DRAFT

FNSB Community Campaign to Reduce Woodsmoke Pollution Through Voluntary Measures: A Proposal to Improve Woodburning Efficiency, Reduce PM $_{2.5}$ Emissions, and Minimize Regulatory Intervention

INTRODUCTION

We, the undersigned, a coalition of individuals, organizations, and businesses, are committed to improving the air quality in our community. We also value the economic, environmental, and life style benefits of using wood to heat our homes and business places. Portions of the Fairbanks North Star Borough have been designated a non-attainment area for PM2.5 pollution by the EPA. This requires the Borough, in conjunction with the State of Alaska DEC, to submit a State Implementation Plan (SIP) to the EPA before November 2012. The SIP will need to include measurable, enforceable steps the Borough will take in order to achieve attainment by 2014. These measures are likely to include prescriptive regulations that will impact local burning of wood for heat. Our group began meeting with the objective of finding ways to improve air quality and meet EPA standards without resorting to onerous prescriptive regulations or sacrificing residents' ability to heat their homes efficiently and economically with wood.

We reviewed information from the Borough's Air Quality Department, industry trade associations, the Cold Climate Housing Research Center and others with expertise in environmental monitoring, pollution control, and wood stove technology. We also considered the many qualities that make the FNSB a unique and rewarding place to live, among which rural activities such as heating with wood figure prominently. And, lastly, we bore in mind the destructive potential that an unpopular regulatory program aimed at regulating an important and cherished lifestyle—the wood stove — would inflict on our community.

THE PROBLEM

1. PUBLIC HEALTH

This is primarily a public health issue. Recent medical studies have implicated chronic exposure to fine particulate air pollution in premature death, cardiac and respiratory illness, and other health problems, prompting the EPA to tighten national air quality standards in 2006.

Data collected by the borough's air quality monitoring department confirms the presence of elevated levels of airborne fine particulates that routinely exceed EPA allowances during the winter in even moderately densely populated areas of the borough, as delineated by the non-attainment area map. The magnitude and consequences of this health problem may not be widely understood or accepted by the general public, increasing public resistance to regulatory measures designed to improve the situation.

2. EPA SANCTIONS

Failure to comply with EPA air quality standards will result in costly economic sanctions by the Federal Government. If the Borough does not develop measures to curb PM2.5 levels, DEC is likely to do so in a manner which severely restricts local use of wood for heat. Thus, maintaining the status quo is not an option, and collaboration between the borough government and borough residents seems to us to offer the best opportunity to develop moderate solutions that both clean up our air and leave open options for burning wood cleanly and efficiently.

Implementing a prescriptive program to comply with a federal mandate will be relatively difficult and expensive because there are a large number of sources each emitting a comparatively small proportion of the total pollution, rather than a relatively few sources each contributing a significant amount to the total.

Voluntary, incentive based programs coupled with comprehensive education programs have been successfully employed in other communities to reduce emissions from wood smoke. (E.g. Keene, N.H., Libby, Mont., Sacramento, Ca.)

3. WOOD BURNING

While there are many sources of fine particulate pollution, wood smoke from wood stoves and wood-fired hydronic heaters contribute a large proportion of total PM2.5 emissions in the FNSB, particularly on a per capita basis. This is especially true for households using older and non-EPA-rated wood stoves and boilers and in situations where green wood is combusted and/or stoves are “damped down” excessively. Recent increases in heating oil prices have caused many more households to turn to wood for heat, exacerbating the problem.

However, in addition to these negative effects, heating with wood also has a number of desirable characteristics that must be considered:

--Continuing improvements in wood heating technology mean that modern, EPA rated wood stoves and boilers operated in accordance with “best practices” are relatively clean burning, and produce many times less pollution than older and/or poorly operated units.

--Wood provides an affordable heating alternative in the face of unpredictable and sometimes drastic increases in the cost of heating oil.

--Burning wood for space heating can be environmentally friendly. Wood is a sustainable resource, and, unlike the combustion of fossil hydrocarbons, burning wood does not contribute to net carbon dioxide increases in the atmosphere.

