

# FNSB Wood Stove Changeout Program & the PM<sub>2.5</sub> Nonattainment Area

Presenters:

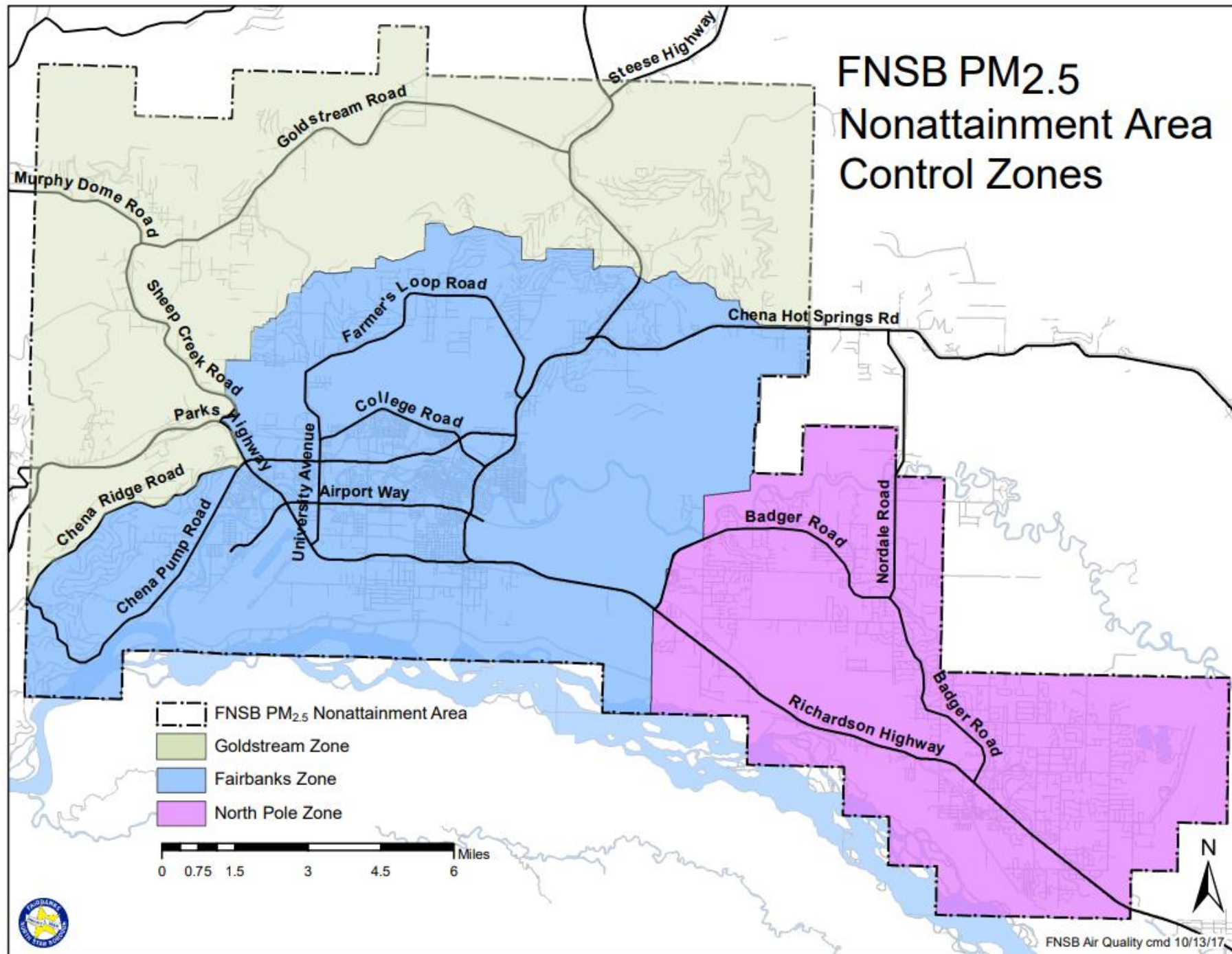
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Cory McDonald, ADEC Environmental Specialist

