

# AMF3 Departure from Oliktok Point, AK



## Operations Team:

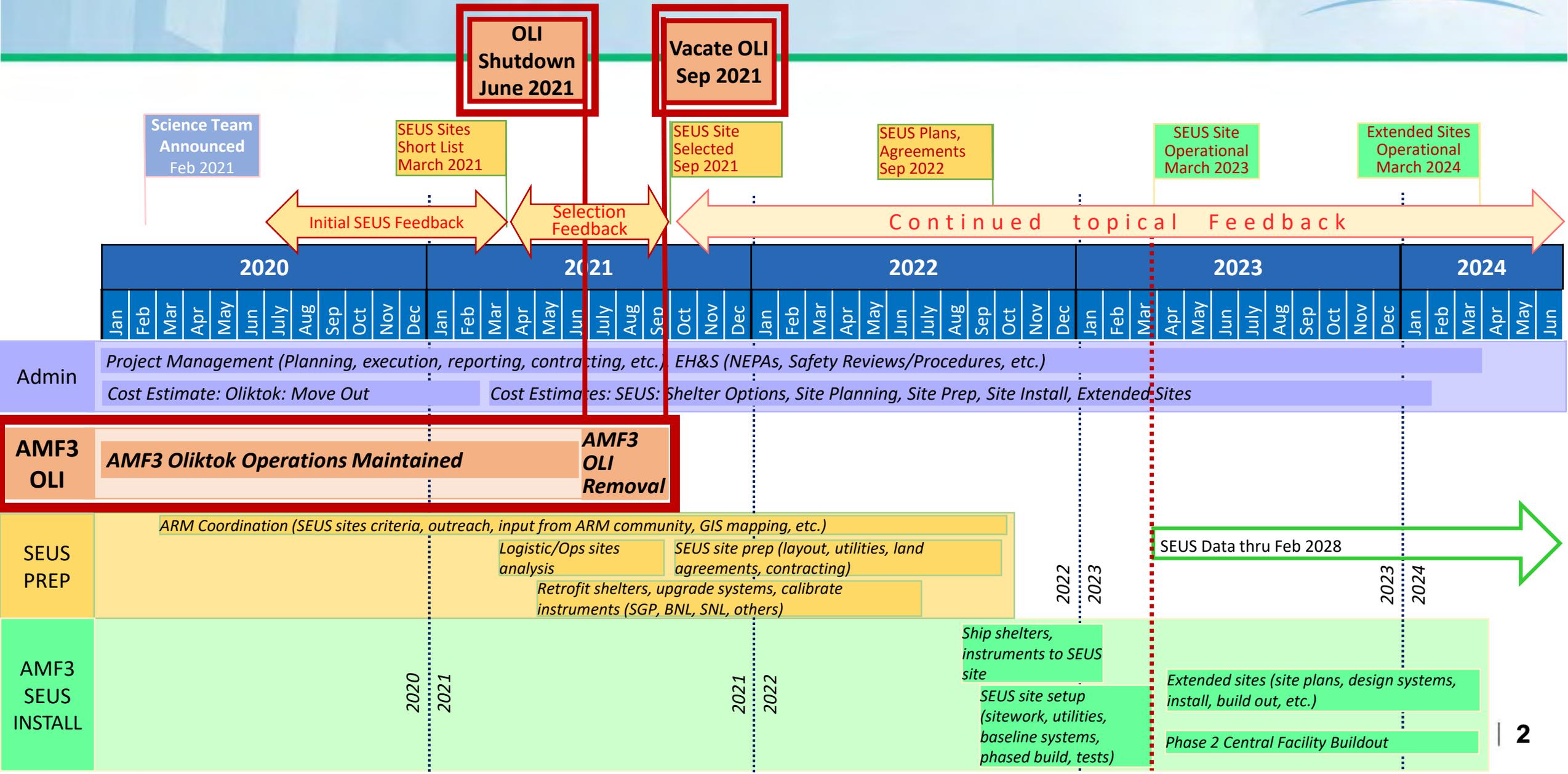
### Sandia Labs ARM Team

### Sandia Labs AMF3 Relocation Planning Team:

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# AMF3 Relocation: OLI → SEUS: Notional Timeline



