



Fine Particulate Matter (PM_{2.5}) Update

Presentation to:
Fairbanks Chamber of Commerce -
Government Relations Committee

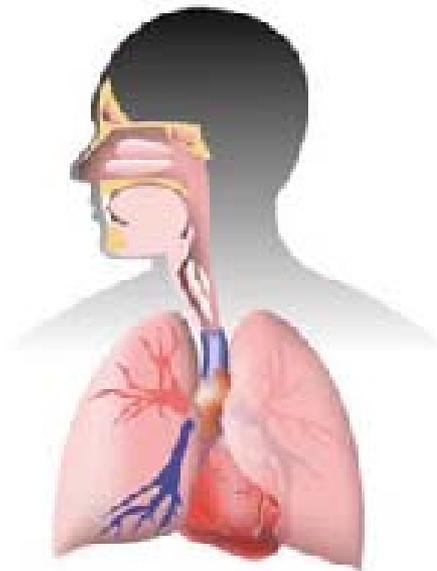
Denise Koch,
Director, Air Quality
DEC

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Health Impacts of High PM_{2.5} Concentrations

- Air Quality Plans or SIPs are needed to meet health based national ambient air quality standards (NAAQS).
- PM_{2.5}, due to its small size has the following health impacts:
 - Increased respiratory symptoms (coughing or difficulty breathing)
 - Aggravated asthma
 - Development of chronic bronchitis
 - Nonfatal heart attacks
 - Increased visits to medical facilities
- Sensitive populations:
 - Elderly
 - Children
 - Individuals with medical conditions





Cooperative efforts of FNSB and DEC

- FNSB and DEC are updating our long standing MOU.
- FNSB AQ staff:
 - Run special purpose monitoring (SPM) sites
 - Call advisories and alerts
 - Respond to citizen complaints about smoke from home heating
- DEC AQ staff:
 - Regulatory monitoring (commenced July 2016)
 - State Regulations – Incorporate local ordinances – Adopted 9/7/16
 - State Implementation Plan (SIP) planning process/SIP submission to EPA



Monitoring

- Federal Reference Monitors (FRM) – Used to calculate compliance with national PM_{2.5} standards
 - Locations remain fixed for decades after attainment achieved
 - Filter based instruments, operating every 3rd day
- Special Purpose Monitoring (SPM) at NCore and NPF#3–
 - Continuous analyzers, provide hourly data
 - Used to issue air quality advisories and alerts.
 - Additional monitors operated by FNSB staff
 - Used to investigate ‘hot spot’ areas



Update on SIP: Where we are today

- December 2014 - DEC submitted Moderate Area SIP EPA's deadline to make a finding on the Moderate SIP was February 2016. EPA missed that deadline. EPA has been sued.
- EPA has required DEC to make the North Pole Fire Station a regulatory site
- New North Pole monitor will affect everything we do.
- Public can access real time air monitoring data here:
 - <http://dec.alaska.gov/Applications/Air/airtoolsweb/Aq/>



SIP Background

- Moderate SIP based upon Design Value of $44 \mu\text{g}/\text{m}^3$
 - Based upon Fairbanks Monitor
 - Reduction of $9 \mu\text{g}/\text{m}^3$ required
 - Reductions with control measures incorporated at the time
 - Moderate SIP was an Impracticable SIP because *it could not demonstrate the minimum $9 \mu\text{g}/\text{m}^3$ reductions by 2015*

- Serious SIP will be based upon 2015 3 yr DV
 - 2015 Design Value of $124 \mu\text{g}/\text{m}^3$ for North Pole Fire Station monitor, which exceeds the standard.
 - Reductions of at least $89 \mu\text{g}/\text{m}^3$ will now be needed



Monitoring Data - Design Values

	2012 98 th percentil e ($\mu\text{g}/\text{m}^3$)	2013 98 th percentil e ($\mu\text{g}/\text{m}^3$)	2014 98 th percentil e ($\mu\text{g}/\text{m}^3$)	2015 98 th percentil e ($\mu\text{g}/\text{m}^3$)	2014 DV (3 yr) ($\mu\text{g}/\text{m}^3$)	2015 certified DV (3 yr) ($\mu\text{g}/\text{m}^3$)
Fairbanks SOB	49.6	36.3	34.5	35.3	40	35
Fairbanks NCore	50.0	36.2	31.6	36.7	39	35
North Pole Fire Station	158.4	121.6	138.3	111.6	139	124

- Attainment with PM_{2.5} 24-hr standards of 35 $\mu\text{g}/\text{m}^3$ is determined by a design value (DV), a rolling 3 yr average of the highest 98th percentile concentration at each compliance monitor.