--Wood produced locally provides both independence for the wood burner/gatherer, and local interdependence as dollars spent on firewood, chainsaws, woodstoves, chimney cleaning, etc., stay largely in the community.

--Heating with wood is a traditional, popular lifestyle among many Alaskans, and attempting to regulate this practice is likely to engender strong resistance unless done carefully and in a constructive fashion.

CONCLUSIONS and RECOMMENDATIONS

Residents of the FNSB have a problem: We are poisoning our air, thereby putting ourselves at increased risk of illness, especially the elderly, those ill, and our children. Our cherished woodstoves—the very symbol of domestic security and independence for many Alaskans—are largely at fault, as are poor burning practices. Residents have entrusted the FNSB to come up with a solution to the problem, but are not likely to accept heavy handed or overly intrusive measures without resistance. Fortunately, we believe that there is room for both improvement in our air quality and for many residents to continue burning wood—albeit doing so responsibly.

We believe that a combination of public education about health and efficiency issues, and fiscal incentives to encourage use of high efficiency stoves and responsible burning behavior can be implemented quickly and is likely to have rapid beneficial results. We propose that the FNSB engage with the public and other stakeholders to develop rapidly a broad based, multifaceted outreach, education, and incentive program to reduce wood smoke emissions.

Burning clean means burning efficiently. The economic arguments—in terms of both dollars and labor saved—are compelling even without reference to the public health benefits. Cleaning up our wood smoke can be a win-win solution, with a number of beneficial side effects, as well. In the long term, education and self interest are likely to promote a changeover to cleaner technology. In the short term, however, many of us will require additional prompting, such as economic incentives to trade in old stoves for newer models and to undertake home energy efficiency improvements **.**

A voluntary approach offers many social benefits when compared to a “top down” regulatory approach. These benefits include, but are not limited to:

-- Increased community “buy-in” and cohesiveness.

-- A voluntary program can be started quickly and evolve in response to changing needs.

-- A voluntary program is likely to be more economical for both FNSB and residents and can spur modest economic development.

-- Voluntary measures can be superseded incrementally by regulations, if and when needed; the reverse is not true.

-- Even if voluntary measures do not prove entirely adequate to reach attainment prior to implementation of the SIP, such a program would demonstrate the borough’s good faith efforts to accommodate both public health needs and the wood burning constituency, and might reduce the severity of regulatory measures that may need to be implemented in order to come into attainment.

Given our non-attainment EPA status, the FNSB is obliged to move forward with a State Implementation Plan (SIP). However, we believe it is possible and preferable to begin a voluntary wood smoke abatement program immediately, with the goal of attaining EPA targets before the SIP must be implemented in a best case scenario or, at a minimum, significantly reducing PM2.5 levels by the time that SIP provisions are enacted, such that they can be less restrictive and more quickly effective.

A public education program designed to reach a high percentage of borough residents should have at minimum the following objectives:

1. Describe the health impacts of not curbing PM2.5 levels.
2. Describe the economic costs/sanctions EPA can impose if we do not act.
3. Describe the economic benefits of upgrading to a more efficient stove, and/or operating it in a more efficient manner, both in terms of dollars saved and cords of wood not handled.
4. Describe the economic benefits using wood heat has for the local community
5. Explain that while these educational and voluntary programs are at work, the Borough must still develop the SIP, which will very likely include mandatory regulatory measures unsavory to those who burn wood for fuel. We must explain the only way we can avoid such measures is by broad compliance with and attention to the voluntary programs being promoted at the same time. To the extent we are successful, the SIP will be less onerous. Also, the SIP should be developed with a progressive approach in mind, whereby no prescriptive regulations are implemented if the community attains PM2.5 standards voluntarily, and increasingly stringent regulations are added progressively and only as needed. In short, the community is rewarded for voluntary improvement, and regulations are implemented only to the extent they are needed.
6. The program should be developed and initiated as quickly as possible, in order to begin to take effect this heating season, and so as to have the greatest possible impact before the SIP must be implemented.

