

## Responses to Open House Questions Received October 2, 2013

Version 2

### Regulatory Questions

1 10/2/2013	<b>Why is the approach of the state to treat the air problem as a collective problem of all residents instead of indentifying the problem sources and dealing with the sources?</b>
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The Borough and DEC have worked to identify all sources of fine particulate matter (PM2.5) in the development of the air quality plan and have focused efforts on reducing emissions from problem sources within the area.

While PM2.5 levels are not uniform throughout all parts of the non-attainment area, the federal Clean Air Act requires the development of an implementation plan outlining how the entire area will reach and maintain the air quality standards. The plan includes both enforceable and voluntary measures that will address the sources of air pollution causing the problem in the area.

As part of the planning effort, multiple years of studies have been conducted to determine the specific sources of PM2.5 in the non-attainment area and the most cost effective opportunities for control. Wood smoke produced by home heating was identified as the primary source of wintertime PM2.5 in the non-attainment area. The studies found that particulates coming from wood burning were found to contribute 60-80% of the PM2.5 at the air monitors. The largest unregulated source of PM2.5 in the non-attainment area is residential heat sources. Given the majority of the area-wide problem is wood smoke, DEC's proposed regulations are focused there. DEC will continue to work with individual wood burners to reduce localized emissions as needed through complaint response and regulatory compliance efforts, but broader efforts are needed on the part of all residents to address the larger problem within the area. Addressing heating emissions is critically important and these regulations will be coupled with other measures in the air quality implementation plan that will further reduce heating emissions (like the Borough change-out program and the expanded availability of natural gas) as well as emissions from other air pollution sources, such as motor vehicles and industrial plants.

Industrial plants fall under a different set of regulations and already have controls for particulate matter in place, but are also being evaluated to determine whether additional controls are reasonable and feasible to assist with bringing the non-attainment area into compliance. Other federal regulations and state programs are working to reduce PM2.5 from diesel vehicles and equipment.

2 10/2/2013	<b>Why is there such a focus on the air problem being solved by changing laws to control people instead of focusing resources on a known clean source of heat such as natural gas?</b>
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The Clean Air Act requires that the state have permanent and enforceable measures included in the air quality attainment plan. The proposed regulations help to meet that federal requirement. The draft regulations are meant to support the voluntary change-out programs and public education under way in the community, and balance the needs of residents to economically heat their homes. In addition, the state has made a significant investment toward projects that will bring natural gas to the Fairbanks North Star Borough. The Interior Energy Project approved during the last legislative session is working to bring additional natural gas to the area by 2016. However, there may not be either enough gas or sufficient infrastructure to convert many homes from wood heat by the time the area is to demonstrate compliance with the federal requirements. Even when natural gas is available, homes will need to convert to gas and gas prices will need to be low enough to entice homeowners to choose to switch fuels. As a result, the department thinks it is



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important to focus attention and reasonable controls on reducing wood heating impacts. It is important to address the health concerns associated with poor air quality and the sooner we can start reducing concentrations on high days, the sooner those health benefits can be realized.

3 10/2/2013	<b>What happens if the FNSB assembly doesn't approve the SIP? Does the state take over? Does EPA?</b>
<p>Under the Clean Air Act, the State is responsible for developing and implementing a state implementation plan (SIP) to bring the Fairbanks North Star Borough (FNSB) non-attainment area into compliance with the national ambient air quality standards. The State has delegated the lead planning responsibility in this effort to the Borough with the goal of developing a plan that can be supported by the local community. Should the FNSB Assembly choose not to pass a resolution supporting a proposed SIP, the State would still remain responsible to finalize a plan to bring the community into attainment with the national ambient air quality standards. Because the SIP will rely on some local programs and actions, like the heating device change out program, it would be important for the FNSB Assembly to continue to provide support for those programs. EPA will only take over the responsibility and develop a federal implementation plan if the State fails to submit an approvable SIP.</p>	

4 10/2/2013	<b>Why aren't the wood heater emission standards proposed statewide?</b>
<p>Many areas of Alaska do not have wintertime fine particulate matter (PM2.5) problems resulting from wood smoke. This proposal focuses on addressing the specific and significant air pollution concerns in the Fairbanks North Star Borough (FNSB) non-attainment area.</p>	

5 10/2/2013	<b>Many persons only use wood as an extra heating source when the temperature drops below -30F or so to keep their homes livable - need the wood stove for additional heat to prevent their pipes from freezing. How will persons comply with the 'curtailment' of wood heating devices during a declared episode if they must use wood to keep their home warm during extreme cold weather? Must they chose between breaking the law and fixing broken pipes?</b>
<p>DEC wants to help ensure that people in the Fairbanks area can heat their homes with affordable fuels including wood. With this objective in mind, DEC is proposing to relax the current regulation that prohibits using wood as a fuel for heating when an air quality episode (described below under question4) has been declared. The proposed revisions to 18 AAC 50.075(b) states, "the department may prohibit operation of wood-fired heating devices..." This change is meant to provide flexibility so DEC can allow residents who have only wood heat or need wood heat to keep their house warm in severe cold weather to continue to heat with wood during a declared air quality episode. Again, the current regulation, without the proposed change, would prohibit all wood-burning when an air episode is declared.</p> <p>Based on past air quality conditions in the Fairbanks-North Pole area, the department thinks it will be important to include a section in the local air quality plan (which is still being developed by DEC and will be going out for public review and comment later this fall and winter) that would lay out how the department would address an air episode. Some options could include: subdividing the non-attainment area into smaller areas where potential episodes could be called with response options specifically tailored to what is</p>	