# Fairbanks PM Nonattainment

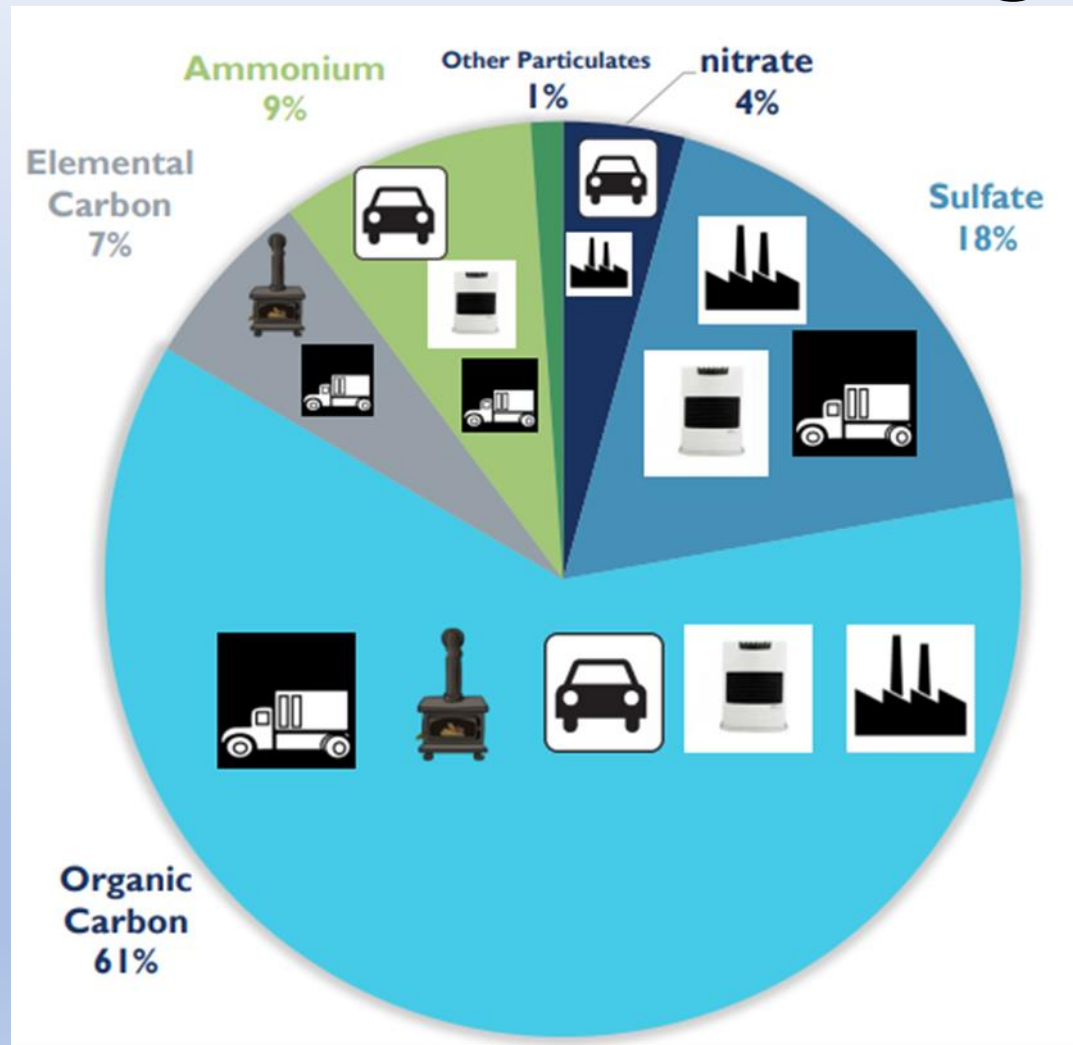
A portion of the Fairbanks North Star Borough, including the City of Fairbanks and the City of North Pole, was designated as a PM<sub>2.5</sub> Nonattainment Area in December 2009. These areas exceed the health based 24-hour PM<sub>2.5</sub> National Ambient Air Quality Standard (NAAQS) of 35 micrograms/cubic meter.

