



# Fairbanks North Star Borough Air Quality: Serious Implementation Plan (SIP)

Discussion with:  
Greater Fairbanks Chamber of Commerce

Jason Brune, DEC Commissioner

May 14, 2019



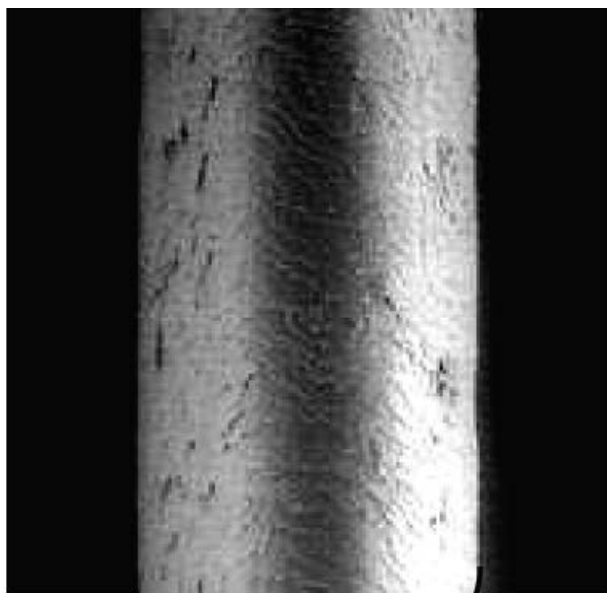
## Overview

- What is PM<sub>2.5</sub> and Why Are We Here?
- Current Air Quality Trends
- When can the area attain?
- Key Goals and Elements of SIP
- Summary of Control Measures
- Public Review Timeline
- How to Comment



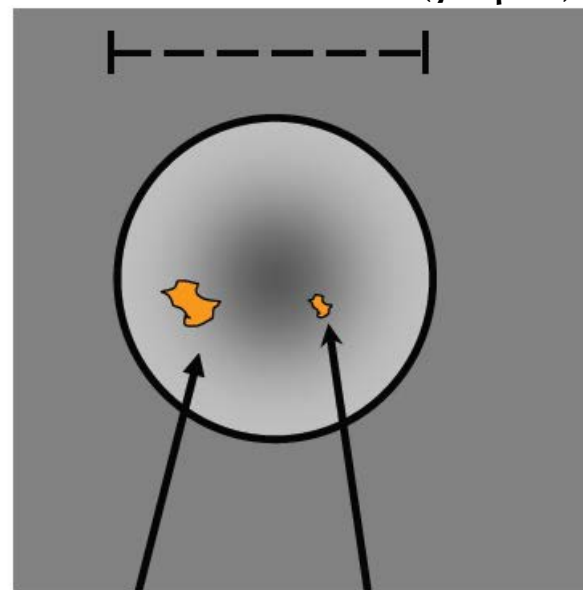
## Particulate Matter: What is it?

**A complex mixture of extremely small particles and liquid droplets.**



Human Hair (70  $\mu\text{m}$  diameter)

Hair cross section (70  $\mu\text{m}$ )



PM<sub>10</sub>  
(10 $\mu\text{m}$ )

PM<sub>2.5</sub>  
(2.5  $\mu\text{m}$ )

Source: M. Lipsett, California Office of Environmental Health Hazard Assessment



Wood-Burning Stoves



Power Plants



Heavy Duty Diesel Engines



Natural Sources



**Fine Particles Can Be  
Emitted Directly or Formed  
in the Air from Gases**

Cars and Trucks



Non-Road Vehicles



Forest Fires



Industrial Sources





# Public Health Risks Are Significant

## **Particles are linked to:**

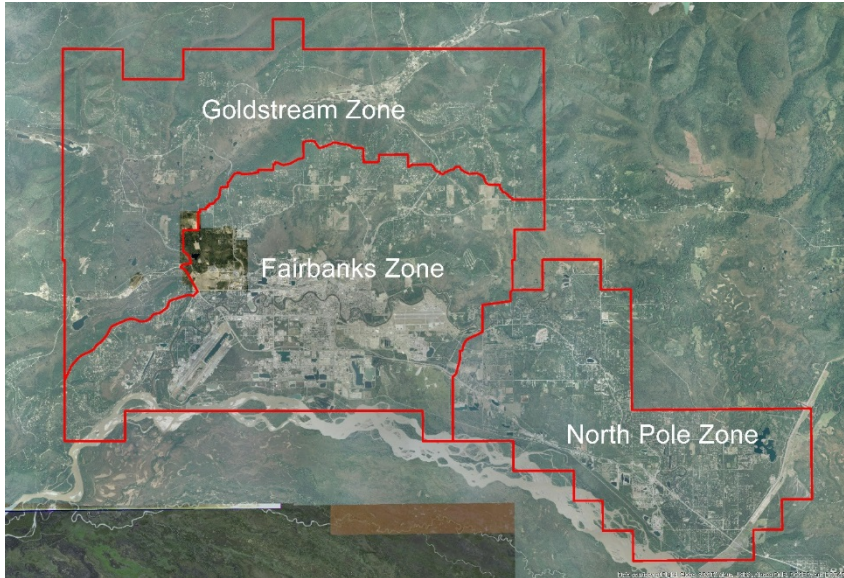
- Premature death from heart and lung disease
- Aggravation of heart and lung diseases
  - Hospital admissions
  - Doctor and ER visits
  - Medication use
  - School and work absences
- And possibly to
  - Lung cancer deaths
  - Infant mortality
  - Developmental problems in children, such as low birth weight
- Some groups are more at risk:
  - People with heart or lung disease
  - Older adults
  - Children