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reasonable and effective in that area; identifying the temperature range where a wood heater curtailment would risk safety and property (frozen pipes) and would not be considered a reasonable response option; identifying what meteorological data should be used and how, identifying how best to utilize the air monitors, identifying what types of exemptions to a curtailment program there should be and identifying how to implement those exemptions. While the outcome of this regulation process is not yet known, over the next few months, the Division of Air Quality will work to draft an approach for air episodes that can be included in the local air quality plan. Again, this plan would then be released for public review and comment in the next phase of the air quality planning process. DEC would continue to work with the community to develop all components of the plan.

6 10/2/2013	<b>How can the regs be changed so persons do not have to choose?</b>
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The proposed regulations are intended to add flexibility to allow decisions on if, or when, a curtailment would be needed without compromising safety or property damage (freezing pipes). See response to No. 5 above.

7 10/2/2013	<b>What regulatory approaches have provided the quickest and most effective relief in other states? Why not share with us?</b>
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There are a number of regulatory approaches that have been used in other states to address air pollution concerns within their jurisdictions. Libby, MT successfully used a wood stove change out program to lower its wintertime PM2.5 levels below the EPA standard and then followed that extensive change-out with a local regulation to prevent smoke. Another effective program used in a number of other problem areas (Juneau, Oregon, Washington) is to call "burn bans" on air quality episode days in conjunction with registering "wood only" burners who are allowed to burn on ban days. There are some variations in these programs including tiered bans that allow cleaner units to burn under the first tier and then excluding all burning at a higher tier. Some areas (Oregon) have required old devices to be changed out upon the sale of a home. Juneau has put in building requirements to prevent construction with wood as the only source of heat. The Kickapoo Tribe in Kansas has a dry wood exchange program where they exchange an equal amount of wet wood for dry wood. The EPA Burn Wise web site has some examples of regulatory programs at:  
<http://www.epa.gov/burnwise/ordinances.html>

8 10/2/2013	<b>Will you be honest now and admit that the ultimate goal is to force us all to use electric heat to make us dependent on a government-licensed utility?</b>
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While the use of electric heat reduces emissions from homes, there is no objective or goal to force the use of electric heat. DEC's ultimate goal is to ensure clean air for all its citizens and compliance with the federal air quality standards. DEC also recognizes the need to achieve these goals in a manner that still allows residents to economically heat their homes. It appears that in the Fairbanks North Star Borough PM2.5 non-attainment area this can be accomplished with the public's proper use of the cleanest wood burning devices, burning dry wood, along with homeowners' current use of fuel oil and the future expanded use of natural gas in the area.



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9 10/2/2013	<b>Will the State return to further restrict diesel and other heating sources after Fairbanks / North Pole homeowners have been forced to give up wood?</b>
<p>These proposals allow Fairbanks and North Pole homeowners to continue to use wood as a heating fuel. At present, the State does not think it is necessary to further restrict diesel and other home heating sources in order to achieve the air quality standards. While there is an air quality benefit to using No. 1 fuel oil over No. 2 fuel oil, the State recognizes that No. 1 fuel oil is generally more expensive than No. 2 fuel oil. Since the price of fuel oil is an important driver in making wood and coal more economically attractive for home heating, it is not prudent to make requirements that would further increase the cost of fuel oil for local residents. There is always a chance that additional steps may be required if improvements to air quality are not realized and the ambient air quality standard is not met. However, it appears unlikely that restrictions on fuel oil would prove to be very cost effective as it is a much cleaner fuel than wood.</p>	

### Regulation Questions

1 10/2/2013	<b>Why is wet wood not listed in the list of prohibited fuels?</b>
2 10/2/2013	<b>Why is the burning of wet wood not addressed? This represents one of our primary problems.</b>
3 10/2/2013	<b>Why is there no regulation proposed for wet wood?</b>
4 10/2/2013	<b>Why is wet wood not listed in the list of prohibited fuels?</b>
<p>While the use of wet wood leads to poor combustion and smoke, there is not yet a solution to ensure an ample dry wood supply in the Fairbanks North Star Borough throughout the wood-burning season. It is difficult to consider advancing a requirement for dry wood without having an adequate supply or providing an alternative option for those who purchase their wood. At this time, the State thinks that implementing public education and voluntary programs will assist in raising the awareness for residents to properly season wood and the increase availability of dry wood in the market. We continue to evaluate the issue of wet wood and encourage further discussion. DEC welcomes your suggestions and comments on this issue. The current proposal does not mean that a regulatory provision to address wet wood could not be brought forward in the future if needed to bring the community into attainment with the National Ambient Air Standard (NAAQS) for PM2.5, which is the legal requirement in the federal Clean Air Act that we must all meet. That standard is set to protect human health.</p>	

