

ADEC's Community-Based Air Sensor Network

2nd Quarterly Call
January 16, 2024
10:00 AM AKST

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Housekeeping Items

- Mute – Please mute yourself for presentations.
- Please use chat during presentation as you have questions/comments.
 - 20-30 minutes of planned discussion time at end
- **Mark your calendar for next call! March 5, 2024 at 10 am AK time**



Agenda

Welcome!

Sensor network overview and progress

Data findings

Next steps

Questions and discussion





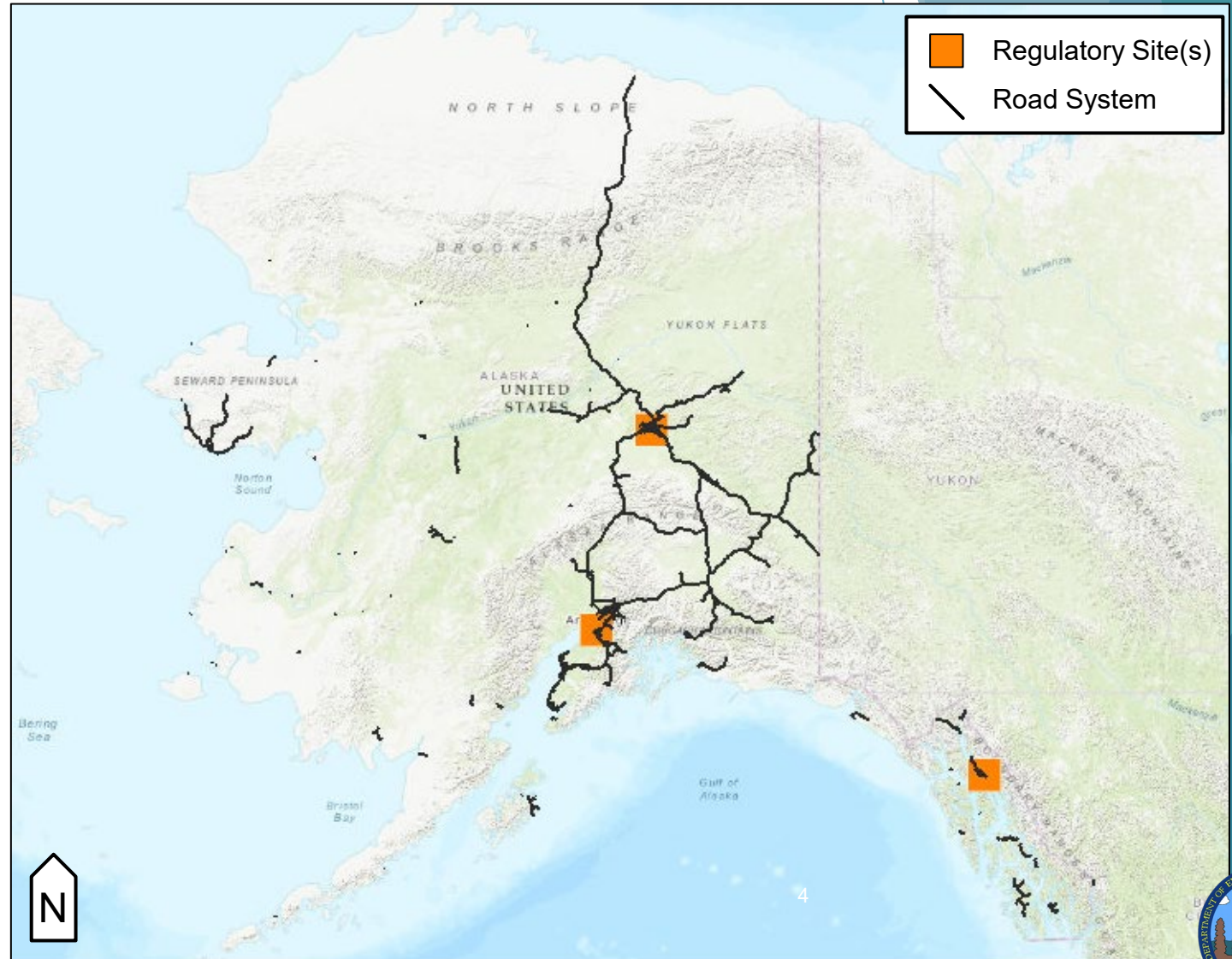
Focus of this call

- ▶ Second quarterly call
 - ▶ Next is March 5th at 10 am
 - ▶ 3-year project
- ▶ Share DEC updates
- ▶ Get input
- ▶ Workgroup style – discussion is encouraged!