Analysis shows that local emissions from wood stoves, burning distillate oil, industrial sources, and mobile emissions contribute to particulate pollution. For planning purposes, PM<sub>2.5</sub> is primarily a concern during the winter months (October through March) when extremely strong temperature inversions are frequent and human-caused air pollution impacts increase. Summertime wildland fire smoke is also a health concern but is considered natural and uncontrollable.

# FNSB PM<sub>2.5</sub> Nonattainment Area Control Zones



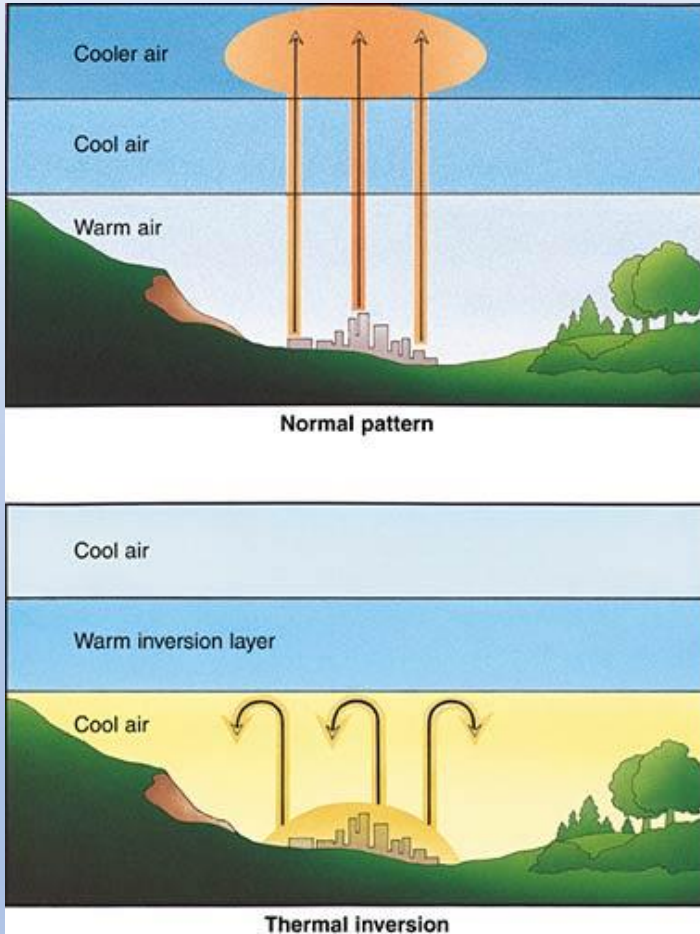
# Where is the PM2.5 coming from?



