000	0.000		0.0
Unleaded Fuel	9,177	89	0.004	0.001		89.1
Total Fuel CO2e Emissions		**4,452**	**4.56**	**10.88**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood (mmBTU)	3,295	341	0.026	0.013		345.210
Solid Waste (mmBTU)	303	30	0.011	0.0014		30.98
Wastewater Trmt		16.58				16.58
Refrigerant					0.0003	0.58
	TOTALS	**4,840**	**0.219**	**0.051**	**0.0003**	

TOTAL CO2e	**4,840**	**5.5**	**15.2**	**0.6**
GRAND TOTAL	**4,861**			

Noorvik GHG Calculations and Data

Metrics		Data Source
Population	659	2024 PCE Report
% of borough pop.	9%	
No. Housing Units	167	censusreport.org
No. Households	122	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	44	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	9%	NANA Survey, 2022 (Table 7)
Fuel Oil	78%	NANA Survey, 2022 (Table 7)
Other	13%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information		
Total Stove Oil Use	114,102	gallons per year
Electricity Diesel Use	161,463	gallons per year
Maniilaq Stove Oil	34,497	gallons per year
NWABSD Stove Oil	44,000	gallons per year

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	4,810,700	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	167	same as # households (0.1 lbs/unit)
Pounds per Unit	17	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	**Fuel**	**Capacity (gal)**	**No. Tanks**
AVEC	Diesel	216,000	8
NWABSD	Diesel	92,400	8
City of Noorvik (WTP)	Diesel	44,600	2
NNC	Diesel	81,100	4
NNC	Gasoline	72,300	4
Morris Trading Post	Diesel	45,800	3
Morris Trading Post	Gasoline	32,300	2

Noorvik GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Refrigerant**	**Total by source (CO2e)**
ULSD/HF-1	354,062	3,974	0.163	0.033		3,987.5
Av Gas		0	0.000	0.000		0.0
Jet Fuel		0	0.000	0.000		0.0
Unleaded Fuel	13,004	126	0.005	0.001		126.3
Total Fuel CO2e Emissions		**4,100**	**4.20**	**10.02**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood	966	100	0.008	0.004		101.24
Solid Waste	264	26	0.009	0.0012		26.97
Wastewater Trmt		14.43				14.43
Refrigerant					0.0004	0.73
	TOTALS	**4,240**	**0.185**	**0.039**	**0.0004**	

TOTAL CO2e	**4,240**	**4.6**	**11.5**	**0.7**
GRAND TOTAL	**4,257**			

Kiana GHG Calculations and Data

Metrics		Data Source
Population	413	2024 PCE Report
% of borough pop.	6%	
No. Housing Units	149	censusreport.org
No. Households	105	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	4	cords/yr/household
	55	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	13%	NANA Survey, 2022 (Table 7)
Fuel Oil	78%	NANA Survey, 2022 (Table 7)
Other	9%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	3,014,900	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	149	same as # households (0.1 lbs/unit)
Pounds per Unit	15	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
AVEC	Diesel	108,000	4
NWABSD	Diesel	63,200	7
City of Kiana	Diesel	119,900	6
City of Kiana	Gasoline	83,700	6

Fuel Use Information		
Home Heaeting Fuel	95,949	gallons per year
Electricity Diesel	132,904	gallons per year
Maniilaq Heating Fuel	35,850	gallons per year
NWABSD/ANTHC Fuel	32,000	gallons per year

Kiana GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	296,703	3,330	0.136	0.027		3,341.5
Av Gas		0	0	0		0.0
Jet Fuel		0	0	0		0.0
Unleaded Fuel	11,859	115	0.005	0.001		115.2
Total Fuel CO2e Emissions		**3,445**	**3.53**	**8.42**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood (mmbtu)	1,201	124	0.010	0.005		125.86
Solid Waste (mmbtu)	165	17	0.006	0.0008		16.90
Wastewater Trmt		9.0				9.0
Refrigerant					0.0004	0.66
	TOTALS	**3,595**	**0.157**	**0.034**	**0.0004**	