5 10/2/2013	<b>I live just outside the non-attainment area. Do the air quality episodes and associated wood heating regulation apply only in the non-attainment area?</b>
<p>The regulations regarding air quality episodes are statewide and apply both inside and outside the non-attainment area. However, from a practical perspective, the geographic extent of an episode area will be dependent on the specific situation or event, as will the regulatory steps to mitigate that episode. Please also see the response to No. 5 in the Regulatory Questions section.</p>	



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6 10/2/2013	<b>Do the regulations change the local AQ MOU with DEC?</b>
<p>No, the regulations do not change the local air quality Memorandum of Understanding (MOU) between DEC and the Fairbanks North Star Borough. The MOU may only be changed by joint agreement of both parties. The finalization of any of the proposed regulations provides an opportunity for the department and the Borough to further clarify their respective roles, responsibilities, and the Borough's delegated authorities related to air quality activities, but only through an updated MOU.</p>	

7 10/2/2013	<b>Dry wood, not just clean wood, should be specified as allowable. Dry could / should be defined as 20% or less moisture.</b>
<p>While the use of wet wood leads to poor combustion and smoke, there is not yet a solution to ensure an ample dry wood supply in the Fairbanks North Star Borough. It is difficult to consider advancing a requirement for dry wood without having an adequate supply or providing an alternative option for those who purchase their wood. At this time, the State thinks that implementing public education and voluntary programs will assist both in raising the awareness for residents to properly season wood and to enhance the availability of more dry wood into the market. We are continuing to review and evaluate the issue of wet wood and encourage continued discussion and comments on this issue. The current proposal does not mean that a regulatory provision to address wet wood could not be brought forward in the future.</p>	

8 10/2/2013	<b>If non-attainment starts at 35 ug/m3, why is the trigger set at 56 ug/m3? Why not set the trigger at 25 or 30 to protect health?</b>
9 10/2/2013	<b>Why did the department propose 56 ug/m3 as the first episode level? How do these episode levels relate to the concentrations that Fairbanks must meet for the Attainment plan? Why are the concentrations in the table higher?</b>
<p>In the regulation proposal, a 24-hour PM<sub>2.5</sub> concentration of 56 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) would initiate the first level of a formal air episode, an alert. The department proposed this level as it is equivalent to the federal Air Quality Index value where air quality is deemed “Unhealthy” for all individuals. The proposed concentration is higher than the 35 <math>\mu\text{g}/\text{m}^3</math> 24-hour National Ambient Air Quality Standard (NAAQS) for PM<sub>2.5</sub>. The NAAQS is set at a level that is meant to protect sensitive populations, including children, the elderly, and those with existing medical conditions. The NAAQS level corresponds with the Air Quality Index value where air quality is deemed “Unhealthy for Sensitive Groups.” Under the proposal, air quality advisories could still be called at PM<sub>2.5</sub> concentrations between 35 and 55 <math>\mu\text{g}/\text{m}^3</math> (per 18 AAC 50.245(b)) along with requests for voluntary actions to curtail emissions. The department is seeking comment on the proposed episode levels.</p> <p>Setting air quality episode concentration thresholds is a requirement for state’s implementing the National Ambient Air Quality Standards under the Clean Air Act. Establishing the thresholds for the PM<sub>2.5</sub> concentration levels that can trigger a formal air quality alert, air quality warning, and air quality emergency helps to provide a framework for DEC and local air agencies as they work together to inform the public of poor air quality conditions and evaluate response actions. Air quality episodes as a result of human-caused air pollution should not be frequent events in any community; response actions to episodes are not meant to</p>	



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replace on-going formal control programs to bring an area into compliance with the health-based air quality standard. The development and implementation of an attainment plan will reduce the overall risk of areas reaching unhealthy levels of air pollution, the need to declare air episodes and the subsequent need to take actions for these significant but rarer air pollution events that could impact a broader sector of the public. One could view response to an air quality episode as similar to a fire department responding to a single dangerous fire while the development and implementation of the PM2.5 attainment plan is deciding what needs to be done to lower the risk of all fires in the future. ☐

10  
10/2/2013

**Please clarify 18 AAC 50.075(b) language, “The department may prohibit”**

- **does that mean that (some) zones or areas could be impacted & not others?**
- **or other conditions may apply?**
- **“may” seems like a very weakened stance. Is this intended to be conditional dependent upon current data, atmospheric conditions, power outages, etc....?**

By inserting the wording, “the department may,” the proposed regulations allow the flexibility to either call an episode or not, and if calling an episode, to further require curtailment or not. The flexibility allows the department to localize the episode to limit the impact. The flexibility also allows the department to identify exemptions or other conditions that may apply. The proposal is meant to recognize and confront a practical consideration that was not addressed when the regulation was first established many years ago - that many residents of Alaska may only have wood as a source of heat and that air episodes could occur during winter months when space heating is essential. The intention is to allow the department to take a number of items into account when implementing the regulation. Please see No. 5 in the Regulatory Question section’s response.