# AMF3 Relocation: Oliktok instrument redeployments



**\*\*subject to change...**

Inst ID	Instrument Name	SEUS	TBD
AERI	Atmospheric Emitted Radiance Interferometer	X	
AMC	Ameriflux Measurement Component	x	
BBSS	Balloon-Borne Sounding System	x	
CEIL	Ceilometer	x	
TSI	Total Sky Imager	x	
CSPHOT	Cimel Sunphotometer	x	
DL	Doppler Lidar	x	
ECOR	Eddy Correlation Flux Measurement System	x	
GNDRAD	Ground/upwelling Radiometers	x	
IRT	InfraRed Thermometer	x	
KAZR	Ka ARM Zenith Radar	x	
LPM	Laser Precipitation Monitor	x	
MAWS	Automatic Weather Station	x	
MET	Surface Meteorological Instruments	x	
MFR	Multifilter Radiometer	x	
MFRSR	Multifilter Rotating Shadowband Radiometer	x	
MPL	Micropulse Lidar	x	
MWR3C	Microwave Radiometer, 3 Channel	x	
PWD	Present Weather Detector (part of MET)	x	
SKYRAD	Sky/downwelling Radiometers	x	
SEBS	Surface Energy Balance System (part of ECOR)	x	
RL	Raman Lidar: <i>*was shut down for winter</i>		x
SRS	Snow Depth Sensor		x
CMH	Chilled Mirror Hygrometer (part of MET)		x
UDS	Ultrasonic Depth Sensors		x
WB	Weighing Bucket (Geonor)		x