TOTAL CO2e	**3,595**	**3.9**	**10.1**	**0.7**
GRAND TOTAL	**3,609**			

Ambler GHG Calculations and Data

Metrics		Data Source
Population	256	2024 PCE Report
% of borough pop.	4%	
No. Housing Units	109	censusreport.org
No. Households	76	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	6	cords/yr/household
	251	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	55%	NANA Survey, 2022 (Table 7)
Fuel Oil	37%	NANA Survey, 2022 (Table 7)
Other	9%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information		
Home Heaeting Fuel	64,831	gallons per year
Electricity Diesel	105,584	gallons per year
Maniilaq Heating Fuel	29,845	gallons per year
NWABSD/ANTHC Fuel	21,000	gallons per year

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	1,868,800	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	109	same as # households (0.1 lbs/unit)
Pounds per Unit	11	lbs R-410a/R-134a assumed (0.1 lb/house)
	1	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity				
Owner	**Fuel**	**Capacity (gal)**	**Operational Status**	**No. Tanks**
City of Ambler	Gasoline	4,000	Active	1
City of Ambler (WTP/depot)	Diesel	12,200	Active	2
City of Ambler (new)	Gasoline	30,000	In-construction	3
City of Ambler (new)	Diesel	30,000	In-construction	3
NWABSD	Diesel	59,500	Active	2
AVEC	Diesel	101,200	Active	10

Ambler GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	221,260	2,483	0.102	0.020		2,491.9
Av Gas		0	0	0		0.0
Jet Fuel		0	0	0		0.0
Unleaded Fuel	6,693	65	0.003	0.0006		65.0
Total Fuel CO2e Emissions		**2,548**	**2.61**	**6.23**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood (mmbtu)	5,518	570	0.044	0.022		578.1
Solid Waste (mmbtu)	102	10	0.004	0.0005		10.5
Wastewater Trmt		5.6				5.6
Refrigerant					0.0005	1.0
	TOTALS	3,134	0	0	0.001	

TOTAL CO2e	**3,134**	**3.8**	**12.9**	**1.0**
GRAND TOTAL	**3,152**			

Shungnak GHG Calculations and Data

Metrics		Data Source
Population	251	2024 PCE Report
% of borough pop.	3%	
No. Housing Units	68	censusreport.org
No. Households	44	censusreport.org
Commercial Facilities	N/A	assume all are heated w/ liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	6	cords/yr/household
	13	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	5%	NANA Survey, 2022 (Table 7)
Fuel Oil	21%	NANA Survey, 2022 (Table 7)
Other	5%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information		
Household Stove Oil	36,051	gallons per year
Electricity Diesel	112,210	gallons per year
Maniilaq Stove Oil	29,767	gallons per year
NWABSD Stove Oil	18,000	gallons per year

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	1,832,300	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	68	same as # households (0.1 lbs/unit)
Pounds per Unit	7	lbs R-410a/R-134a assumed (0.1 lb/house)
	0	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	**Fuel**	**Capacity (gal)**	**No. Tanks**
City of Shungnak (WTP)	Diesel	5,000	1
NWABSD	Diesel	30,500	4
AVEC (new)	Diesel	120,000	4
NVS (new)	Gasoline	32,500	1.5
NVS (new)	Diesel	62,500	2.5

Note: Half tanks are dual-compartment single-tank.

Shungnak GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	196,028	2,200	0.090	0.018		2,207.7
Av Gas		0	0.000	0.000		0.0
Jet Fuel		0	0.000	0.000		0.0
Unleaded Fuel	4,323	42	0.002	0.000		42.0
Total Fuel CO2e Emissions		**2,242**	**2.30**	**5.48**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood	290	30	0.002	0.001		30.4
Solid Waste	100	10	0.004	0.0005		10.27
Wastewater Trmt		5.50				5.50
Refrigerant					0.0002	0.30
	TOTALS	**2,287**	**0.098**	**0.020**	**0.0002**	

TOTAL CO2e	**2,287**	**2.4**	**6.0**	**0.3**
GRAND TOTAL	**2,296**			

Kobuk GHG Calculations and Data

Metrics		Data Source
Population	169	2024 PCE Report
% of borough pop.	2%	
No. Housing Units	56	censusreport.org
No. Households	38	censusreport.org
Commercial Facilities	N/A	assume all are heated with liquid fuels
Birch	25	lb/ft3, dry
	26	mmBTU/cord
Spruce	18	mmBTU/cord
Cord	128	ft3
Wood Use	6	cords/yr/household
	11	cords/yr (total)