11  
10/2/2013

**Why are the electrical generation plants exempt from these regulations, but home owners are not?**

The Borough and department are looking at all sources of PM2.5 in the development of the air quality plan. The electrical generation plants fall under a different set of regulations and do have requirements they must meet through their air permits. These plants have controls for particulate matter in place, but are being evaluated to determine whether additional controls are reasonable and feasible to assist with bringing the non-attainment area into compliance. Any additional control requirements will be accomplished through the State Implementation Plan and ultimately their air permits. The largest unregulated source of PM2.5 in the non-attainment area is residential heat sources. The wood heat sources have been found to contribute 60-80% of the PM2.5 at the air monitors so these regulations focus on, and address emissions from, the wood heat sources. Additional information on air permits is available at <http://dec.alaska.gov/air/ap/mainair.htm>.

12  
10/2/2013

**Why are commercial establishment exempt from these regulations?**

These proposed regulations do not exempt commercial establishments that conduct outdoor open burns or use wood to heat their building; these establishments must adhere to the regulations in the same way residents do.



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In addition, the proposed emission standards apply to any manufacturer, supplier, distributor, or person intending to sell, lease, distribute, market, or convey a new wood-fired heating device for use in PM2.5 non-attainment areas located in Alaska. Therefore, any commercial establishment selling or installing a new wood-fired heating device would also be subject to these regulations.

13 10/2/2013	<b>Will paper pellets from K&amp;K Recycling be accepted fuel for heating devices?</b>
The proposed regulations only list “wood pellets made from clean wood;” paper pellets are not allowable under the proposed regulations. We would welcome comment on the suitability of these paper pellets in wood-fired heating devices.	

### Coal Questions

1 10/2/2013	<b>Why are there no regulations for coal stoves?</b>
2 10/2/2013	<b>Why are we neglecting impacts of home burning of coal?</b>
3 10/2/2013	<b>Why are coal burners not being regulated (except for allowable fuel) when the EPA neither certifies nor qualifies coal burners? Sub-bituminous coal is quite dangerous &amp; toxic, yet the regs do not even touch this.</b>
4 10/2/2013	<b>For proposal 18AAC50.077, why no clarification for requirement for cleaner burning new coal stoves?</b>
<p>As part of the air quality planning effort, studies have been conducted to determine the specific sources of the pollution found on the monitor filters from within the non-attainment area. The studies found that the portion of particulate coming from coal burning is small compared to the particulate on the filters from wood burning. This is consistent with surveys of residents’ home heating devices which show wood heaters are much more prevalent than coal heaters. Given that the majority of the problem, area wide, is wood smoke, the current proposed regulations are focused there. However, the department is very aware of citizen concerns regarding smoke from coal-fired heaters. Unfortunately, the U.S. EPA has not developed any emission standards for new residential coal-fired indoor stoves or outdoor boilers nor has EPA established any specific test methods or program to certify residential coal heating devices. As a result, DEC does not have an existing federal program or framework to use to make a regulatory decision on an emission standard for coal heaters. For DEC to regulate coal-fired heating devices, significant research is needed to establish standards for these devices. DEC would need to work with a testing laboratory to test and develop a method for certifying coal-fired heating devices and then use that method to test many types of coal-fired devices. This research, testing, and development would take time and resources. DEC continues to evaluate the need for and the options to address emissions from residential coal-fired heating devices. We welcome continued discussion and comment on this issue.</p>	

### Masonry Heater Questions

1 10/2/2013	<b>Who will test the masonry heaters to see whether they will qualify?</b>
2 10/2/2013	<b>How will masonry heaters be treated?</b>



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3 10/2/2013	<b>How do these regulation proposals affect masonry heaters?</b>
<p>The proposed regulations do not specifically mention masonry heaters; however, as a masonry heater is wood-fired and could be used for cooking and/or heating, it appears that they would be covered under the definition for “wood-fired heating devices” in 18 AAC 50.900 (123) and under the definition of "solid-fuel heating device” in 18 AAC 50.900 (137). The proposed regulations for 18 AAC 50.075(b) and 18 AAC 50.076 are applied to either wood-fired heating devices or solid fuel-fired heating devices, which would apply to masonry heaters. The proposed regulations in 18 AAC 50.077(b)(1) and (2) establish emission standards specifically for hydronic heaters and wood stoves. This would not appear to include masonry heaters. But, there is also a proposed emission standard at 18 AAC 50.077(b)(3) for new wood-fired heating devices with a rated size greater than 300,000 BTUs, which might include a masonry heater. We encourage comments on masonry heaters, the appropriateness of the regulations for these heaters, and how we could clarify the proposed regulations.</p>	