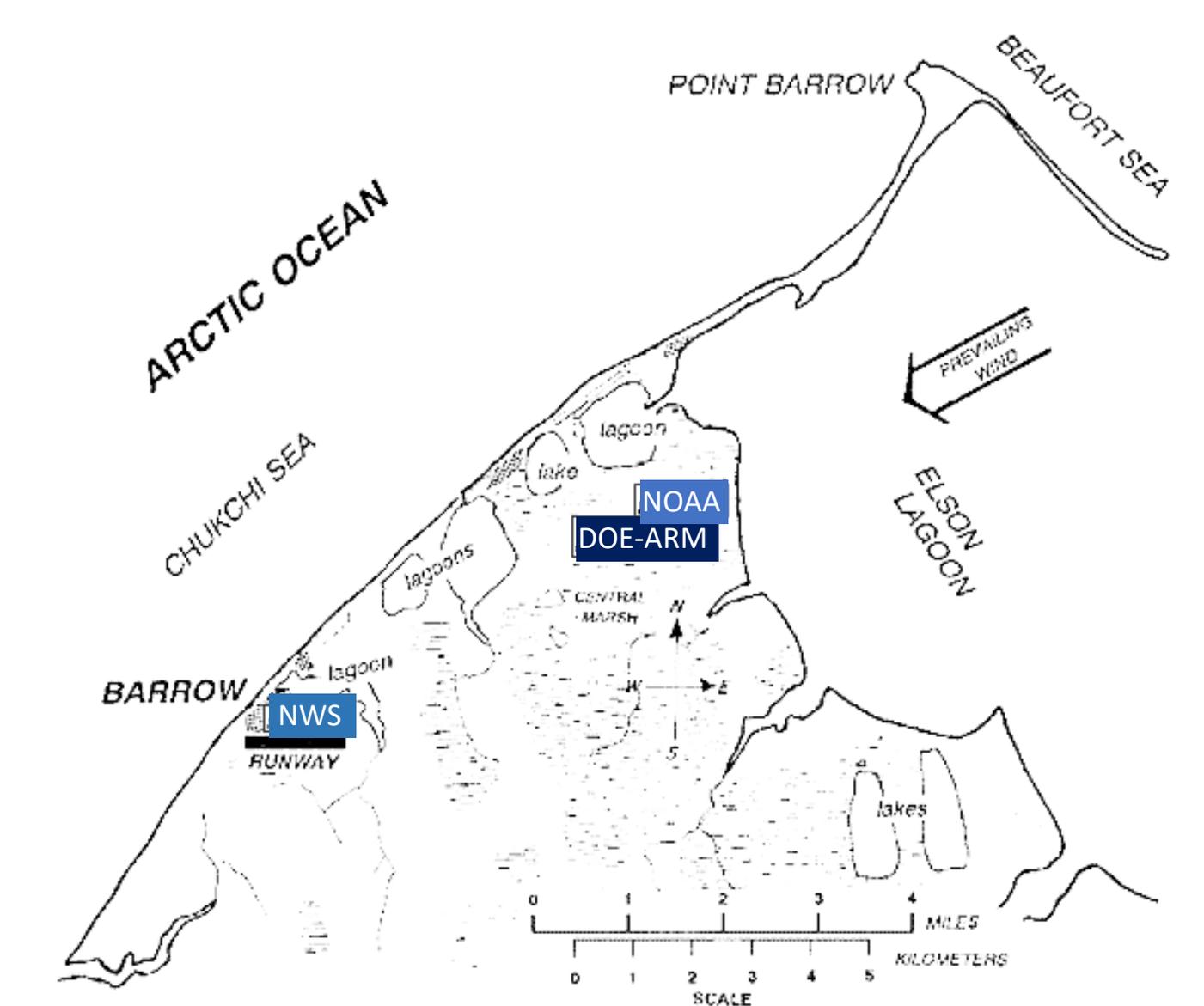
AOS	Aerosol Observing System	SEUS	TBD
AOSMET	Met Measurements with AOS	x(AOS)	
ACSM	Aerosol Chemical Speciation Monitor <i>*is currently at AMF2</i>	x(AOS)	
CAPS	Cavity Attenuated Phase Shift Extinction Monitor <i>*is currently being serviced</i>	x(AOS)	
CO-ANALYZER	Carbon Monoxide Analyzer	x(AOS)	
CPC	Condensation Particle Counter	x(AOS)	
μCPC	Ultra-fine Condensation Particle Counter	x(AOS)	
GHG	Greenhouse Gas Monitor	x(AOS)	
OZONE	Ozone Monitor	x(AOS)	
PSAP	Particle Soot Absorption Photometer	x(AOS)	
NEPH	Nephelometer (ambient)	x(AOS)	
UHSAS	Ultra-High Sensitivity Aerosol Spectrometer <i>*is currently being repaired</i>	x(AOS)	
CCN	Cloud Condensation Nuclei Particle Counter <i>*is currently being serviced</i>	x(AOS)	
HTDMA	Humidified Tandem Differential Mobility Analyzer <i>*removed, will not be redeployed to OLI</i>	x(AOS)	
SMPS	Scanning Mobility Particle Sampler	X(AOS)	
IMPACTOR	AOS Impactor (1-10 micron)	X(AOS)	
WXT520	Weather Sensor		x(AOS)