Share Alaskan-based expertise

DEC's Regulatory Network

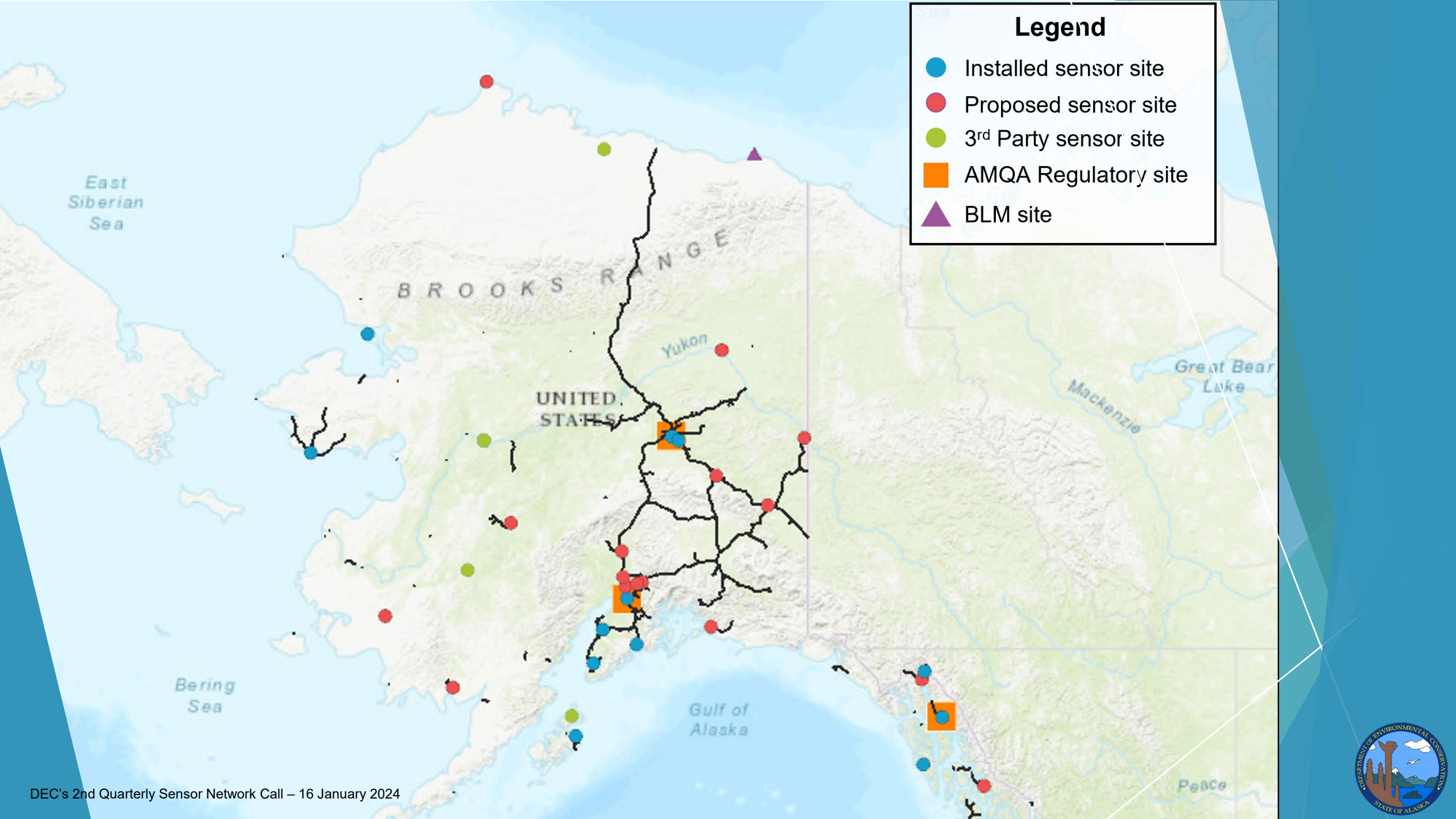
- ▶ Regulatory stations in 3 Metropolitan Statistical Areas (MSAs)
 - ▶ Anchorage / Mat-Su (4 sites)
 - ▶ Fairbanks (3 sites)
 - ▶ Juneau (1 site)
- ▶ Monitor criteria pollutants:
 - ▶ Particulate matter (PM_{2.5} and PM₁₀)
 - ▶ Gases:
 - ▶ Carbon monoxide (CO)
 - ▶ Nitric oxide (NO)
 - ▶ Ozone (O₃)
 - ▶ Sulfur dioxide (SO₂)



We are growing!

- ▶ Map as of 1/1/2024
- ▶ Continued expansion as we...
 - ▶ Deploy more sensors
 - ▶ Collaborate with communities doing their own studies and display their data
 - ▶ Add PurpleAirs from across the state and collaborate with ANTHC





Legend

- Installed sensor site
- Proposed sensor site
- 3rd Party sensor site
- AMQA Regulatory site
- ▲ BLM site





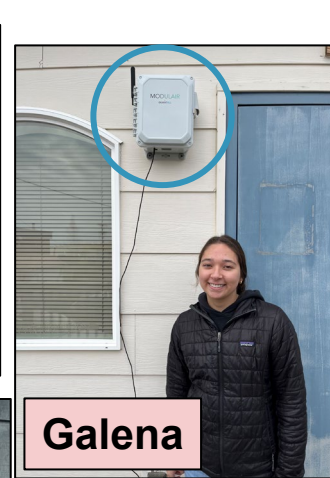
Skagway



Sitka



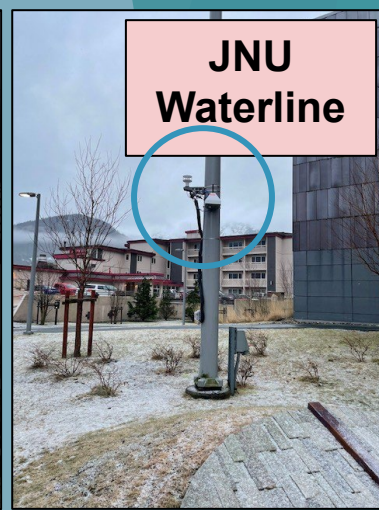
Kodiak



Galena



JNU Highlands



JNU Waterline



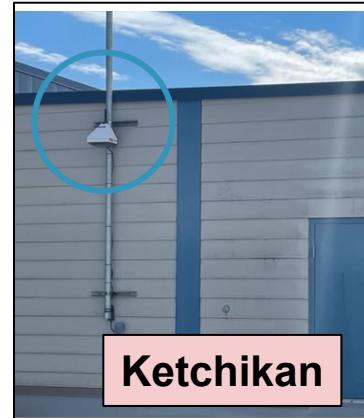
Kotzebue



Soldotna



Bethel



Ketchikan



Homer



Kotzebue



Seward



Napaskiak



Goldstream

New deployments!