### Attainment Questions

1 10/2/2013	<b>Why are we waiting until 2019 or later to meet PM2.5 attainment? (5 people asked this)</b>
2 10/2/2013	<b>Why do we have to wait for 6 more years to even approach healthy air quality levels? Some of us don't have that long.</b>
<p>The Fairbanks North Star Borough and DEC understand the health concerns associated with poor air quality and are working to find a path to bring the non-attainment area into compliance prior to 2019. Our preliminary modeling analysis indicates that a combination of several programs can reduce PM2.5 levels between now and 2019. Programs included in this preliminary modeling are the area wide woodstove change out program, the enhanced solid fuel burning appliance program, voluntary measures, public education, state regulation, and the expanded availability of natural gas (after 2015). With natural gas not expected to be more widely available until 2016, we continue to seek options and ideas to accelerate PM2.5 emission reductions into earlier years. Bringing the area into attainment under this preliminary plan hinges on a Borough, State and public partnership to implement and support all the proposed programs. For more details, see the presentation given to the FNSB assembly on October 3, 2013, which can be found at: <a href="http://dec.alaska.gov/air/anpms/comm/fbx_assembly_briefings.htm">http://dec.alaska.gov/air/anpms/comm/fbx_assembly_briefings.htm</a></p>	
3 10/2/2013	<b>What are you doing for us this winter?</b>
<p>For this winter, the Fairbanks North Star Borough and DEC are continuing programs already underway to help reduce air pollution. The Fairbanks North Star Borough, through its area wide solid fuel burning device change-out program and the enhanced solid fuel burning appliance program, assisted many property owners in replacing outdoor wood boilers over the past summer. This should help to reduce smoke impacts this winter in some areas. The agencies will also continue their public education efforts to encourage best burning practices and the use of appropriate fuels. In the event of complaints about specific solid fuel heating devices, DEC air quality staff will investigate those complaints and work with the owners and operators to ensure compliance with regulations. In addition, the state will be continuing its effort on the Interior Energy Project and other projects designed to bring affordable natural gas into the area. AHFC energy rebate and</p>	





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weatherization programs will continue to provide residents with opportunities to reduce home energy costs and support improved air quality. DEC will continue with the air quality public involvement process, including open houses and public hearings on the regulatory proposals and then on the State Implementation Plan as we all work toward alleviating the air pollution problem.

4 10/2/2013	<b>What are the attainment concentrations and how do we find out more information?</b>
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The 24-Hour National Ambient Air Quality Standard for fine particulate matter (PM<sub>2.5</sub>) is 35 micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ ). Compliance with the standard is determined by a three year average of the yearly 98th percentile 24-hour monitored PM<sub>2.5</sub> concentration (at federal reference method air monitors and sites). This allows for a few high concentration days each year before the area is determined out of compliance with the standard. Additional information is available at: [http://dec.alaska.gov/air/anpms/comm/docs/fbxSIPpm2-5/handouts/comparison\\_concentration\\_aqi.pdf](http://dec.alaska.gov/air/anpms/comm/docs/fbxSIPpm2-5/handouts/comparison_concentration_aqi.pdf)

### Non-Attainment Area Questions

1 10/2/2013	<b>What does the 'non-attainment area' mean?</b>
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A non-attainment area is a geographic area designated by the Environmental Protection Agency as not meeting the ambient air quality standard (see response to question #2 in the Non-Attainment Area Questions-below for more information on how non-attainment area boundaries are determined). Once a non-attainment area is designated, the state and local governments must develop an implementation plan outlining how the area will meet and maintain the standards by reducing air pollutant emissions. The plan includes both enforceable and voluntary measures that will work to address the sources of air pollution that are causing the problem in that area.

2 10/2/2013	<b>Why is the area north of Badger Rd not in the Non-attainment area? There are 82 families living in the area with a lot of wood stoves creating impacts.</b>
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The boundary of the non-attainment area was determined in 2009 by the Environmental Protection Agency through the designation process. The Borough and State provided information to EPA and made recommendations on a boundary. EPA considered the recommendations but also used additional analytical tools, and other relevant information, to make final decisions on nonattainment area boundaries including: emission data, air quality data, population density and degree of urbanization (including commercial development), traffic and commuting patterns, growth rates and patterns, meteorology (weather/transport patterns), geography/topography (mountain ranges or other air basin boundaries), jurisdictional boundaries (e.g., counties, , metropolitan planning organizations), and the level of control of emission sources. Additional information on the area designation process is available on EPA's web site at: <http://www.epa.gov/airquality/particlepollution/designations/2006standards/index.htm>

### Health Questions



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1 10/2/2013	<b>Where is the urgency for our health?</b>
2 10/2/2013	<b>Why do we have to wait for 6 more years to even approach healthy air quality levels? Some of us don't have that long.</b>
3 10/2/2013	<b>Why is public health not the top priority when policies concerning air quality are formulated?</b>
4 10/2/2013	<b>Why isn't air quality as important as water quality? If my septic system overflows into my neighbor's well, I will be written up / fined by DEC and will have to pay to have my septic system fixed and pay for cleaning my neighbor's well. If my neighbor's wood smoke comes onto my property and adversely affects me (I have asthma) why won't DEC make him fix his woodstove / clean the air? I should not have to be housebound in the winter or have to move because of someone else's lack of caring.</b>
<p>DEC's mission is protecting public health and the environment and this mission drives our efforts to address this air pollution issue. Clean air is essential to every individual. The department understands the health concerns associated with poor air quality; finding a path forward to bring the non-attainment area into compliance is a very high priority.</p> <p>Wintertime air quality in Fairbanks is a challenging air quality problem that will only be resolved through the combined effort of all levels of government and, most importantly, the effort of local residents to reduce the air pollution impacts from their own activities.</p> <p>DEC's goal is to ensure clean air for all and achieve compliance with the federal air quality standards. DEC recognizes that to be successful in reaching this goal, we need to do so in a manner that still allows residents to economically heat their homes. To this end, the Fairbanks North Star Borough and the state have been working to bring forward ideas, projects, and proposals for the past few years in an effort to reduce air pollution and to gain consensus on an overall approach to address the local pollution problem.</p> <p>DEC is proposing these new regulations concerning wood-fired and solid-fuel fired heating devices in order to help reduce wood smoke and ambient levels of PM2.5 within the area. However, these regulations must be coupled with other programs to achieve clean air. Our preliminary modeling analysis for the air quality plan indicates that a combination of several programs can reduce PM2.5 levels between now and 2019.</p> <p>With natural gas not expected to be more widely available until 2016, we continue to seek options and ideas to accelerate PM2.5 emission reductions into earlier years. For example, are there things we can all do to enhance public education and work toward stronger community engagement, accelerate heating device change outs, and/or develop new ideas to improve burning through availability or use of dry wood? Bringing the area into attainment under this preliminary plan hinges on a Borough, State, and public partnership to implement and support all the proposed programs. For more details, see the presentation given to the FNSB assembly on October 3, 2013, which can be found at:  <a href="http://dec.alaska.gov/air/anpms/comm/fbx_assembly_breifings.htm">http://dec.alaska.gov/air/anpms/comm/fbx_assembly_breifings.htm</a></p>	
5 10/2/2013	<b>To what extent can the indoor air in schools &amp; public buildings be protected? i.e., on a poor AQ day, school age students cannot go outside for recess, yet the indoor air still has high levels of PM2.5</b>
6	<b>Why is there no proposed regulation setting an indoor air pollution level for schools, public buildings and</b>