## Instrument Redeployment options:

1. NSA/Utqiagvik
2. SAIL (Sep 2021 - June 2023)
3. SEUS/AMF3
4. Other ??

**THANKS!**

# NSA Collaboration with NOAA

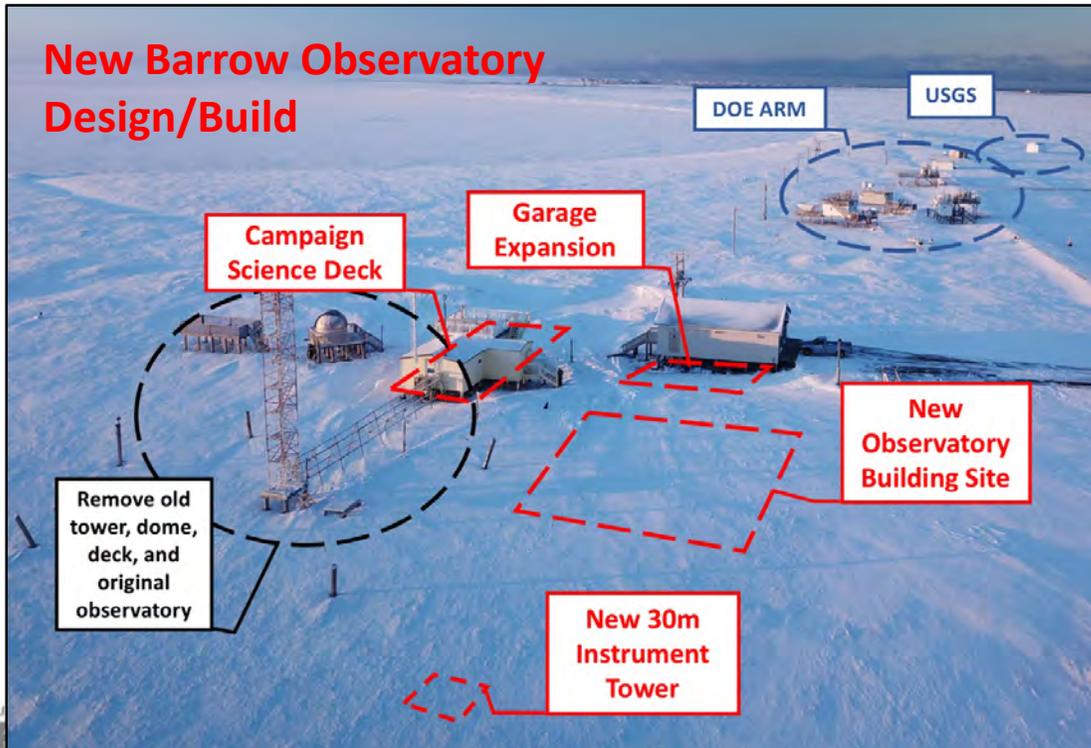
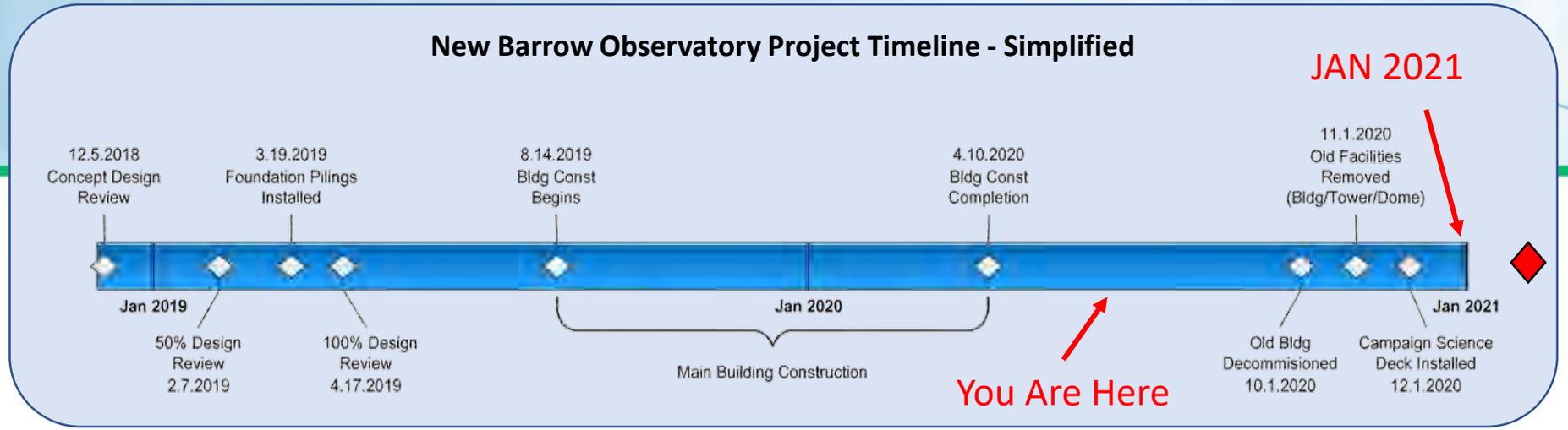