October 26, 2023



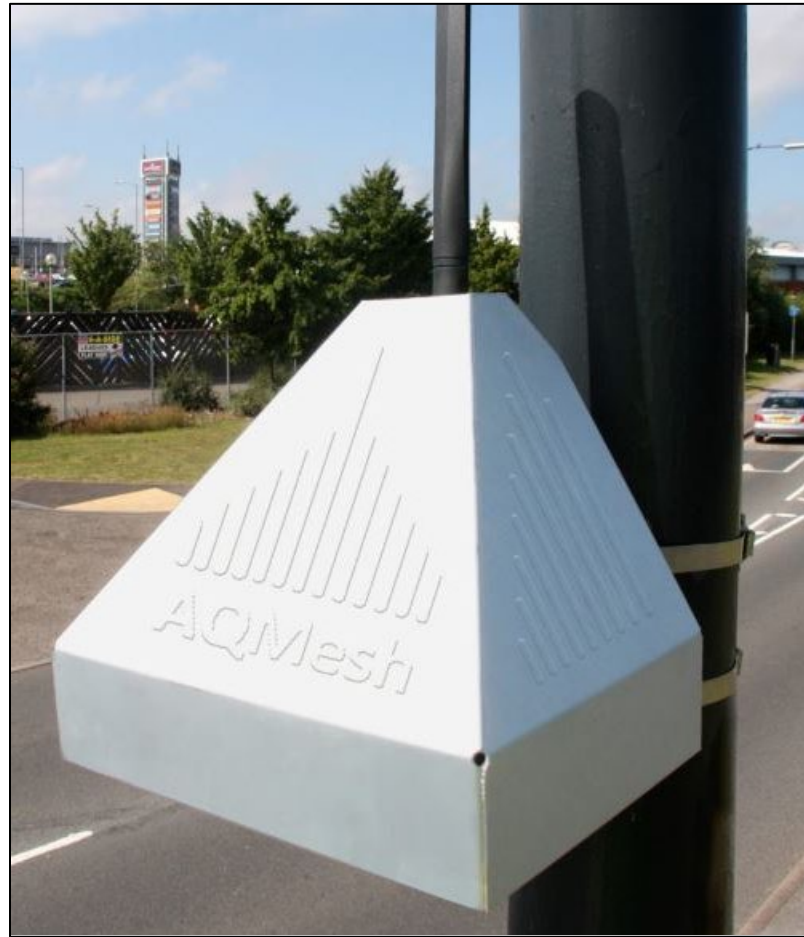
November 3, 2023



Pod Types



- Particulate matter (PM2.5 & PM10)
- Carbon monoxide (CO)
- Ozone (O3)
- Nitric oxide (NO)
- Nitrogen dioxide (NO2)
- Temperature
- Relative humidity



- Particulate matter (PM2.5 & PM10)
- Carbon monoxide (CO)
- Sulfur dioxide (SO2)
- Nitric oxide (NO)
- Nitrogen dioxide (NO2)
- Temperature
- Relative humidity
- Barometric pressure
- Optional anemometer (wind speed and direction)



- Particulate matter (PM2.5)
- Barometric pressure
- Temperature
- Relative humidity



