

An aerial photograph of a coastal town, likely Toksook Bay, taken at dusk or dawn. The town is illuminated with warm lights, and its buildings are visible against the darkening sky. In the foreground, several tall, white wind turbine towers stand on a grassy plain. The town is situated on a peninsula or near a bay, with a river or stream winding through the landscape. The overall scene is a mix of natural beauty and modern infrastructure.

Tribal Energy Conference
2020 Pandemic Virtual Version
November 2020

Forest Button, Manager,
Project Development & Key Accounts

Toksook Bay

Alaska Village Electric Cooperative, Inc./
Stebbins Native Corporation Renewable
Energy Joint Venture

(ASRE)

Stebbins / St. Michael Renewable Energy
Project



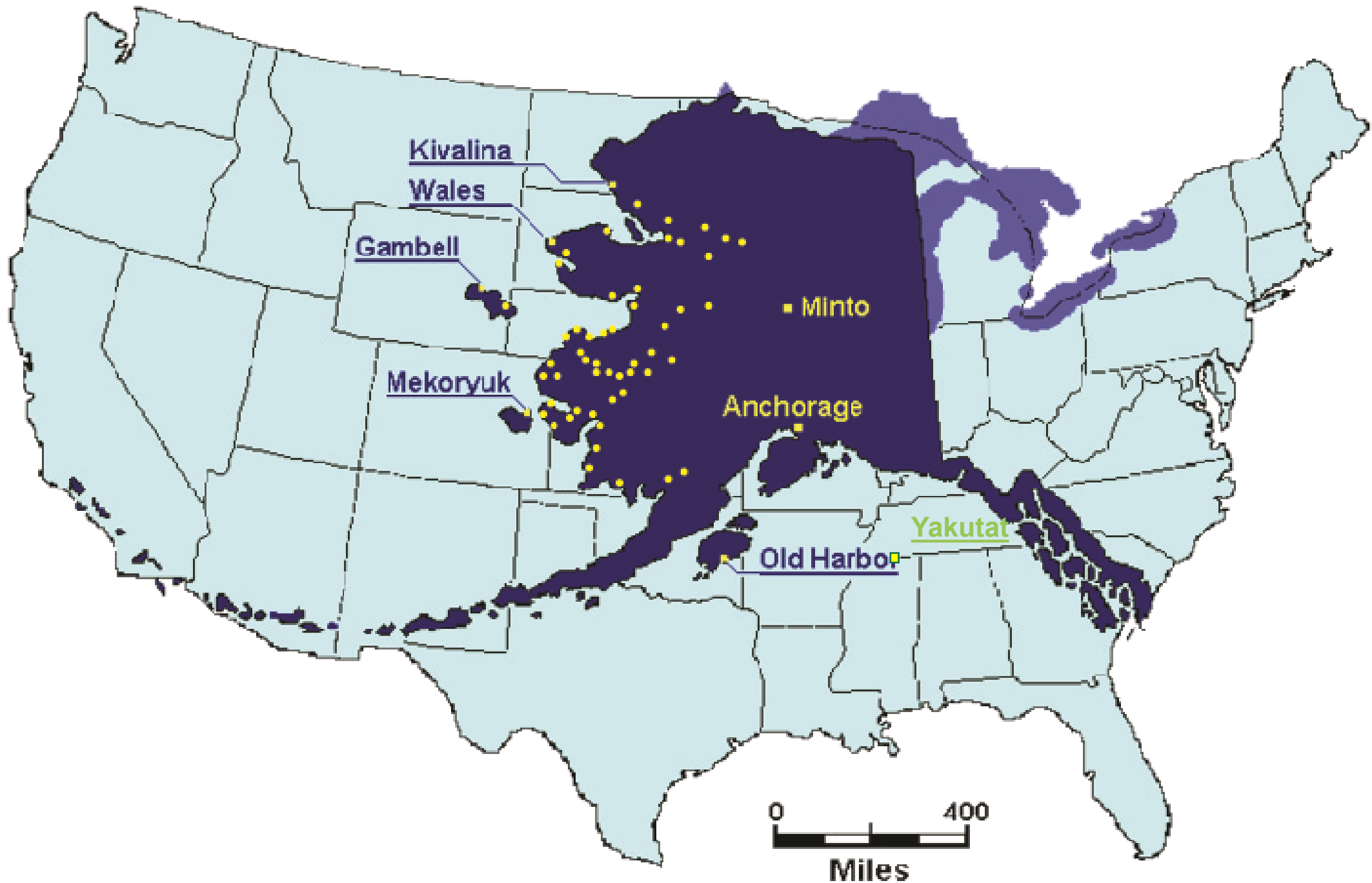
Alaska Village Electric Cooperative

Member owned, not-for-profit

Energizing Rural Alaska since 1968

- 58 Member Communities
- 11,500 Services
- Population Served: 30,194
- 94% Alaska Native
- Smallest: Oscarville 64 → Largest: Bethel 6,469
- 9 million gallons of diesel / \$20 million (\$2.24)
- 90 FT / 95 PT Employees
- 49 Power Plants
- 32 Wind turbines serving 20 communities
- 2 Solar arrays serving 2 communities
- Two tug and barge sets