From 7/20/17 presentation to FNSB Assembly



# Environmental factors



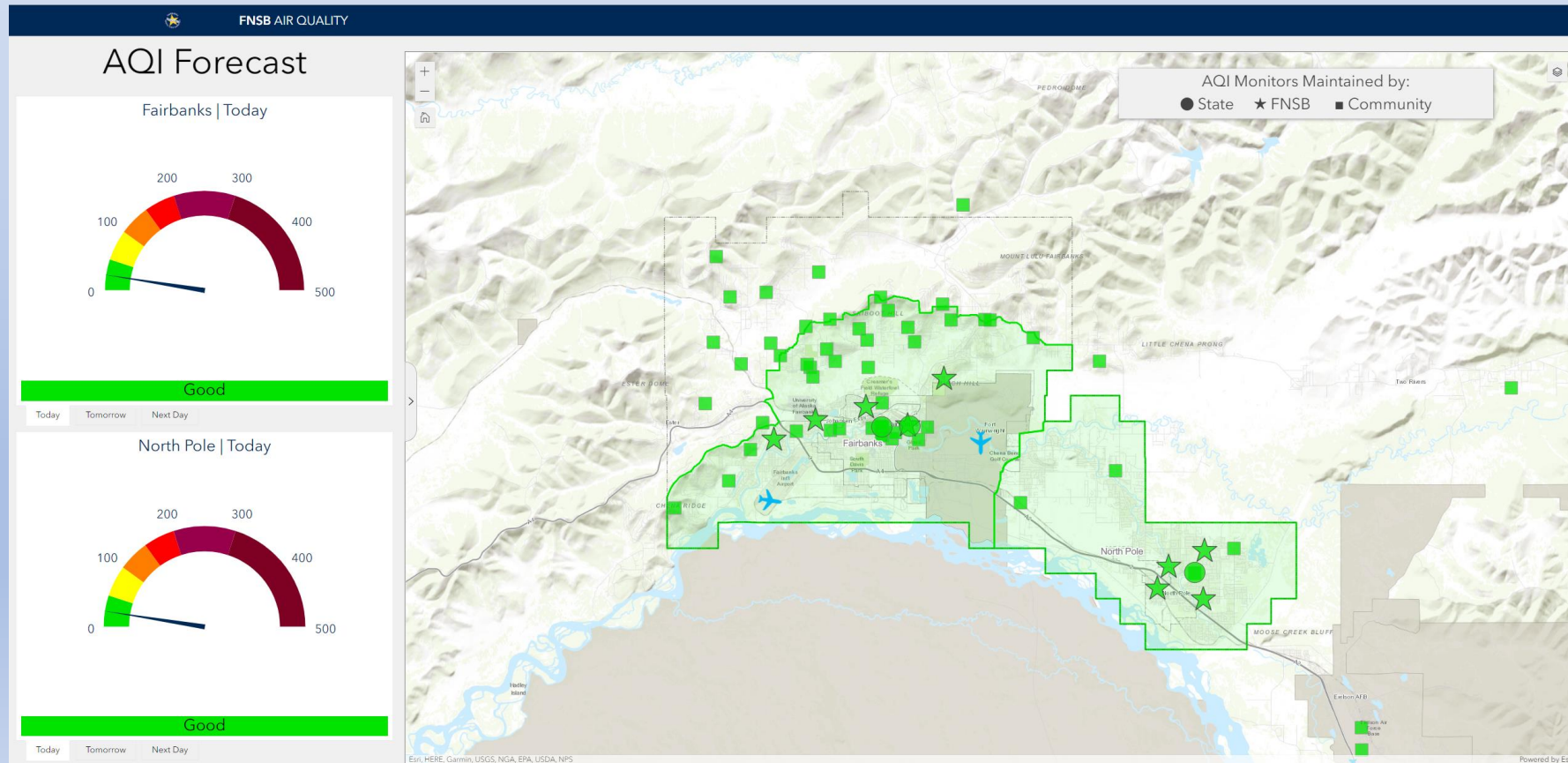
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<https://blogs.agu.org/thefield/files/2018/11/Fairbanks-air-winter-.jpg>