Sensor Collocations – NCore

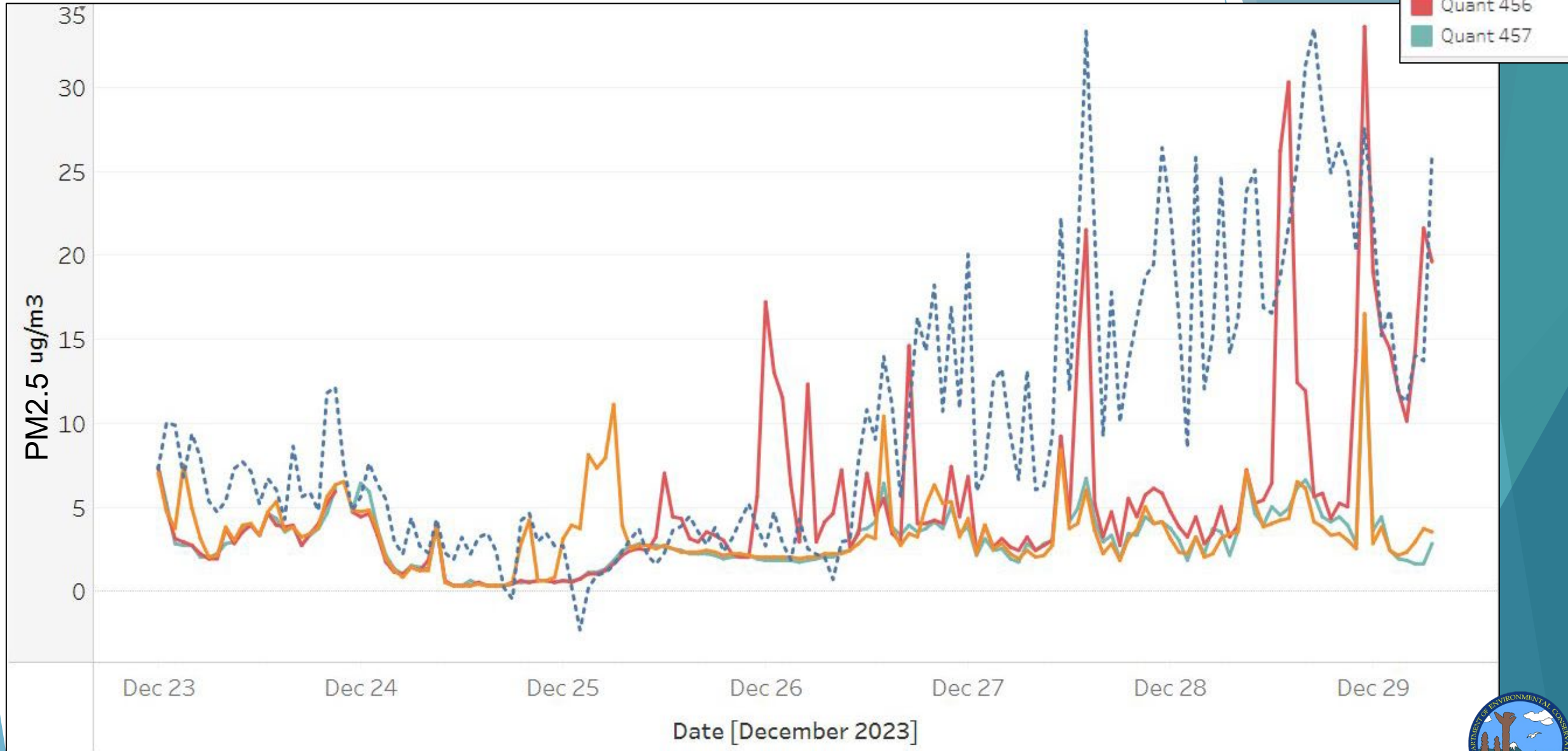
Regulatory site in Fairbanks, AK

AQMesh

Quant



Sensor Collocations – December



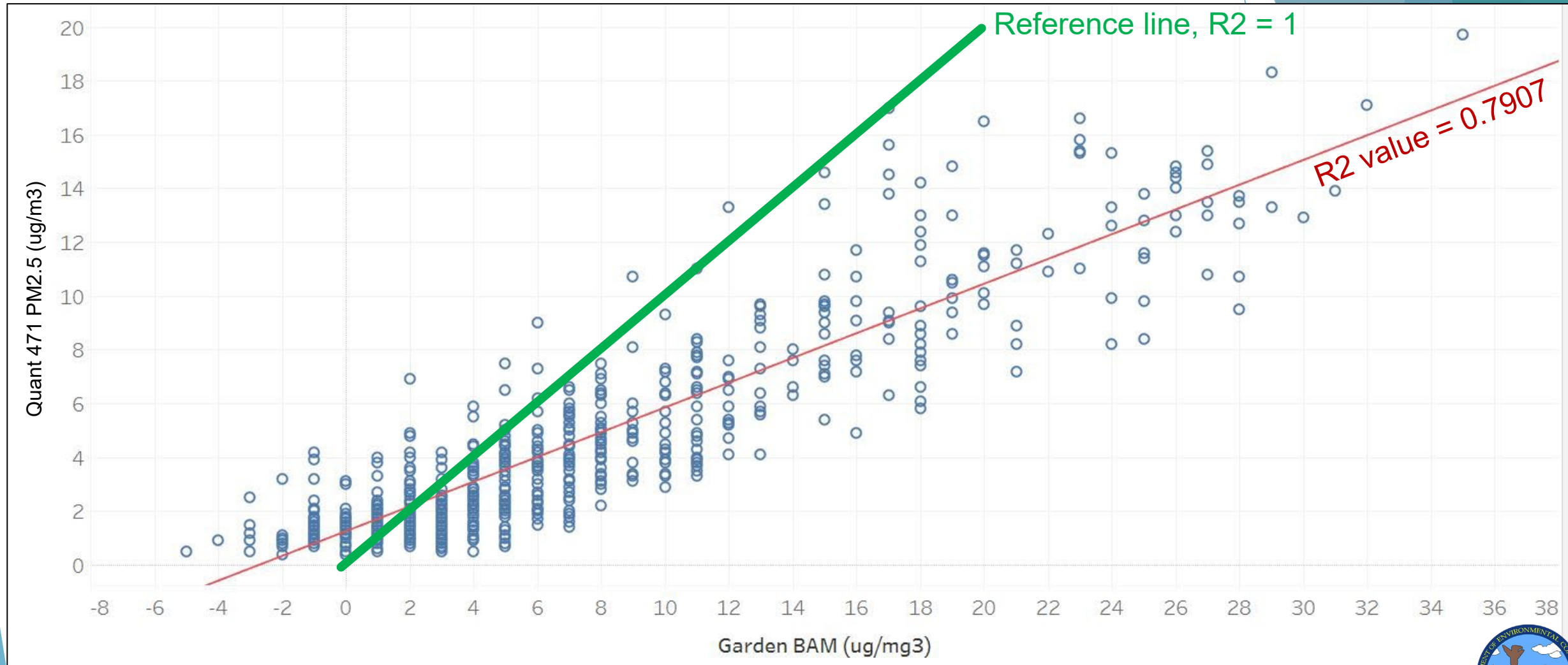
Legend

- NCore BAM
- Quant 455
- Quant 456