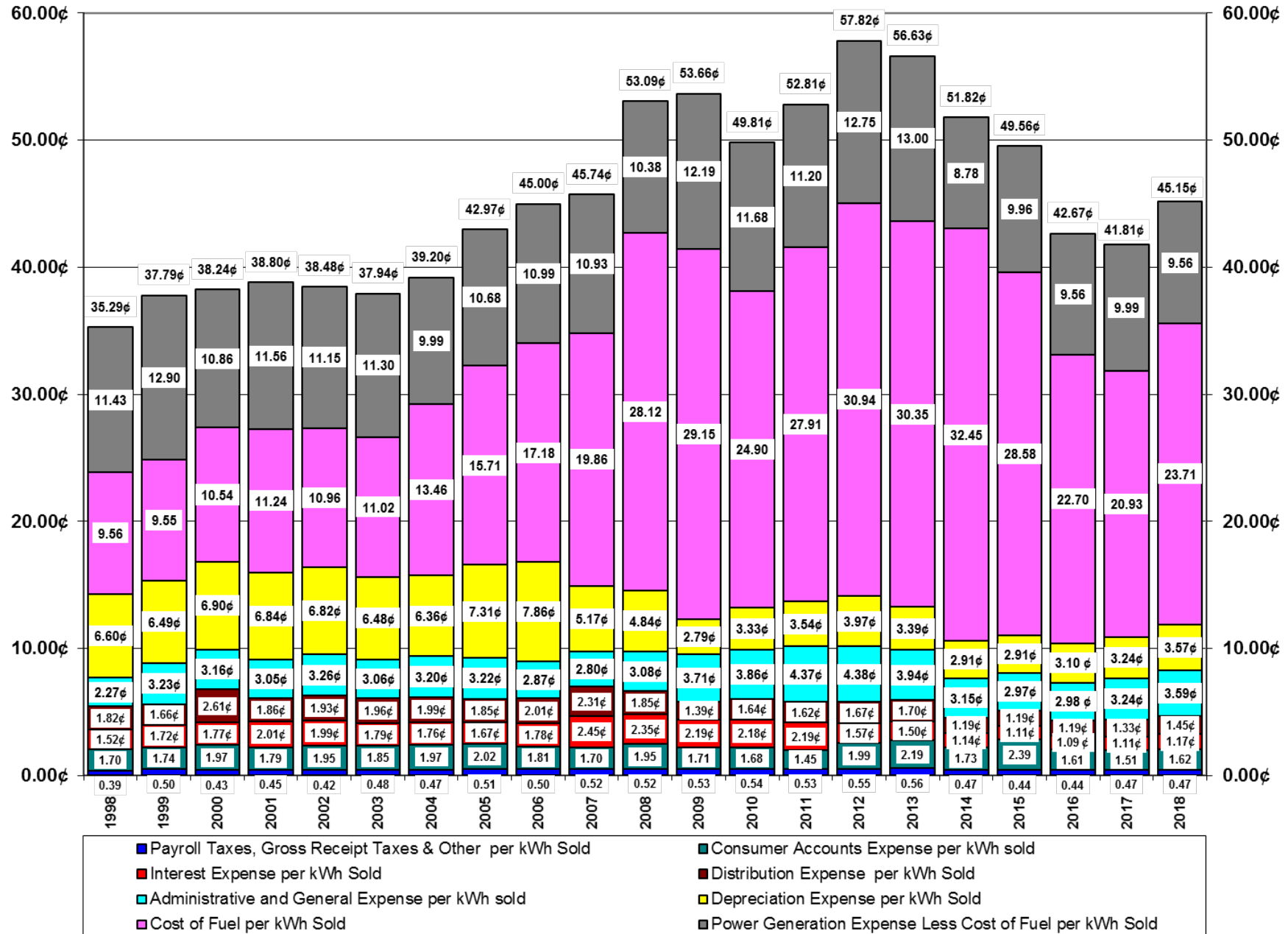




A satellite-style map of Alaska with numerous yellow location markers. Each marker is accompanied by a text label identifying a community in Alaska, USA. The labels are arranged roughly from north to south, following the coastline and inland locations. Some labels include zip codes, such as '99752' for Kotzebue. The map shows the state's outline, major water bodies, and topographical features like mountains and snow-capped peaks.

Kivalina, AK, USA
Noatak, AK, USA
Wales, AK, USA
Gambell, AK, USA
Teller, AK, USA
Savoonga, AK, USA
Kotzebue, AK 99752, USA
Kiana, AK, USA
Selawik, AK, USA
Shungnak, AK, USA
Ambler, AK, USA
Kobuk, AK, USA
Koyuk, AK, USA
Elim, AK, USA
Shaktoolik, AK, USA
Kotlik, AK, USA
Kaltag, AK, USA
Huslia, AK, USA
Nulato, AK, USA
Pitkas Point, AK, USA
Tununak, AK, USA
Holy Cross, AK, USA
Lower Kalskag, AK, USA
Bethel, AK, USA
Goodnews Bay, AK, USA
Togiak, AK, USA
Dillingham, AK, USA
New Stuyahok, AK, USA
Grayling, AK, USA
Anvik, AK, USA
Shageluk, AK, USA
Upper Kalskag, AK, USA
Minto, AK, USA
Old Harbor, AK, USA