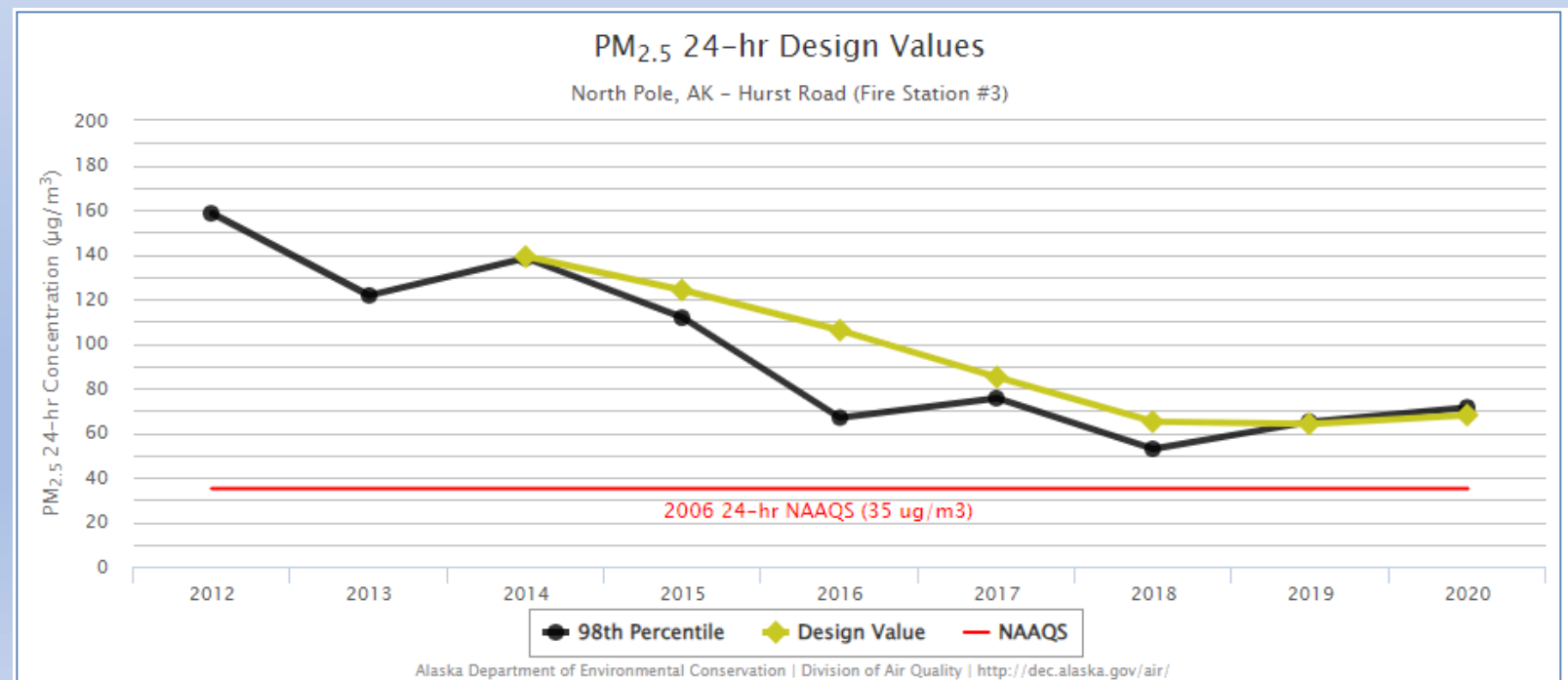
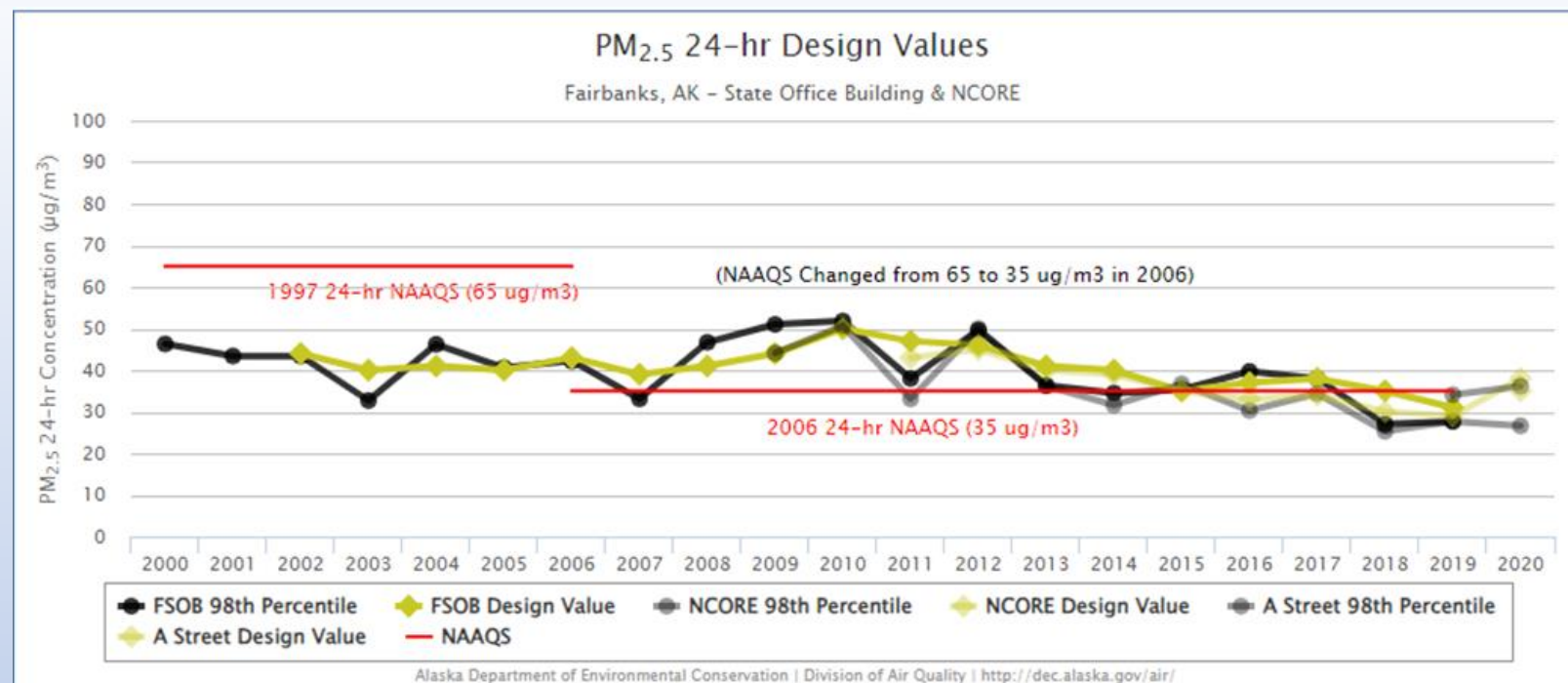
# Regulatory / Community Monitoring Program