Serious Nonattainment Area

- FNSB to be re-designated by EPA as a Serious Non-Attainment Area
 - Expected to occur soon; Serious Plan due 18 months later
- Serious Area SIP will be required and must:
 - Plan for attainment by 2019
 - Include analysis for Best Available Control Measures (BACM) as compared to other Serious non-attainment areas around the country, as well as Best Available Control Technology (BACT) for stationary sources as compared to other stationary sources in other serious non-attainment areas.
 - Failure to include and implement BACM and BACT; EPA will not approve plan and this will start a sanction clock.



Serious SIP development

- DEC started working on Serious SIP in January 2015
- Notified Stationary Sources of BACT analysis in April 2015
- Serious Area SIP challenges:
 - EPA has not yet made decisions on the Moderate SIP
 - Likely will need to fix any deficiencies in the Moderate SIP at the same time as preparing a Serious SIP
 - Tight timelines
 - Have not received BACT analysis from stationary sources, early schedule can not be met
 - 89 $\mu\text{g}/\text{m}^3$ reductions needed to demonstrate attainment by 2019
 - New EPA PM_{2.5} Implementation rule has been finalized - Additional requirements for a Serious SIP



Immediate Impacts of becoming a Serious Area

- Upon EPA re-designation of FNSB non-attainment area from Moderate to Serious, the following contingency measures become mandatory:
 - Commercial Wood Seller Registration –
 - 60 day advance public notice
 - Remove or replace older, inefficient wood heaters that don't meet state and EPA emission standards when a property is sold [18 AAC 50.077(a)(2)(B)]
 - DEC conducted outreach to real estate professionals in May 2015.
 - <http://burnwise.alaska.gov/docs/DEC-EPA-Standards.pdf>



Why did the State submit Request to EPA to Divide the Nonattainment Area?

- Likely will need more time (beyond 2019) for North Pole monitor to demonstrate attainment due to high design value.
- Clean Air Act allows for additional time but SIPs must include Most Stringent Measures.
- The only way to reduce those impacted by the Most Stringent Measure requirement is change the nonattainment boundary.
- Western half of nonattainment area is generally seeing improvements.



Request to Divide Nonattainment area

- Submitted November 20, 2015
 - EPA has until May 2017 to respond
- All areas in the FNSB nonattainment area would remain in one of the two areas if EPA approves request
- Western portion would include Fairbanks; Eastern portion would include North Pole
- Technical document may be found at:
- http://dec.alaska.gov/air/anpms/comm/fbks_pm2-5_area-separation-request.htm



Ramifications if Division is Approved

- Two full SIPs will be required; one each for Western and for Eastern portion of non-attainment area will have to be maintained
- Must still demonstrate attainment in all grid cells before either area can be reclassified as a maintenance area.
- Must still meet all Clean Air Act requirements



Potential Additional Measures to Improve Air Quality

- Finding enough measures to address the $89 \mu\text{g}/\text{m}^3$ in reductions needed will be very difficult.
- Focus on biggest polluting sources –
 - Hydronic heaters and coal-fired devices
 - Target change outs in areas of high concentrations (hot spots and sensitive populations)
- Start burn curtailments at lower concentrations
- Continue enforcement
- Continue to support natural gas efforts



Sanctions

- EPA can institute sanctions for:
 - Failure to submit a SIP on time
 - EPA disapproval of a SIP
 - Failure to implement an approved SIP
- Sanctions include:
 - 2 to 1 offsets
 - Moratorium on federal highway dollar expenditures in the nonattainment areas for all but exempt projects (e.g. safety, mass transit)



Conformity

- If the control measure chapter of the Moderate SIP is disapproved the Motor Vehicle Emission Budget will not be approved.
- This will result in a 'freeze' for FMATS' transportation improvement program (TIP). No new projects amendments are allowed to be added unless exempt.



Funding

- DEC submitted three applications for EPA Targeted Air Shed Grant projects to reduce PM_{2.5} levels in 24-hr PM_{2.5} nonattainment areas.
 - Applied in July. Expect to hear by beginning of Oct.
 - Reader Board Project (\$3 mil)
 - Wood Stove Change Out Program Project (\$2.5 mil)
 - Bus Replacement Project (\$2.6 mil)



Questions?

Thank You!

For more information:

http://dec.alaska.gov/air/anpms/comm/fbks1_pm.htm