- Quant 457



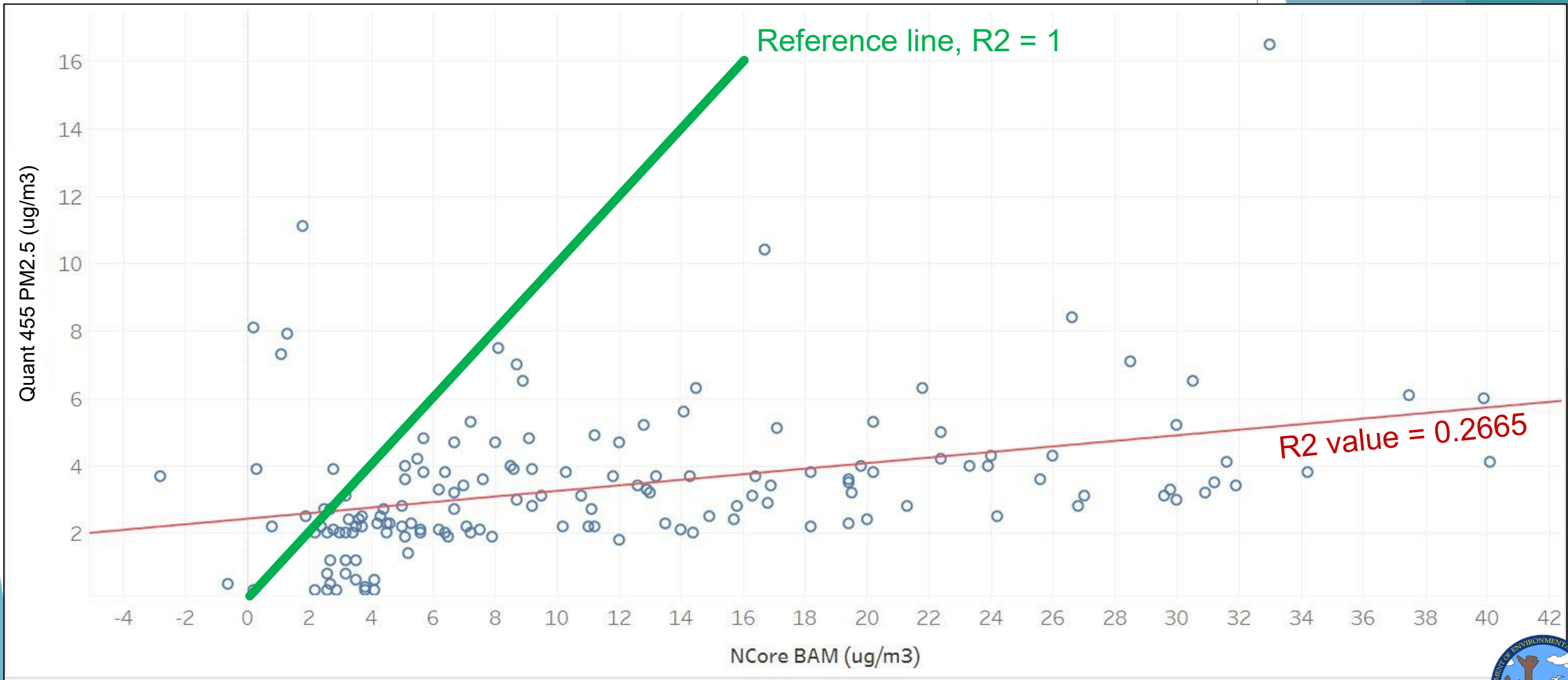
Sensor Collocations – R2 value, PM2.5

October Network Collocation Study – Anc Reg vs Quant

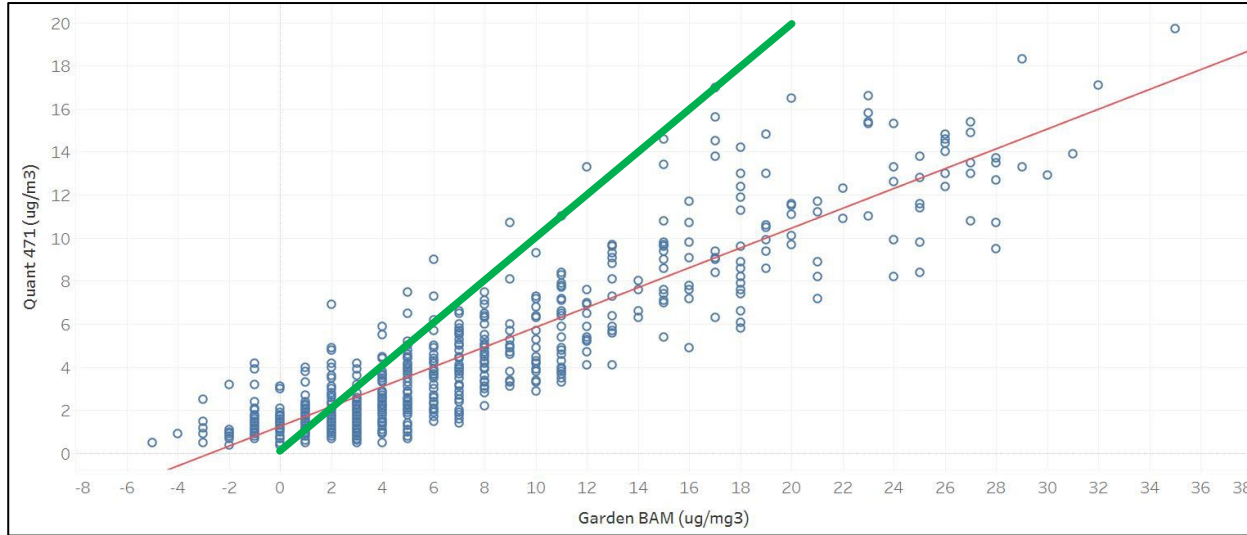


Sensor Collocations – R2 value, PM2.5