<https://experience.arcgis.com/experience/254e83d6286a4eafabffce9311801dbd/>

- Utilizes real time monitoring data from both borough owned and publicly owned Purple air monitors.



# Progress



# Alaska Department of Environmental Conservation (ADEC) Solid Fuel-fired Heating Device Emission Standards

<https://dec.alaska.gov/air/burnwise/standards/>



HEATING DEVICE TYPE	PARTICULATE MATTER EMISSION STANDARDS FOR NEW DEVICES	INSTALLATION REQUIREMENTS	REMOVAL REQUIREMENT	EFFECTIVE DATE
Wood-Fired Hydronic Heaters < 350,000 Btu/hr	New hydronic heaters may not be sold or installed in the Nonattainment Area.	Prohibited	Existing devices removed and rendered inoperable by 12/31/2024 or upon conveyance as part of a real estate transaction, whichever is earlier and rendered inoperable	1/8/2020
Pellet Fueled Hydronic Heaters < 350,000 Btu/hr	EPA certified AND 0.10 lbs. per million Btu of heat output for each individual burn rate. (DEC listed)	Professionally Installed	Non-EPA certified devices must be removed or replaced by 12/31/2024 or upon conveyance as part of a real estate transaction, whichever is earlier and rendered inoperable.	1/8/2020
		May not be installed within 330 feet from closest property line or 660 feet from a school, clinic, hospital, or senior housing unit.		
Woodstoves and Pellet Stoves < 350,000 Btu/hr	EPA certified AND 2.0 grams per hour (DEC listed)	Professionally Installed	Non-EPA certified devices must be removed or replaced by 12/31/2024 or upon conveyance as part of a real estate transaction, whichever is earlier and rendered inoperable.	1/8/2020
	AND not exceed 6.0 grams per hour any valid 1-hr filter pull OR TEOM data indicates that no rolling 60-minute period exceeds 4.0 grams per hour. (DEC listed)			9/1/2020
				Effective date of an EPA published finding.
Coal-Fired Heating Devices	New coal fired heaters may not be sold or installed in the Nonattainment Area.	Prohibited	Not applicable	1/8/2020
Wood-Fired Heating Devices > 350,000 Btu/hr	0.10 lbs. per million Btu of heat output for each individual burn rate	Professionally Installed	Not applicable	1/8/2020