# Fairbanks North Star Borough PM<sub>2.5</sub> Nonattainment

## Where are we at?



- Serious nonattainment area
  - Public health concerns
    - Goal is to have healthy air to breathe
  - Federal planning requirements
    - Initial control plan is being implemented
    - Reclassification to Serious area means a new plan must be developed
    - Sanctions are imposed for state failure to act
  - Serious plan requires more controls to bring area into compliance



# What Happens if We Don't Take Action?

Do Not Submit  
A SIP

- EPA will file a “Failure to Submit”
- Sanction clock started
- 18 months later sanctions in effect
- Federal Implementation Plan start soon after

Federal Plan

Submit SIP

## Incomplete/Inadequate

- EPA identifies inadequacies
- Sanction clock started
- 18 months to update Serious SIP for deficiencies

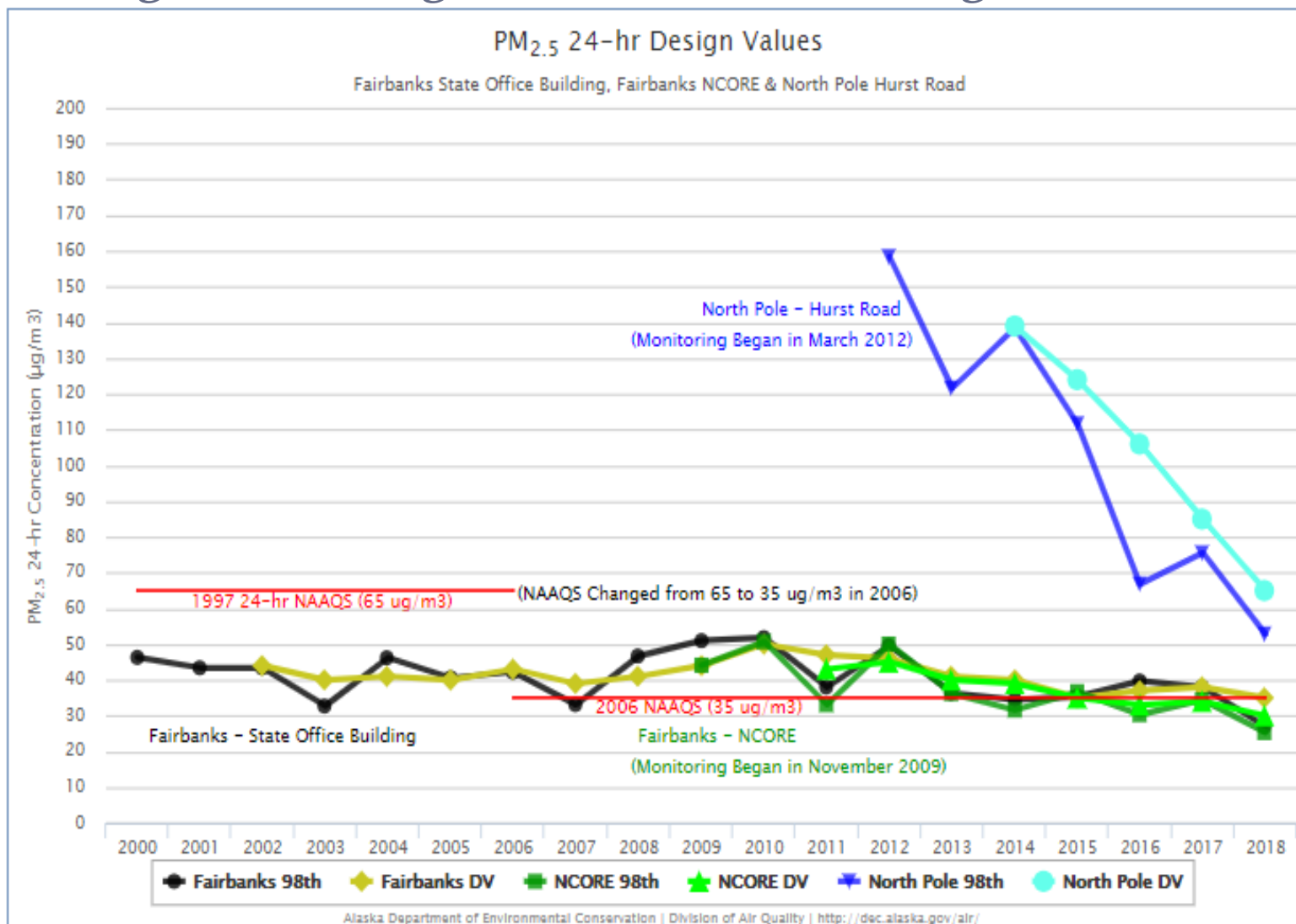
State Plan

## Complete/Adequate

- EPA has 6 months to determine completeness
- EPA begins process to approve SIP
- Committed measures in SIP implemented



