The Barrow Atmospheric Baseline Observatory (BRW) is located in the Arctic, on the northernmost point of the United States, approximately 8 km northeast of the village of Utqiagvik (formerly Barrow). NAOA’s long-term BRW facility is undergoing a major upgrade (2019 - 2020) that will significantly increase the site’s scientific capabilities and opportunity for collaboration:

- New state-of-the-art observatory
- Flexible laboratory space
- Garage expansion
- New 30-meter instrument tower
- Campaign science deck
- Dedicated server room for NESDIS and OAR
- Potential fiber connection to facility

**New Barrow Atmospheric Baseline Observatory**

**New Barrow Observatory Building Design**

- New 70’ x 42’ addition to exterior
- Dedicated pump shelter on separate pilings to keep pump noise and vibrations outside of facility
- All LED lighting for LEED facility (potential for LEED-Silver)
- Roof hatches for lidar science
- Special material requirements so construction does not impact science
- Foundation design

**Challenges During Building Procurement & Design**

1. Short Timeline from funding to award
   - Less than 4 months to complete Statement of Work, Design Requirements, procurement package, contract negotiation, and contract award. Also needed to run NEPA concurrent.
   - "It takes a village" - Collaboration across NOAA
   - ESRL/GMD - Observatory Operations team worked hand-in-hand with scientists, contract specialists, engineers, line office partners, and leadership to define requirements
   - OCA/PDMP - Expertise in construction and contracting with proven design-build experience and model to follow
   - AGONAW - Crafted procurement package in record time, pushed contract negotiations forward, worked around the clock to meet the end-of-year federal procurement deadlines and awarded contract one day before deadline
   - OAR/CFO - Secured funds for OAR project and coordinated project with NOAA leadership and Congressional staff

2. Federal Government Shutdown - January 2019
   - Shutdown delayed design -1 month, but design team managed to complete design with no significant impact to construction timeline.

3. Design time vs. frozen tundra/foundation deadlines
   - Foundation pilings must be installed when tundra is frozen. Hard deadline to finish spring installation - 5 May. Foundation completed on 5 May.

4. Barge/Shipping Deadlines
   - Limited shipping options for bulky items. Design timeline includes lead time to order supplies to be shipped up on the once/year barge. Foundation pilings were transported in Spring over a special "ice road" from Prudhoe Bay, AK.

**Why Partner at BRW for Cooperative Research?**

- Energy-efficient, temperature-controlled building on 100 acres of land with:
  - Unobstructed air sampling off the Beaufort Sea
  - 2 highly skilled full-time science technicians
  - Excellent power and communications infrastructure
  - Roof deck with clear southern view and power for instrumentation
  - 30-m instrument tower and dedicated building air inlet stack
  - Campaign science deck capable of holding two 20-ft instrumented sea containers

- 45+ years of operational data acquisition experience and logistics support in the Arctic

- 25+ long-term NOAA atmospheric core measurements available at the site

- Opportunity to test new instrumentation/procedures in fully-supported Arctic environment before remote field deployment

**BRW is a WMO/GAW Global station (1 of only 30) and WMO/GCWR Surface Network CryoNet station**

- Co-location for polar satellites and aircraft/vessel operations
- Co-located with the DOE/ARM North Slope Alaska and USGS Geomagnetic Observatory; NOAA/NESSIS polar satellite downlinks; and adjacent to BED science
- Straightforward logistics: daily passenger and cargo flights, annual barge
- Over 1,200 peer-reviewed publications from BRW data to date.