Heating Fuel Fraction		Data Source
Wood Stove	5%	NANA Survey, 2022 (Table 7)
Fuel Oil	74%	NANA Survey, 2022 (Table 7)
Other	21%	NANA Survey, 2022 (Table 7)
Fuel Oil/ULSD	139,000	BTU/gal (40 CFR 98)

Fuel Use Information	
Stove Oil Usage	29,174
Electricity Diesel	0
Maniilaq Heating Oil	47,723
NWABSD/ANTHC Fuel	18,000

Wastewater Treatment		
Wastewater Volume	20.0	gal/ppl/day (assumed)
	1,233,700	gal/yr
COD Load	300	mg/L
CO2 Emission Factor	2.4	kgCO2/kgCOD removed

Refrigerant Quantities		
No. Units	56	same as # households (0.1 lbs/unit)
Pounds per Unit	6	lbs R-410a/R-134a assumed (0.1 lb/house)
	0	5% per year leak rate (assumed) [lb/yr]
R-410a/R-134a GWP	1,759	(CO_2e) [avg btwn both refrigerants]

Bulk Fuel Capacity			
Owner	Fuel	Capacity (gal)	No. Tanks
City of Kobuk	Gasoline	4,000	1
City of Kobuk	Diesel	12,900	2
NWABSD	Diesel	27,200	4

Solid Waste	0.1	kg/person/day (burned)
	0.220	lb/person/day (burned)

Kobuk GHG Calculations

Emission Factor Information

GHG	*GWP*
CO2	1
CH4	25
N2O	298

		Emission Factors					
	Heat Content	CO2		CH4		N2O	
	(mmBTU/gal)	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU	kg/mmBTU	lb/mmBTU
ULSD/HF-1	0.139	73.25	161.49	0.003	0.00661	0.0006	0.00132
Unleaded	0.125	70.22	154.81	0.003	0.00661	0.0006	0.00132
Av Gas	0.12	69.25	152.67	0.003	0.00661	0.0006	0.00132
Jet Fuel	0.135	72.2	159.17	0.003	0.00661	0.0006	0.00132

	(lb/ton)	CO2		CH4		N2O	
Wood (lb/ton)	17.48	93.8	206.79	0.0072	0.01587	0.0036	0.00794
Solid Waste (mmBTU/ton)	9.95	90.7	199.96	0.032	0.07055	0.0042	0.00926

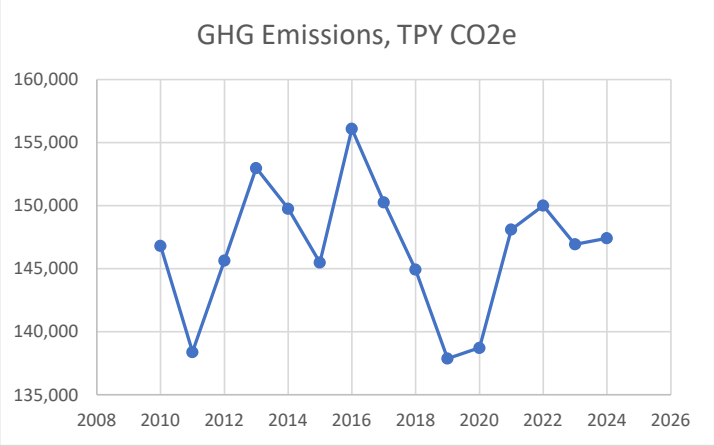
		Emissions (tons)				
Fuel	**Total Use**	**CO2**	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
ULSD/HF-1	94,897	1,065	0.044	0.0087		1,068.7
Av Gas		0	0	0		0.0
Jet Fuel		0	0	0		0.0
Unleaded Fuel	3,590	35	0.0015	0.0003		34.9
Total Fuel CO2e Emissions		**1,100**	**1.13**	**2.69**		

		CO2	**CH4**	**N2O**	**Other**	**Total by source (CO2e)**
Wood	251	26	0.0020	0.0010		26.28
Solid Waste	31	3.07				3.07
Wastewater Trmt		3.70				3.70
Refrigerant					0.0001	0.25
	TOTALS	**1,132**	**0.047**	**0.010**	**0.0001**	