# Progress is Being Made - Air Monitoring Trend







## Current Air Quality

- Air monitoring trends show great improvement
- More pollution reduction needed to reach a Design Value of 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) across the entire area

Air Monitoring Site 3-Year Design Value	Year:	2012	2013	2014	2015	2016	2017	2018
State Office Building		46	41	40	35	37	38	35
Ncore		45	40	39	35	33	34	30
North Pole Hurst Rd				139	124	106	85	65



## When can the area attain the PM<sub>2.5</sub> standard?

- Serious Plan cannot demonstrate attainment in 2019
- Plan shows that the area will realistically be able to reach attainment in the timeframe between 2024 and 2029.





## Key Goals and Elements of the Serious SIP

- Show how the area can reach attainment
- Continue to allow the use of solid fuel fired devices
- Limit the impact on large industrial sources as they are not the main contributors of the problem
- Meet the EPA completeness criteria for a SIP (avoid sanction)
- Meet the Best Available Control Measure (BACM) and Best Available Control Technology (BACT) Requirements
  - Are proposed controls technically and economically feasible?
- Position the SIP and control measures for transition to a 5% Plan, the next SIP update needed



## Summary of Control Measures

- Proposed control measures build off existing/continuing controls and Stakeholder recommendations
  - Required to look at measures from across the nation
  - Timing of proposed controls varies to allow time to prepare and plan
  - Seeking comment on controls including timing, technical and economic impacts
- Suite of updated requirements related to solid fuel heating devices
  - New stove standards (cleaner burning), change-out requirements, dry wood sales, stove registration for certain programs
  - 2-Stage solid fuel burning curtailments remain in place with new thresholds and an updated waiver program.
  - Retrofit Electrostatic Precipitators (ESPs) are not mandated but are included as a technology that needs more study



## Summary of Control Measures (cont)

- Proposing a switch to Diesel #1 for space heating in the nonattainment area in 2020
- Small commercial sources
  - Charbroilers, incinerators, used oil burners – Will request information
  - Coffee roasters – Control or show technical/economic infeasibility within one year
- Individual BACT determinations for large industrial sources



# Proposed BACT Determination Highlights

Highlights of BACT Controls by Pollutant					
Pollutant	Aurora	Fort Wainwright	GVEA North Pole	GVEA Zehnder	UAF
<b>Fine Particulate Matter (PM<sub>2.5</sub>) - Direct</b>	Existing No new control	Existing No new control	Existing No new control	Existing No new control	Existing No new control
<b>Volatile Organic Compounds (VOC)s</b>	Existing No new control	Existing No new control	Existing No new control	Existing No new control	Existing No new control
<b>Nitrogen Oxides (NO<sub>x</sub>)</b>	No new control Precursor Determination	No new control Precursor Determination	No new control Precursor Determination	No new control Precursor Determination	No new control Precursor Determination
<b>Ammonia (NH<sub>3</sub>)</b>	No controls available	No controls available	No controls available	No controls available	No controls available
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	Economically infeasible  Use low sulfur coal 0.2% S by weight by 2021	NEPA process to determine either SO <sub>2</sub> control on existing facility or replace facility  Use low sulfur coal 0.2% S by weight by 2021	<u>Short-term:</u> fuel switch to Diesel #1 during curtailments <u>Long-term:</u> ULSD or Natural Gas once decision on utilization of Healy 1 & Healy 2 finalized around 2022.	Owner requested limit to lower emissions below BACT threshold	Economically infeasible, fuel switch to ULSD in emergency generators  Use low sulfur coal 0.2% S by weight by 2021



## Serious SIP Available for Public Review & Comment

- May 14 - Start public comment period
- May 16 - Presentation to FNSB Assembly
  - 5:30 PM
- June 25 - Open House at Westmark Hotel
  - 6-8 PM
- June 26 – Hearings at FNSB Assembly Chambers
  - 12- 1:30 PM and 5-8 PM
- July 26 – End comment period



## How to Comment

- DEC wants your feedback
  - Comments are important to finalizing the plan
- Several ways to submit comments:
  - Electronically - online form
  - Email
  - Mail
  - Public Hearing
- Handout with details on how to comment is provided in the back of the room.





Questions?



Thank You!