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10/2/2013	<b>other work places?</b>
7 10/2/2013	<b>Indoor air can be worse than outdoor air; what agency takes care of indoor air quality?</b>
8 10/2/2013	<b>Is OSHA a part of this process?</b>
<p>DEC does not have statutory authority to address indoor air quality and is not proposing any indoor air quality regulations. Workplace indoor air quality is governed under Occupational Safety and Health requirements. The Environmental Protection Agency has information and programs to assist with indoor air quality in schools and residences. Further information on indoor air quality can be found through EPA Region 10's web site at: <a href="http://yosemite.epa.gov/R10/AIRPAGE.NSF/webpage/Indoor+Air+Quality+in+Region+10">http://yosemite.epa.gov/R10/AIRPAGE.NSF/webpage/Indoor+Air+Quality+in+Region+10</a></p>	

9 10/2/2013	<b>You do know that wood has been used for millennia and diesel for only a century? Humans are more likely to be adapted to that which we've used a long time and diesel exposure is a known carcinogen.</b>
<p>PM2.5 from wood smoke and diesel exhaust are both known to cause health effects and diesel exhaust is categorized by the EPA as a likely carcinogen. DEC's proposed regulation package is focused on regulating PM2.5 from wood-fired and solid-fuel fired heating devices, which will help to reduce health impacts from these sources. Other federal regulations and state programs are working to reduce diesel exposures.</p>	

### Research Questions

1 10/2/2013	<b>What research indicates coal and wood burners in our area will voluntarily switch to natural gas? I'm very skeptical LNG is the cure.</b>
<p>The conversion to natural gas for space heating is actively being studied and analyzed as part of the Interior Energy Project. For more information, see the project web site at: <a href="http://www.interiorenergyproject.com/">http://www.interiorenergyproject.com/</a>. DEC and Borough home heating surveys have indicated a price point that residents would be amenable to switching from a wood device to natural gas. At \$2 per gallon of fuel oil price point equivalent, a majority of residents said they would switch to the use of gas.</p>	

2 10/2/2013	<b>Why don't you focus more on technology / retrofits of woodstoves? There are 'add-ons' available now to attach to your stove pipe that will filter the air in the smoke stack during the first 15-20 minutes – electrostatic precipitation with removable filters. Replace dirty filter with clean one, wash dirty one to have it ready for next switch. Then smoke stack emissions will be as clean when stove is first started as when it's warmed and running properly.</b>
<p>We appreciate the suggestion to look more closely at new technology retrofits for wood heaters. This is an area of active research and development that could prove to be a fruitful option in the future. One concern is that there is not a lot of long-term data on the longevity of these retrofit devices and their benefits as well as their performance in the cold temperatures in the Fairbanks area. Some pilot work was conducted to research retrofits and try them in Alaska conditions. However, the department and Borough have focused on wood heating standards and device change outs for the air quality plan because we think they can better ensure long-term emission benefits.</p>	