TOTAL CO2e	**1,132**	**1.2**	**3.0**	**0.2**
GRAND TOTAL	**1,137**			

2024 Red Dog Mine GHG Emissions (40 CFR Part 98 Report)

			Emissions (metric tons)				
Unit Name	Type	Fuel	CO2	CH4	N2O	Total CH4 emissions CO2e	Total N2O emsissions CO2e
MG-1,Wartsila-Primary Generator #1	Generator	Fuel Oil No. 2	13504.1	0.55	0.11	15.3	29
MG-2,Wartsila Primary Generator#2	Generator	Fuel Oil No. 2	13842.3	0.56	0.112	15.7	29.8
MG-3,Wartsila Primary Generator#3	Generator	Fuel Oil No. 2	17622	0.71	0.143	20	37.9
MG-4,Wartsila Primary Generator#4	Generator	Fuel Oil No. 2	13258.8	0.54	0.108	15.1	28.5
MG-5,Wartsila Primary Generator#5	Generator	Fuel Oil No. 2	16469.8	0.67	0.134	18.7	35.4
MG-6,Wartsila Primary Generator#6	Generator	Fuel Oil No. 2	17522.9	0.71	0.142	19.9	37.7
MG18,Wartsila Primary Generator#7	Generator	Fuel Oil No. 2	21894.9	0.89	0.178	24.9	47.1
MG17,Wartsila Primary Generator#8	Generator	Fuel Oil No. 2	22147.9	0.9	0.18	25.2	47.6
MI-3 Adv Construction Incinerator	Incinerator	Fuel Oil No. 2	488.9	0.02	0.004	0.6	1.1
	Solid Waste	Solid Waste	129	0.05	0.006	1.3	1.6
MH-2 Standby Heater #2 Service Complex			0	0	0	0	0
MH-3 Standby Heater No. 3 - PAC-STP			0	0	0	0	0
MG-7 Cat-Services Backup Generator #1	Generator	Fuel Oil No. 2	6.6	0	0	0	0
MG-8 Cat-Services Backup Generator #2	Generator	Fuel Oil No. 2	5.4	0	0	0	0
MG-9 Cat-PAC - Backup Generator	Generator	Fuel Oil No. 2	8.1	0	0	0	0
GP-All Space Heaters	Heater	Fuel Oil No. 2	6925.4	0.28	0.056	7.9	14.9
14-108 Emulsion Plant Boiler	Boiler	Fuel Oil No. 2	50.9	0	0	0.1	0.1
MI-2 John Zink - Minesite Incinerator	Incinerator	Fuel Oil No. 2	1143.5	0.05	0.009	1.3	2.5
	Solid Waste	Solid Waste	318.1	0.11	0.015	3.1	3.9
MH-1 Stdby Htr #1 Service Complex	Heater	Fuel Oil No. 2	0	0	0	0	0
MH-6 Standby Glycol/Water Heater	Boiler	Fuel Oil No. 2	1466.6	0.06	0.012	1.7	3.2
MH-7 Glycol Heater Boiler 14-251	Boiler	Fuel Oil No. 2	66.4	0	0.001	0.1	0.1
MH-8 Glycol Heater Boiler 14-252	Boiler	Fuel Oil No. 2	44.1	0	0	0.1	0.1



2024 Red Dog Mine GHG Emissions (40 CFR Part 98 Report)

Red Dog Mine GHG Emissions

	Total CO2 Emissions (metric tons/yr)	Total CH4 Emissions (metric tons/yr)	Total N2O Emissions (metric tons/yr)	CH4e (metric tpy)	N2Oe (metric tpy)
Generator	136,283	5.53	1.107	154.8	293
Incinerators	2,080	0.23	0.034	6.3	9.1
Boilers/heaters	8,553	0.34	0.069	9.9	18.4
Total	146,916	6.1	1.21	171	320.5
Total CO2e	**147,407**				

Note: Data obtained from EPA GHG Reporting website.

	147,407.2	(metric tons) Reported on Summary Page
2024 GHG Emissions	147,407.2	metric tons CO2e
	162,486.96	US tons (2000 lbs)
	14,477,590	Gallons of diesel equivalent

https://eipresearch.github.io/2024-GHGRP/2024-1006463.html

Year	Metric tons Emissions	US ton Emissions
2010	146,813	161,833
2011	138,391	152,550
2012	145,644	160,545
2013	152,986	168,638
2014	149,762	165,084
2015	145,485	160,370
2016	156,103	172,074
2017	150,265	165,639
2018	144,916	159,742
2019	137,865	151,970
2020	138,712	152,904
2021	148,097	163,249
2022	150,005	165,352
2023	146,931	161,964
2024	147,407	162,488
Average	146,625	161,627