Other SUGGESTIONS

1. Community coordinator

Immediately hire a community coordinator to identify and involve all stakeholders in a broad based multifaceted program to begin community education projects through major media (television, radio, newspaper) as well as local fire departments, GVEA, churches, medical offices and other community organizations, promoting ‘best practices’ for heating system operation generally, and solid fuel heating appliances specifically.

2. Promote entrepreneurism

Encourage individuals with a stake in wood heating market to form an association to promote best practices, and certify professionals in the manufacturing, selling, installing, servicing and using solid fuel heating appliances or supplying fire wood. Locally built and tested wood burning devices? ? (Interior Wood Burners Association?)

3. Wood stove changeout program

Provide incentives for citizens who use solid fuel heating appliances replace inoperative catalysts, purchase new or upgrade to EPA-certified devices, and to follow best operating practices when using them through educational and voluntary programs. These efforts would be enhanced by existing economic incentives such as Federal and borough tax credits/rebates for trading out inefficient stoves, etc.

Request additional financial assistance from the state and federal governments, HBPA, vendors and others to help residents upgrade their solid fuel heating appliances.

Require recipients receiving such financial assistance to attend a free course in proper wood burning techniques to demonstrate an awareness of and willingness to comply with best operating practices related to those appliances. Said courses could be available to the general public as well at no charge

4. Fuel availability

Improve accessibility to borough land suitable for harvesting fuel wood, and work with State and Federal government agencies toward the same goal. Work with DNR Division of Forestry to develop long term, sustainable supply of fire wood for borough residents.

5. Fuel quality

Burning green or unseasoned wood with a moisture content greater than 20% has been identified as the single largest contributing factor in PM2.5 pollution. Decreasing the volume of green wood burned can have a large impact on our air quality. Innovative solutions to improve this problem should be explored, including the following:

--publicize the importance of burning only dry wood and attending to wood supplies early during the summer so fire wood has time to dry fully; wood harvested in the fall is not suitable for burning the following winter.

--investigate/promote construction of commercial fire wood kilns to season fire wood.

--create distribution “yards” close to residential areas where split, seasoned firewood can be purchased at any time of the year. More economical fire wood (e.g., green wood in log form) can be purchased only during the spring, incentivizing early season attention to wood supplies; DNR firewood permits could be discounted for spring/early summer harvest; proof of proper wood storage/facilities could increase borough tax rebate (with or without wood stove changeout).

--encourage local businesses/individuals to create low-cost wood sheds.

Actively monitor the various proposals to increase the supply of wood pellets, natural gas, and other clean burning fuels to our community or develop renewable sources of electrical energy, and advocate for those proposals that appear to be most cost effective.

6. Heating efficiency

Continue, in conjunction with other construction related associations, to support and promote home weatherization and energy efficient construction and remodeling

techniques for existing and new buildings to reduce the energy used and the emissions generated by them.

7. Air quality monitoring

Work with media to alert the public to the conditions conducive to non-attainment levels of PM2.5 and encourage residents to limit wood stove usage when possible during those times. They should also suggest ideas to reduce energy usage and publicize progress toward attainment.

Use attainment of Emission Standard as a measure of success of the project to reduce energy consumption.

Take care to distinguish between the area-wide goal of meeting federal air quality standards and incident specific complaints related to individuals operating solid fuel burning appliances in a manner that creates a nuisance for their neighbor. Continue its air sampling and analysis program to identify fine particulate contamination sources more precisely and to determine which mitigation efforts appear to be producing positive results. Although this is beyond the scope of this document, the amount of fine particulate contamination from other sources such as refined petroleum used for space heating, waste oil burners, industrial emissions or vehicle engines cannot be accurately quantified at this time due to limitations in the atmospheric testing/modeling technology currently available. Nevertheless, it is reasonable to assume that they are contributing to the total amount of particulates detected and must be studied more and addressed as new information comes to light.

8. Time sensitivity

In order for a voluntary program to achieve its greatest potential, we stress that planning and early implementation of the program be started immediately, and should proceed simultaneously as the SIP is developed in conjunction with DEC. Funding and outreach efforts must be sufficient to reach, inform, and provide compelling incentives for borough residents to participate. Regulatory measures developed in the SIP should be enacted only to the extent necessary should voluntary measures fall short of attainment.

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