3	<b>Are there independent labs that can test wood heating appliances and retrofit devices?</b>
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10/2/2013	<p>Yes, there are labs that are certified to test wood heating devices. The EPA has accredited independent labs and they are listed on the EPA web site at:  <a href="http://www.epa.gov/compliance/monitoring/programs/caa/whlabs.html">http://www.epa.gov/compliance/monitoring/programs/caa/whlabs.html</a>. The Borough did test wood and oil devices from the Fairbanks area and the results were used to inform and generate the home heating emissions in our modeling.</p>
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4 10/2/2013	<p><b>Why has the air quality gotten worse in Fairbanks?</b></p> <p>The increase in PM2.5 has occurred primarily because of increasing fuel prices. As fuel prices have increased, more households are using more wood heat. For the same heat output, woodstoves put out about 500 times the amount of particulate matter as compared to fuel oil.</p> <p>There are a number of factors, including variations in meteorology and an increase in wood burning associated with fuel price increases over time, that have combined to result in poor air quality in the non-attainment area. Variations in meteorology winter to winter also create variability in the frequency and severity of PM2.5 episodes making it difficult to predict the frequency of episodes from one year to the next. Factors contributing to the wintertime PM2.5 problem include:</p> <ul style="list-style-type: none"> <li>• the high price of fuel oil and the current lack of affordable clean-burning alternatives,</li> <li>• cold weather which results in significant heating demands,</li> <li>• poor dispersion of emissions (especially during high PM2.5 episodes),</li> <li>• a much higher amount of emissions when burning wood as compared to other fuels, and continued use of older, higher-emitting wood burning appliances (e.g. non EPA-certified and older devices) and practices (such as burning of wet wood).</li> </ul> <p>Most residents in the non-attainment area heat their homes primarily or exclusively by burning fuel oil, and from the mid-1980's through the late 1990's the price of relatively clean-burning fuel oil in Alaska remained nearly constant at about \$1/gallon. However, in about the year 2000, oil prices began to rise, and have generally risen since then with a significant price spike in 2008. The current oil price, while not yet reaching the peak of 2008, has trended upward about 20 cents/gal for each of the last seven years, creating, in the absence of other low cost alternative fuels, a compelling incentive to burn much cheaper wood in place of oil. The result has been a near doubling over roughly the same period in the amount of winter residential heating provided by wood burning. As a result, PM2.5 emissions have risen and air quality has deteriorated.</p>
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5 10/2/2013	<p><b>How can you definitively insist that wood is the largest source of PM2.5 in the Fairbanks area when it is known that coal and diesel are both contributors to PM2.5 and both of these source fuels are used in higher amounts than wood ? Only 12-15% of homes in Fairbanks use wood as a primary heat source, 85% use diesel and the power plants use diesel and coal.</b></p> <p>On average wood is 500 times more polluting than fuel oil (from local and national wood device heat testing and EPA AP-42 research studies on wood devices). Even though a higher percentage of homes use fuel oil, the burning of wood as either a primary or supplemental heat source has a greater contribution to the area's PM2.5 than fuel oil. Measurement studies in the Fairbanks area have shown that 60-80% of the PM 2.5</p>
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measured on the filters at the monitor sites is from wood burning, with an even higher percentage contribution from wood burning at some monitor locations. You can access EPA's AP-42 emission web site at: <http://www.epa.gov/ttn/chief/ap42/ch01/index.html>

### Enforcement Questions

1 10/2/2013	<b>Why do curtailments only apply to wood burners? What about other polluters?</b>
<p>The Borough and department are looking at all sources of PM2.5 in the development of the air quality plan. The electrical generation plants fall under a different set of regulations and do have requirements they must meet through their air permits. These plants have controls for particulate matter in place, but are being evaluated to determine whether additional controls are reasonable and feasible to assist with bringing the non-attainment area into compliance. Any additional control requirements will be accomplished through the State Implementation Plan and ultimately their air permits. The largest unregulated source of PM2.5 in the non-attainment area is residential heat sources. The wood heat sources have been found to contribute 60-80% of the PM2.5 at the air monitors so these regulations focus on, and address emissions from, the wood heat sources. And as mentioned above, on average wood is 500 times more polluting than fuel oil (from local and national wood device heat testing and EPA AP-42 research studies on wood devices). Additional information on air permits is available at <a href="http://dec.alaska.gov/air/ap/mainair.htm">http://dec.alaska.gov/air/ap/mainair.htm</a>.</p>	

2 10/2/2013	<b>We need policies that can be enforced. How will you enforce regulations being proposed? The 'enforcement' options are voluntary – this isn't enough!</b>
<p>The Department of Environmental Conservation Division of Air Quality will use the compliance and enforcement tools for which it is allowed under state statute. The Division has not been given the authority in statute by the legislature to issue administrative penalties for violations of Alaska environmental laws. This means the Division must use tools like written notices of violation, compliance agreements, or in rare cases civil court actions. In most cases, the department finds compliance can be achieved through assisting businesses and individuals in understanding the regulatory requirements and how they can comply.</p>	

3 10/2/2013	<b>What will you do about existing outdoor boilers that are polluting our neighborhoods?</b>
<p>In the event of complaints about specific outdoor boilers, DEC air quality staff will investigate those complaints and work with the boiler owners and operators to ensure compliance with regulations. DEC uses the administrative compliance and enforcement tools for which it has been granted authority through state statute in implementing the proposed state regulations. In most cases, the department finds that compliance can be achieved through assisting businesses and individuals in understanding the regulatory requirements and how they can comply.</p> <p>This past year, the Fairbanks North Star Borough has assisted many property owners in replacing outdoor wood boilers through its change-out program and appliance program, This should help reduce smoke impacts, particularly in the hot spot neighborhoods. The Borough and DEC will also continue and enhance public education efforts on best burning practices and the use of appropriate fuels.</p>	