December Pre-Deployment Collocation – Fbx Reg vs Quant

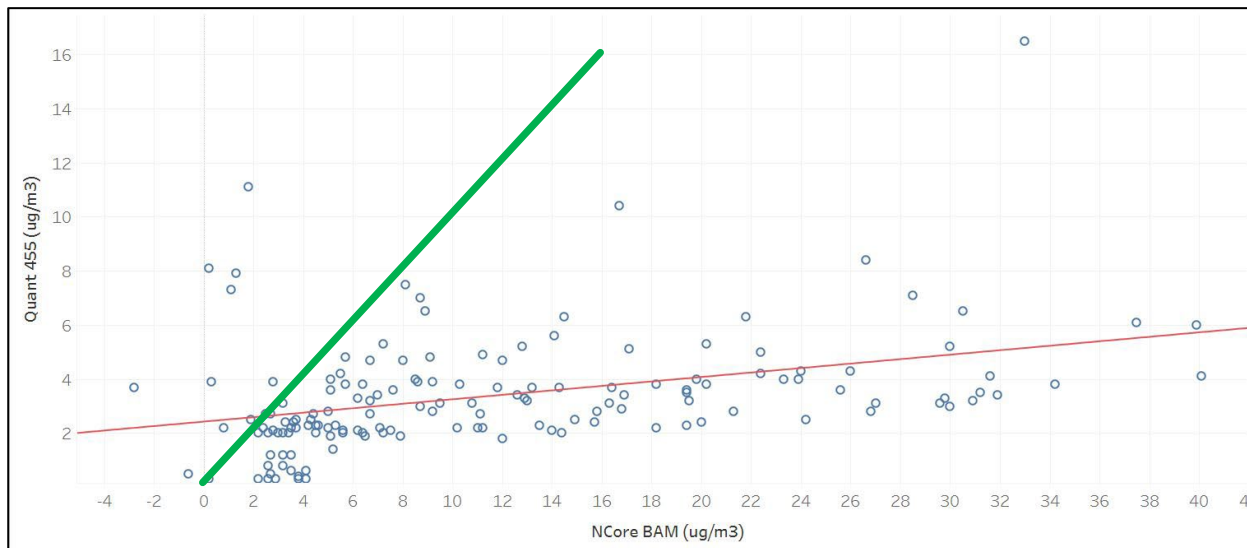


October – Network Collocation



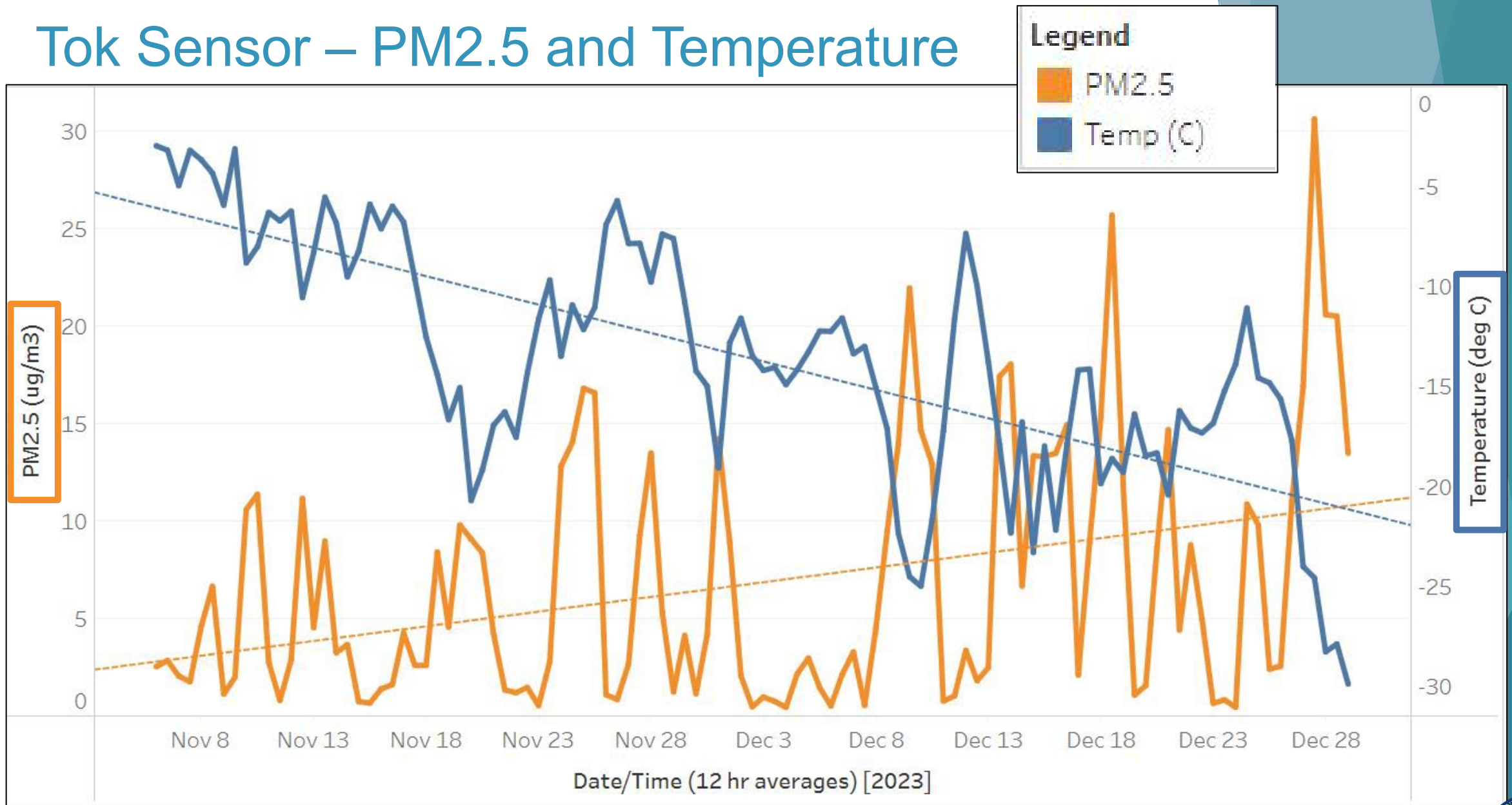
R2 value = 0.7907

December – Sensor Pre-Deployment