## Impetus:

- Have been coordinating Ops as part of Barrow Federal Operators Group for decades.
- NOAA Barrow Observatory upgrade and expansion started last year
  - Includes instrument deck, ambient air intake stack, upgraded instruments, more space...
- Goal: greater ARM-NOAA coordination to improve Arctic observations and science
  - start with aerosol data gaps, needs, and measurements of interest to NOAA and ARM
  - best use of resources... what measurements are redundant vs what are complementary
  - identify the greatest needs for Arctic atmospheric observations
  - provide feedback for ARM and NOAA to consider

## Ad-hoc process...

- Team of NOAA + ARM aerosol researchers identified
  - ARM APWG + four NOAA researchers:
    - GMD (Boulder) - Pat Sheridan
    - GMD (Boulder) - Betsy Andrews
    - GMD (Boulder) - Hagen Telg
    - PMEL (Seattle) - Patricia Quinn
- Expand to all observations/instruments → HLPWG...



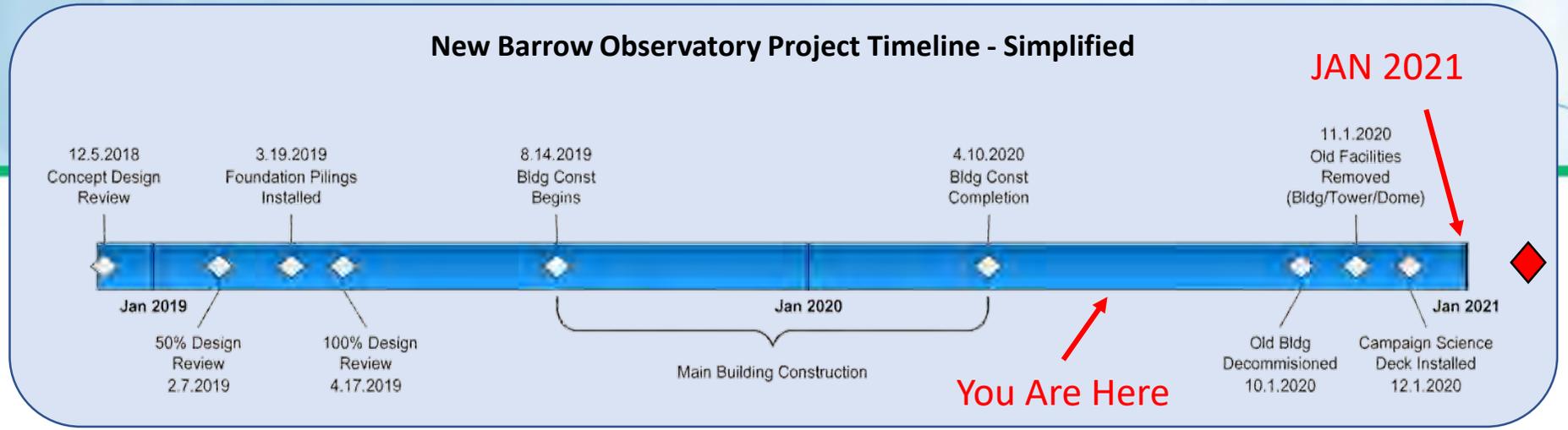
#### NOAA

Since 1976: Number concentration; Scattering/Backscattering  
 Since 1987: Light Absorption  
 Since 1996: Inorganic Composition  
 Other (not continuing/intermittent): CCN, f(RH), size distribution

#### ARM

Since 1998: Aerosol Optical Depth  
 Since 2011 (-2019): Aerosol Extinction Profiles  
 Currently under a Cooperative Agreement for SP2 deployment at NOAA Barrow Observatory (in support of MOSAiC)

Many small campaigns



### NOAA + AMSG + APWG/HLPWG Mini-Workshop

- Review of existing measurements and long-term data record
- Identification and prioritization of measurement gaps
- Protocols for managements of instrumentation, data processing, and archiving
- Community survey in front of workshop
- Targeting early Fall

**THANKS!**