Alaska Village Electric Cost Components per Kilowatt-hour Sold



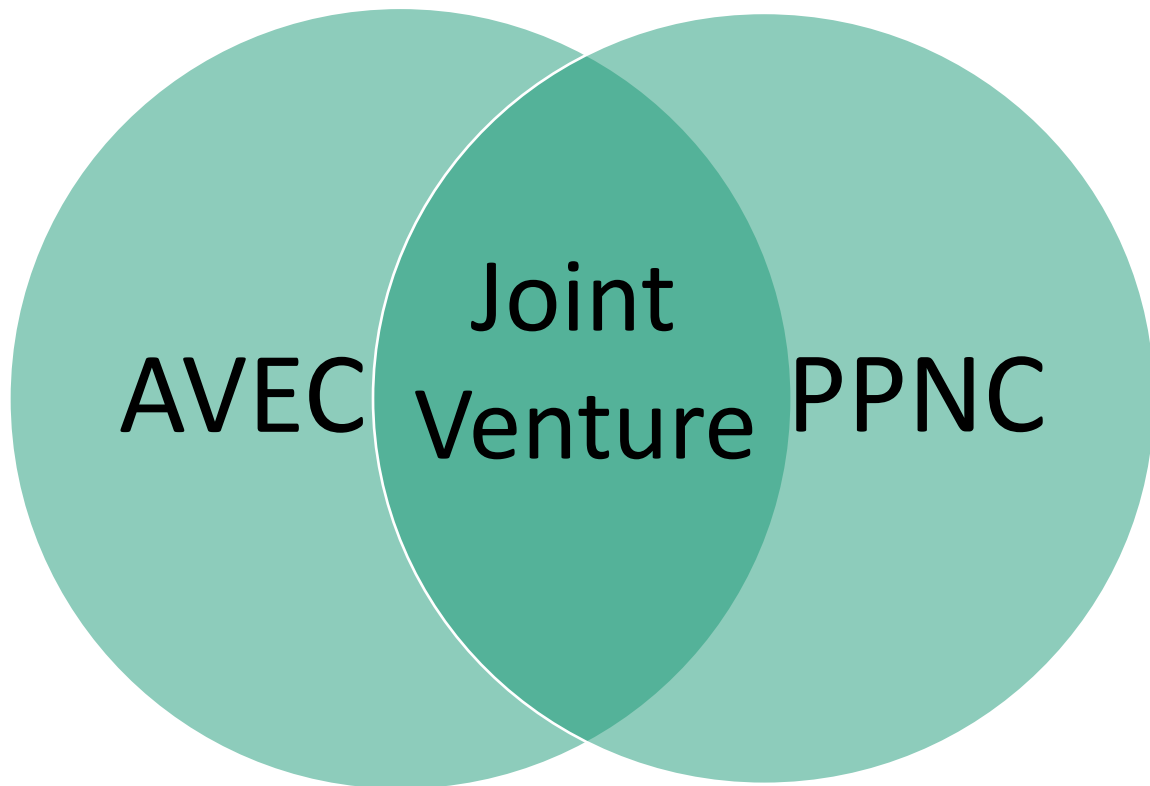
AVEC Wind Program 2019

- **32 Wind Turbines (4,800 kW)**
- **11 Wind Farms**
- **Serving 20 Communities**
- **7.22 million kWh**
- **Displaced 373,000 gallons**
- **Saving \$1.13 million**



- **Since 2006 3.9 million gallons – 13.1 Million**

- Partnership between AVEC and SNC
 - To benefit the communities of Stebbins and Saint Michaels



Project Partners:

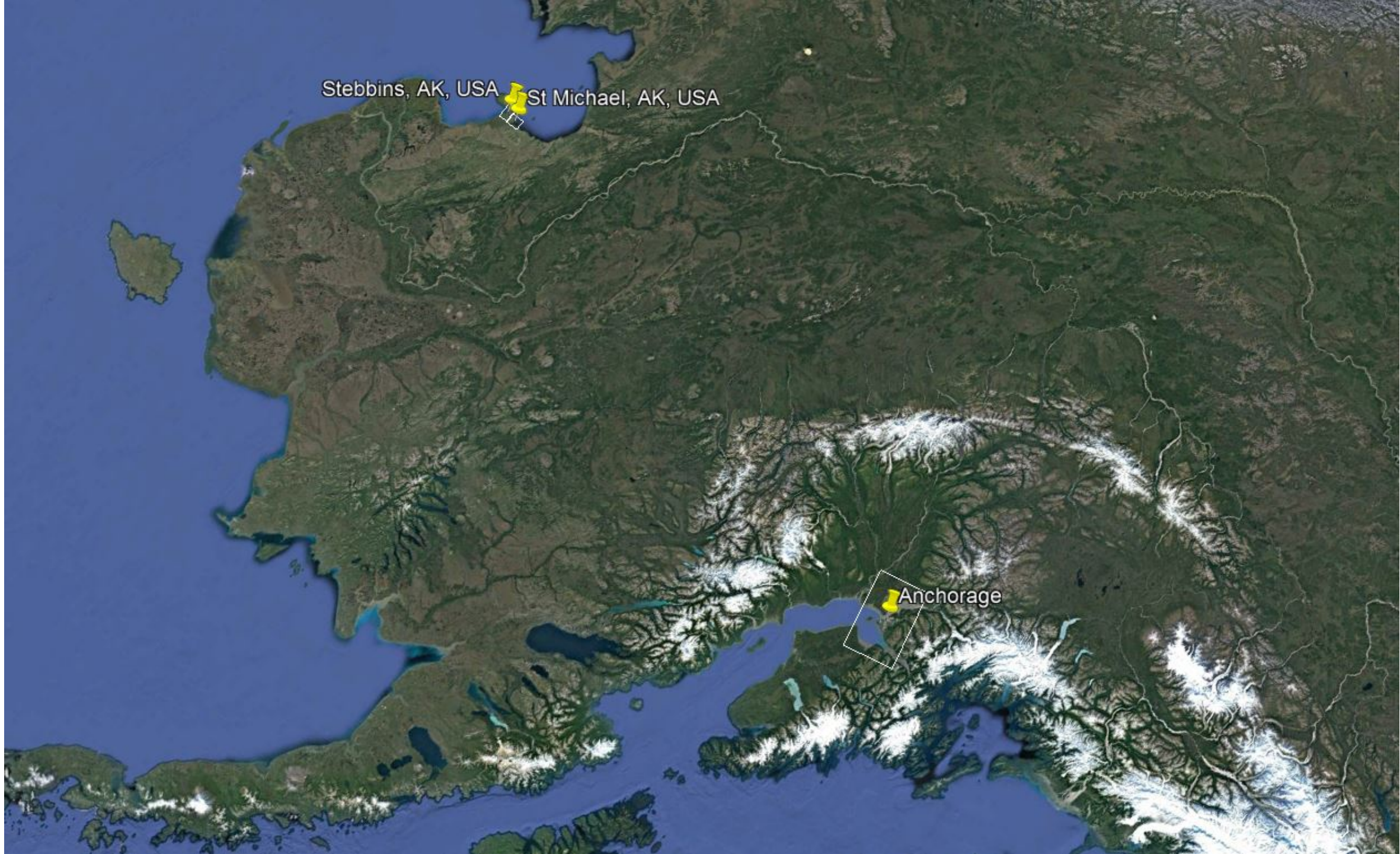
- City of Stebbins
- Native Village of Stebbins
- City of St. Michael
- Native Village of Saint Michael
- Stebbins Native Corporation
- Stebbins Community Association
- St. Michael Native Corporation.
- Denali Commission
- DOE Office of Indian Energy

Stebbins, AK, USA



St Michael, AK, USA

Anchorage





Norton Sound

Norton Bay

Stebbins, AK, USA

St Michael, AK, USA



St. Michael, AK

Population 410

Gas \$

Diesel \$

Electric Rate:

0-500kWh .2426

501-700kWh .5249



Stebbins, Alaska

Population 565

Gas \$4.85

Diesel \$5.37

Electric Rate:

0-500kWh .2426

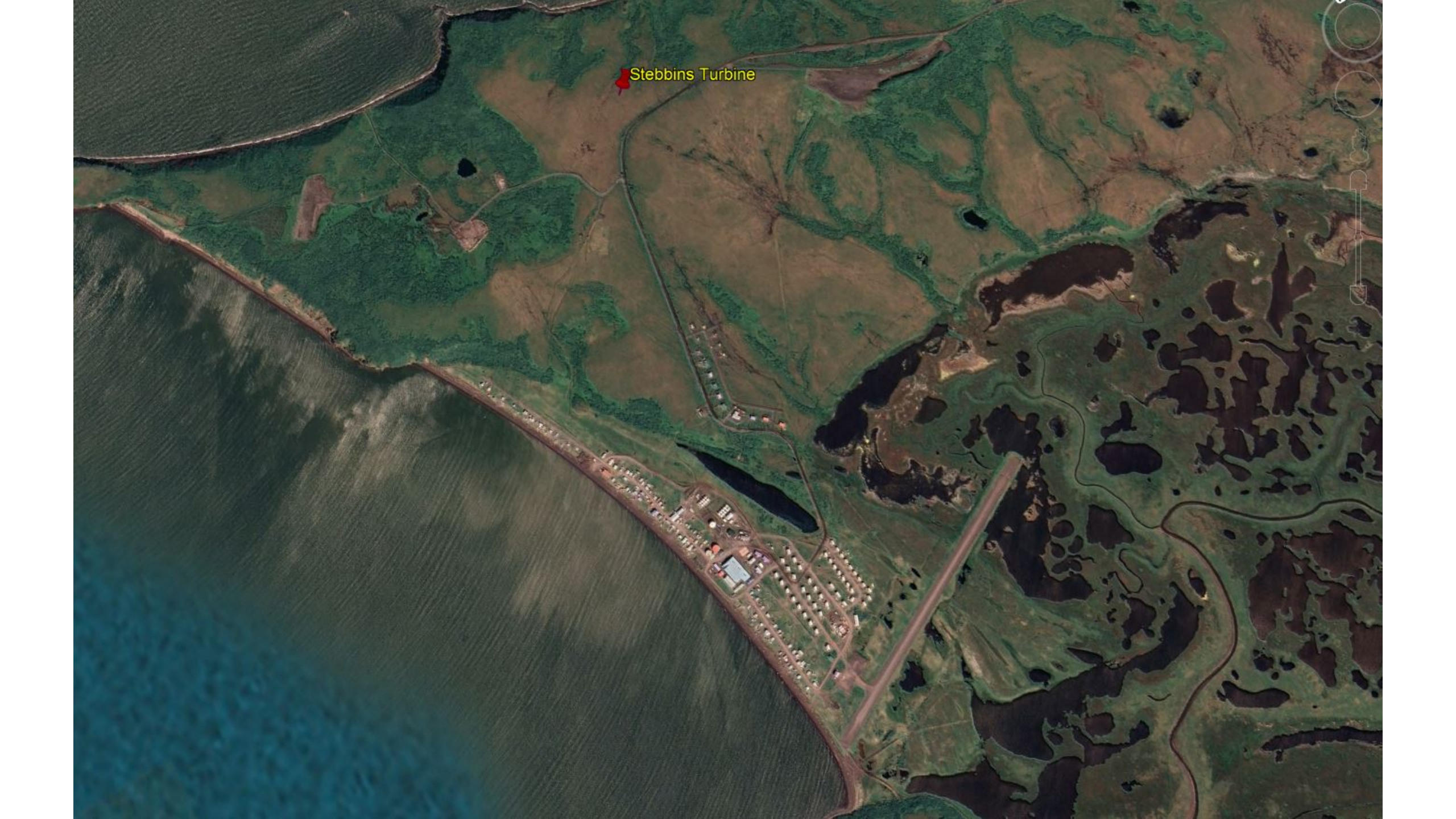
501-700kWh .5249

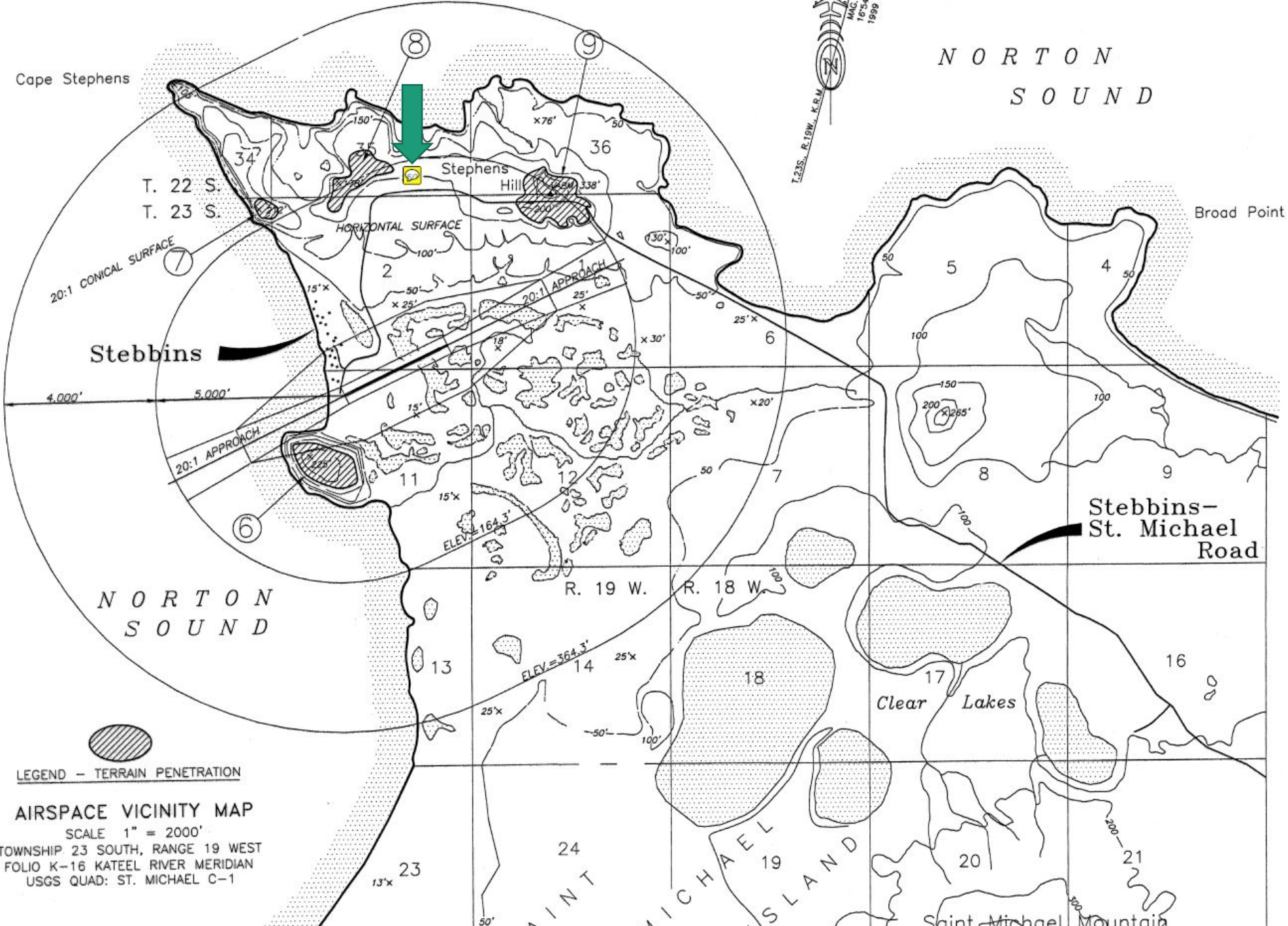
Install EWT 900kW Turbine

- Offset 104,700 of diesel
- Savings in first year \$365,403
- Life time savings \$11.4 million
- Project life 25 years
- NPV benefit \$6.694 million
- Provide wind to heat



Stebbins Turbine





NORTON
SOUND

Cape Stephens

T. 22 S.
T. 23 S.

Stebbins Hill

Broad Point

Stebbins

Stebbins-
St. Michael
Road

NORTON
SOUND

Clear
Lakes

LEGEND - TERRAIN PENETRATION

AIRSPACE VICINITY MAP
SCALE 1" = 2000'
TOWNSHIP 23 SOUTH, RANGE 19 WEST
FOLIO K-16 KATEEL RIVER MERIDIAN
USGS QUAD: ST. MICHAEL C-1

R. 19 W.

R. 18 W.

ELEV. = 164.3'


ELEV. = 364.3'

SAIN
T MICHAEL
ISLAND

Saint Michael Mountain

Schedule

- Procure Turbine 1Q2020
- Mob to site 2Q2021 / 3Q2021
- Site improvements 2Q2021 / 3Q2021
- Turbine Foundation 4Q2021 / 1Q2022
- Turbine Delivery / Installation 2Q2022 / 3Q2022
- Start up[/ Commissioning 3Q2022 / 4Q2022



With collaboration, all things are possible!

Forest Button
Alaska Village Electric
Cooperative