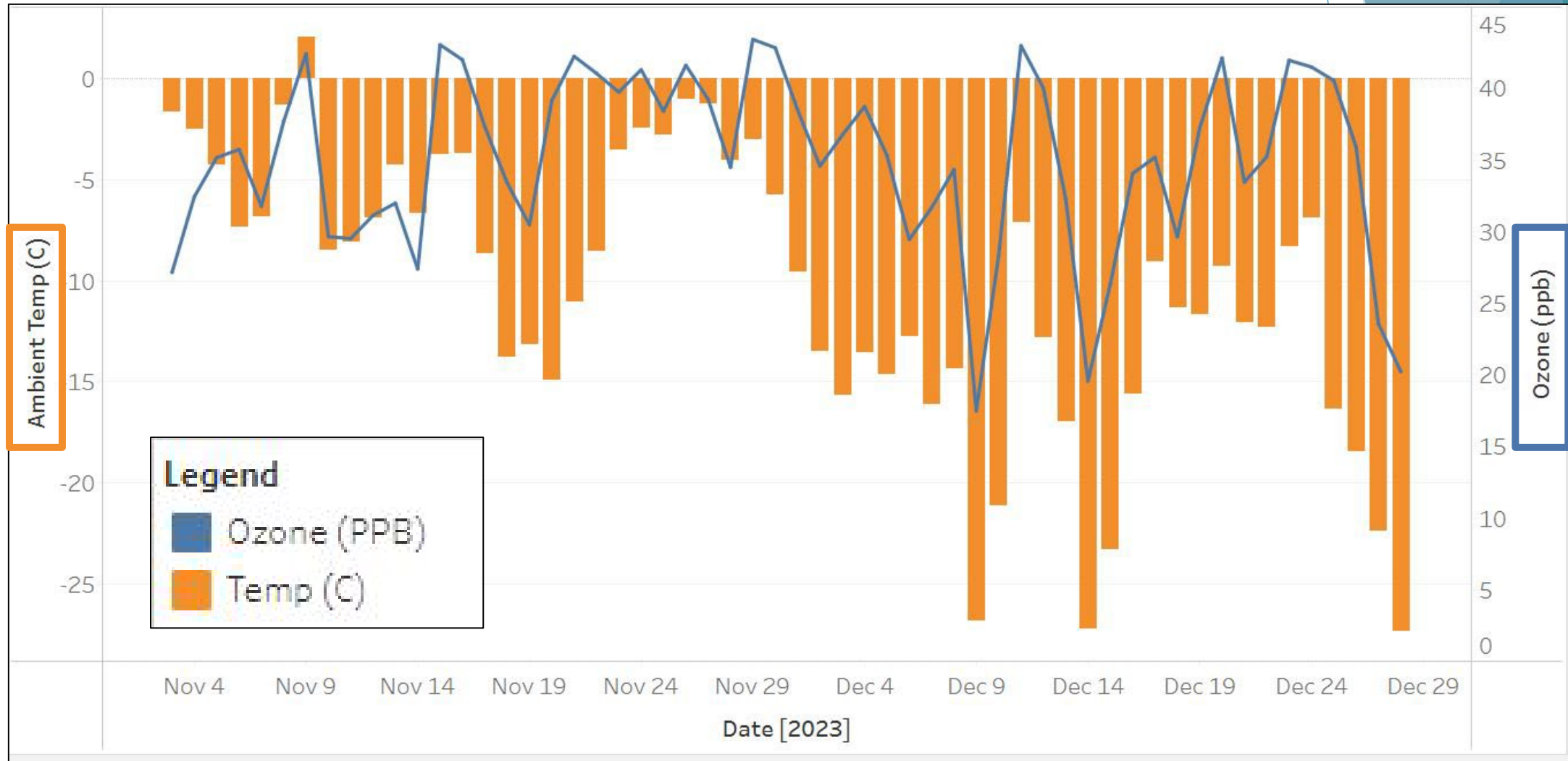
R2 value = 0.2665

Tok Sensor – PM2.5 and Temperature



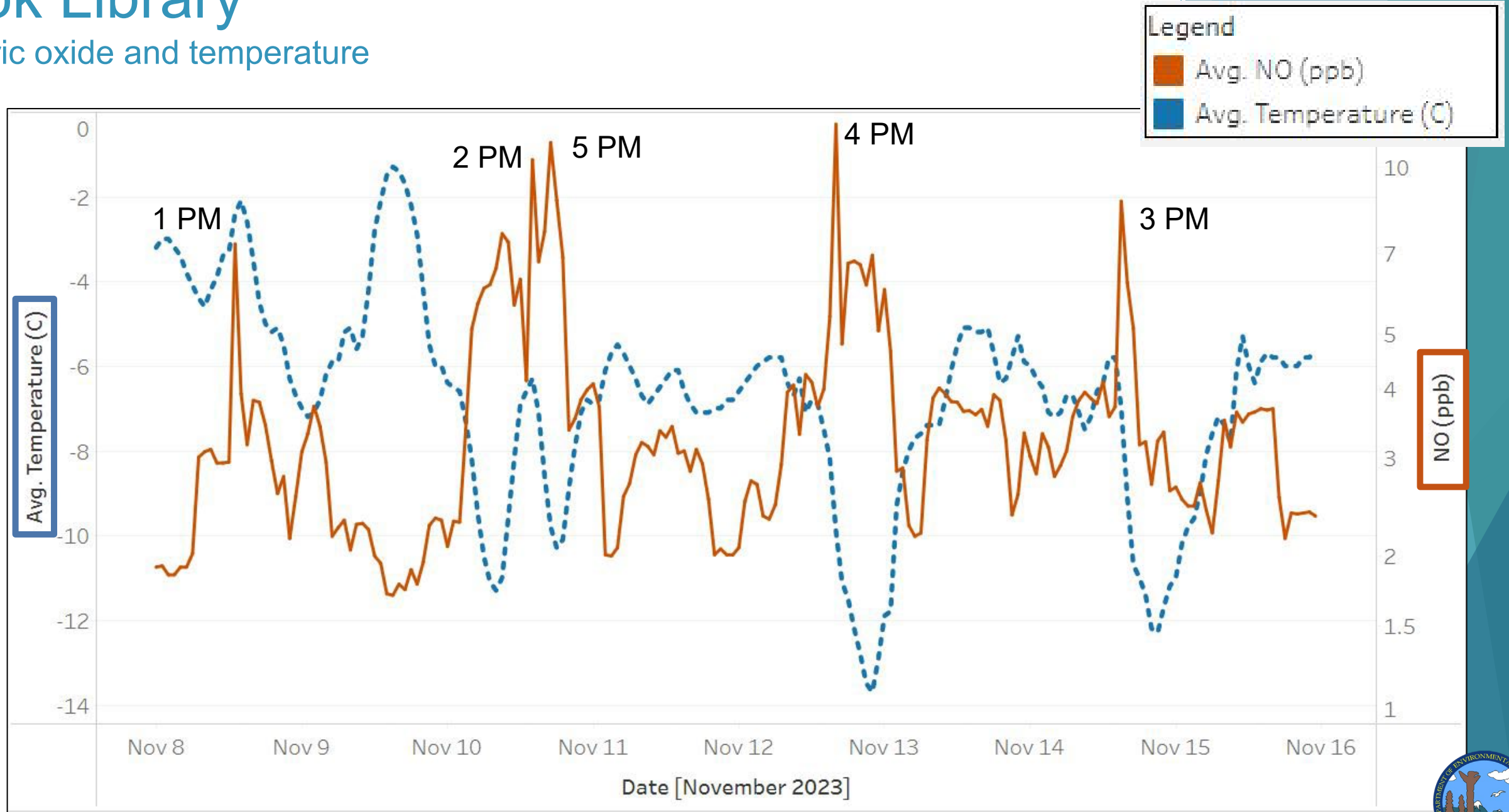
Delta Junction Sensor

Temperature (deg C, left axis) and Ozone (ppb, right axis) over time
November through December