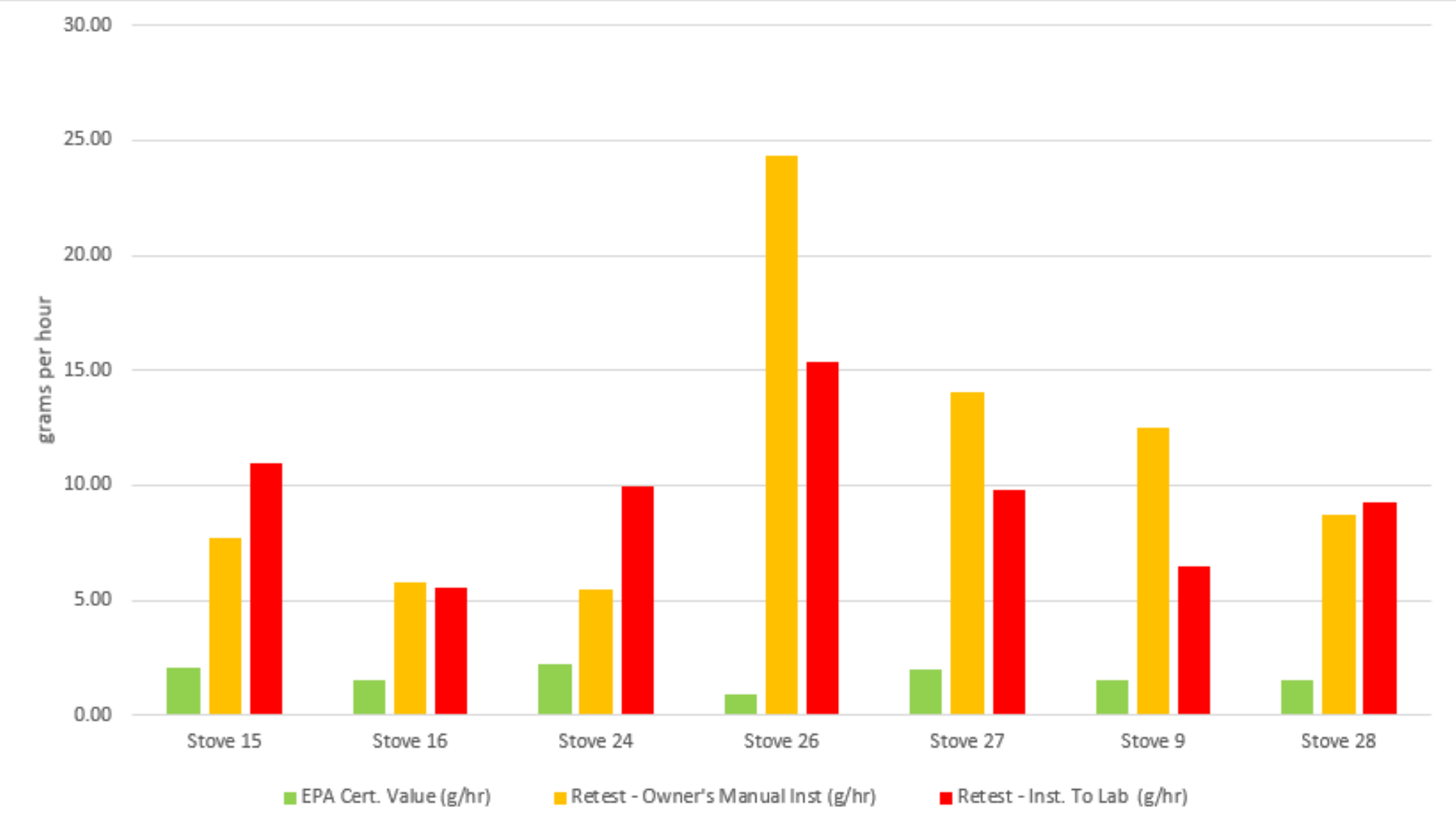
# ADEC Approved Device Lists Then

- In 2015 ADEC began limiting stoves allowed to be installed within the Fairbanks nonattainment area to only those which were EPA certified below 2.5 grams per hour
- In 2017 ADEC adjusted the emission limit of those allowed to be installed to those that were EPA certified with 2.0 grams per hour or lower
- Finally in 2020 any device sold in the nonattainment area had to be ADEC listed, and EPA certified with an emission rate of less than 2.0 grams per hour

# ADEC Approved Device Lists Now

- Small Subset of EPA certified devices
  - 15 Wood Stoves
  - 30 Pellet Stoves
  - Each certification report individually reviewed to meet EPA & ADEC standards
  - Original review found systematic errors in testing and certification process
  - ADEC continues to work closely with the EPA, other regulatory agencies, manufacturers, and local vendors
- Only applies to new device sales and installs
  - ADEC will review unlisted devices upon request

# Weighted Average Non-CAT Stoves Tested with ASTM 3053



# ADEC Real Estate Requirement

<https://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-real-estate>

- Devices not EPA certified or with a manufacturer date older than 25 years need to be replaced or removed before closing a sale, lease or transfer
  - Exceptions or temporary waivers may be granted on a case-by-case basis
- December 31, 2024, All non-EPA certified devices will need to be replaced



# ADEC Burn Curtailments & Waivers

<https://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-curtail-alert/>

- Curtailments are called when Pm2.5 concentrations reach 20 micrograms per cubic meter or above.
- Waivers are available for those with extenuating circumstances
  - No other adequate source of heat
  - Economic hardship
  - Not burning would result in property damage

# ADEC Dry Wood

- The quality of wood used in a woodstove can have significant impacts on that device's emissions.
- Wet wood
  - Generates more pollution
  - Emits less heat
- Dry wood
  - Better for the environment
  - Better for your wallet
- ADEC regulations require that all wood sold or burned in the area is below 20% moisture content.

# FNSB Change-Out Programs

<https://www.fnsb.gov/386/Change-Out-Programs>

- Options Available Changing from a Wood Burning Device
  - Emergency power backup
  - Natural Gas/Propane
  - Home Heating Oil
  - Electricity
  - District heat
  - Cleaner burning wood fire appliances
    - Limitations and must be ADEC approved
- Additional Program Going from Oil to Gas
- All Change-Out programs using federal funding require deed restrictions barring future solid fuel burning devices in order to achieve permanent calculable emissions reductions

# FNSB AQ, ADEC & the EPA

- FNSB Air Quality works with both ADEC and EPA in an advisory capacity and to ensure that the local administration is informed of any current or upcoming changes
- Working to find the cleanest appliances so the FNSB can continue to burn and have clean air to breathe.

QUESTIONS

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