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4 10/2/2013	<b>Why not prohibit the use of a “dirty” SFBA during AQ episodes? This would /will be the only mechanism to actually effect change in appliances in use.</b>
<p>Tiered "burn bans" are used in some other states and could provide an additional incentive for property owners to upgrade their existing heating devices with cleaner-burning units. However, the this type of wood smoke curtailment program does not have broad support within the community and raises concerns about the need to economically heat during periods of extreme cold. The department is seeking flexibility within an existing regulation that is triggered by air quality episodes. The department's proposal would provide the option for curtailment when concentrations are unhealthy for everyone. In addition, the Borough's change-out program provides incentives to replace existing, high-emitting wood heating devices.</p>	

5 10/2/2013	<b>Why are there only 2 enforcement actions? (notification and voluntary reductions). There needs to be a structure of <u>FINES</u> for infractions!</b>
<p>The Department of Environmental Conservation Division of Air Quality uses the administrative compliance tools for which it has been granted authority through state statute. The Division has not been given the authority in statute by the legislature to issue administrative penalties for violations of Alaska environmental laws. This means the Division must use other tools like written notices of violation, compliance agreements, or in rare cases, civil court actions.</p>	

### Monitoring Questions

1 10/2/2013	<b>Why are the monitoring sites not spread out more?</b>
2 10/2/2013	<b>Why are there not more monitoring sites?</b>
3 10/2/2013	<b>Are the monitoring site locations chosen based on concentrations or complaints?</b>
<p>The monitors are in locations that were deemed representative for overall air quality in the Fairbanks and North Pole areas. Because of the high cost of monitoring sites only a limited number of sites are operated. The Fairbanks North Star Borough has used a mobile site to investigate pollution levels in close to 20 locations in the non-attainment area over the last 6 years. The initial sampling locations were selected to represent a larger locality in the non-attainment area. Currently only the Watershed site location was sited based on complaints received both at the Fairbanks North Star Borough and by the State.</p>	
4 10/2/2013	<b>Are the air quality episode days going to be called based on the NP Fire Station monitor?</b>
<p>How the episodes will be called has not yet been decided. Based on the questions we are receiving on this issue, DEC thinks it will be important to include a section in the local air quality plan that would lay out the basic parameters and approach of how the department would implement an air episode and this could include: subdividing the non-attainment area into defined areas where potential episodes could be called, identifying the temperature range where a wood heater curtailment would risk safety and property (frozen pipes), identifying what meteorological data should be used and how, identifying how best to utilize the air monitors, identifying what types of exemptions to a curtailment program there should be and identifying how to implement those exemptions. While the outcome of this regulation process is not yet known, over the next</p>	



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few months, the Division of Air Quality will work to analyze existing data and develop a draft approach for air episodes that can be included in the local air quality plan. This plan would then be released for public review and comment in the next phase of the air quality planning process.

5 10/2/2013	<b>Why is there no monitor close to the UAF power plant? One can see the plume impact the neighborhood around the plant.</b>
Sampling occurred in some of the neighborhoods close to UAF. But modeling results show the UAF power plant contributes only a small amount to the PM2.5 concentrations on the ground. The Fairbanks North Star Borough and DEC decided not to place a monitor right next to UAF due to these modeling results and also limited testing resources.	

6 10/2/2013	<b>Why not use one or more FNSB buses to carry the 'sniffer' equipment around? Would have consistent routes and times, and cover more area, so would have real data to compare.</b>
The sniffer vehicle is a specially equipped vehicle solely used for sampling. While using school buses or FNSB Transit buses sounds like a good idea and would increase the data collection, the required modifications to the buses and the additional staff needed to operate the equipment is cost prohibitive.	

### Public Hearing Questions

1 10/2/2013	<b>When can people sign up to testify, that morning?</b>
Anyone wishing to testify at the hearing may sign in to do so at the time and location of the hearing. Please note that testimony at the hearing will not be treated any differently than comments submitted in writing. Please see the public notice available at: <a href="http://dec.alaska.gov/air/anpms/comm/fbks_pm2-5_proposed-regs.htm">http://dec.alaska.gov/air/anpms/comm/fbks_pm2-5_proposed-regs.htm</a>	

2 10/2/2013	<b>If there are more people to comment at the end of the public hearing (1:30 pm) will the session be cut off or continue?</b>
The public hearing will continue until everyone who is present before 1:30 pm has an opportunity to comment.	

### Website Suggestions

1 10/2/2013	<b>The emissions of point sources in tons per year should be shown on the website, including:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="padding: 2px;">○ power plants – UAF, Aurora, Eielson, Ft. Wainwright, GVEA</td> </tr> <tr> <td style="padding: 2px;">○ refinery</td> </tr> <tr> <td style="padding: 2px;">○ other large facilities / point sources such as</td> </tr> <tr> <td style="padding: 2px;">    ▪ hospital</td> </tr> <tr> <td style="padding: 2px;">    ▪ other large oil heated buildings</td> </tr> </table>	○ power plants – UAF, Aurora, Eielson, Ft. Wainwright, GVEA	○ refinery	○ other large facilities / point sources such as	▪ hospital	▪ other large oil heated buildings
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2 10/2/2013	<b>Compare above to estimated emissions from vehicles, and home heating with wood, oil, coal</b>					



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All these items will be included in the air quality plan and will be available for public review and comment in the next phase of the air quality planning process.