Tok Library

Nitric oxide and temperature



Southeast Alaska Campaign

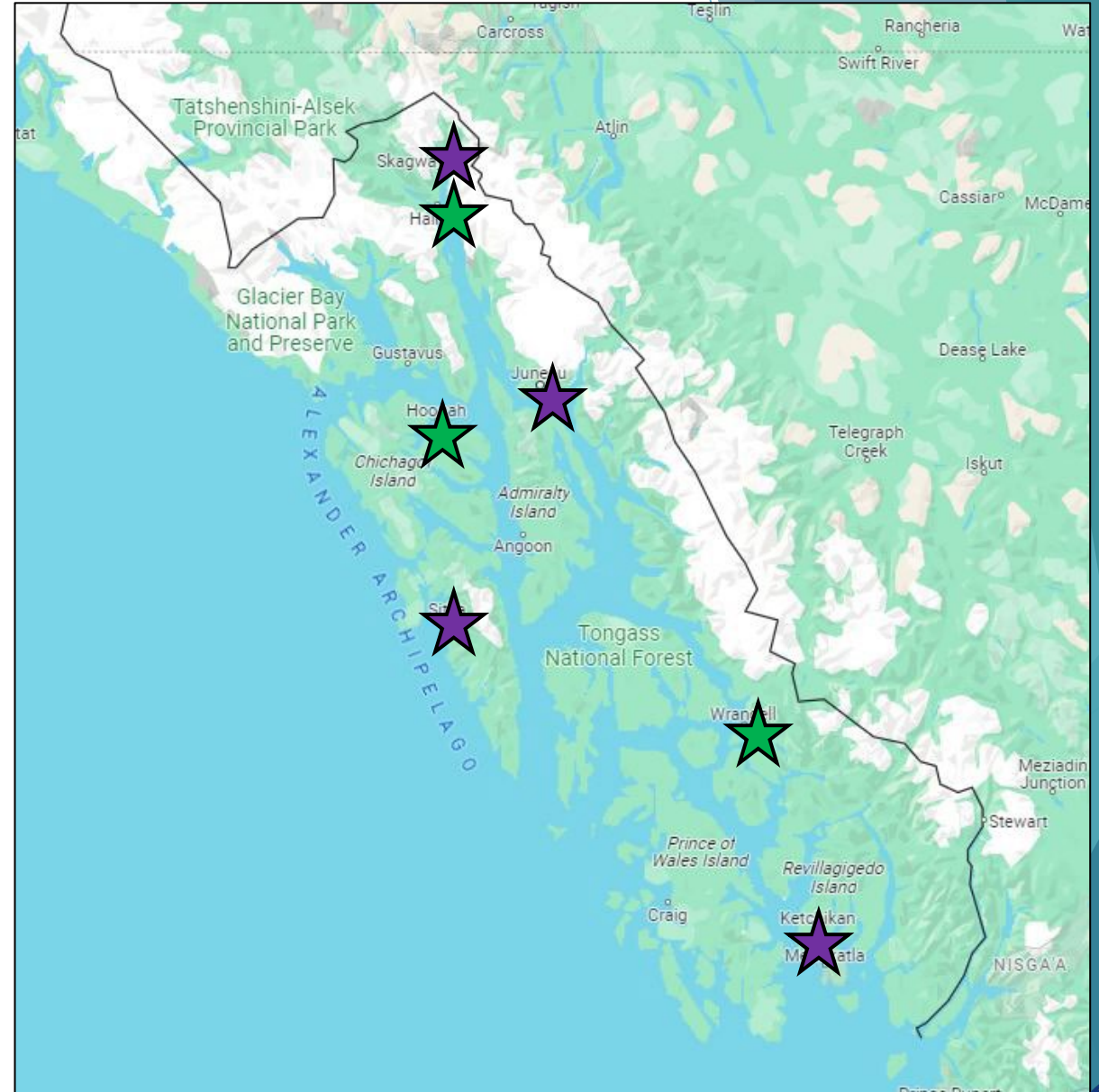
January 2024

Deploying **new** sensors in:

- Haines
- Hoonah
- Wrangell

Replacing sensors in:

- Juneau
- Sitka
- Ketchikan
- Skagway





Rowing in the same direction

- ▶ **Looking for Community Champions**
 - ▶ Finding a location and deployment
 - ▶ Receive training on sensor
 - ▶ Join the network! On the map, network calls, semiannual data reports
 - ▶ Data available at request
- ▶ **We want to host your air quality data on our website!**
- ▶ **DEC sensor network collaboration**
 - ▶ Contact us for direct collaboration
 - ▶ Future calls and knowledge share
 - ▶ Hiring staff to help with tribal/rural air quality!

Questions

- ▶ Next quarterly call date: March 5th @ 10-11am. Link in chat will take you to registration and will be emailed to our contact list.
- ▶ Visit our Air Quality website: <https://dec.alaska.gov/air/air-monitoring/responsibilities/database-management/alaska-air-quality-real-time-data/> (or Google 'Alaska air quality' and look for DEC AQI link)
- ▶ Contact info is in chat and in QR code

Resources

- ▶ Not sure what sensor to buy?
 - ▶ EPA Air Sensor Toolbox: epa.gov/air-sensor-toolbox
 - ▶ South Coast AQMD's AQ-SPEC program and evaluations: aqmd.gov/aq-spec
 - ▶ Contact us!
- ▶ ANTHC's PurpleAir program – contact Andrew Willman
- ▶ <https://events.gcc.teams.microsoft.com/event/48fa7193-4e4c-4bfd-b005-fd6226d3399e@20030bf6-7ad9-42f7-9273-59ea83fcfa38>

Contact us

