

# **SICKENED BY SMOKE: THE HARM OF PM 2.5 POLLUTION TO FAIRBANKS NORTH STAR BOROUGH RESIDENTS AND THE OPPORTUNITY FOR VOTERS TO HELP**

## **Report prepared by:**

[cleanairfairbanks@gmail.com](mailto:cleanairfairbanks@gmail.com)

<http://cleanairfairbanks.wordpress.com>

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## **INTRODUCTION**

Extreme levels of fine particle air pollution matter (PM 2.5) harm public health in the Fairbanks North Star Borough. Residents in the Borough have been enduring rising levels of PM 2.5 winter pollution since 2008. During each of the last two winters the downtown monitor measured 54 and 41 days when PM 2.5 levels are UNHEALTHY FOR SENSITIVE GROUPS ( $\geq 35.5$  micrograms/cubic meter or  $\mu\text{g}/\text{m}^3$ ) or UNHEALTHY ( $\geq 55.5$   $\mu\text{g}/\text{m}^3$ ), which is unsafe for everyone. The downtown monitor underreports far higher winter smoke conditions in hot zone neighborhoods. Many residents are unaware of the health impacts from PM 2.5. Lacking effective reporting of actual concentrations, residents are unable to know when they need to take precautions to protect themselves.

Responsible action to reduce winter PM 2.5 air pollution is clearly needed now. Residents in neighborhoods close to area sources using highly polluting devices (e.g. outdoor hydronic heaters) or burning wet wood and coal have increased risk of permanent physical damage and reduced life expectancy. Public awareness of the problem has been rising, tracking with the steep rise of smoke concentrations since 2008. Residents' repeated requests for responsive action to curtail the winter fine particulate pollution have not led to a single enforcement action, despite agency documentation of burning prohibited fuels and extremely high smoke opacity, and hundreds of reports of impacts to life and safety.

The lack of enforcement is not for any lack of a problem, failure to report, or difficulty identifying the emission sources. State and Borough enforcement tools, though weak, go unutilized. The elephant in the room is that agencies, administrations, and elected officials don't do enforcement because it is perceived as unpopular.

That premise, if true, is irresponsible and indefensible when children, elders, and even healthy adults are being physically damaged by winter fine particulate levels. Since when is protecting public health a popularity contest?

Further, if enforcement against smoke pollution is on hold, waiting to hear the public call for action, agencies haven't been listening to the public record of complaints.

This report documents repeated requests from residents in need. These requests contradict the perception that enforcement would be unpopular. This report also summarizes the upcoming opportunity for the public to directly establish enforceable tools and support a transition to

cleaner burning heating systems. If control of excessive smoke pollution is to be a popularity contest, tens of thousands of voters will get to be the judges.

## **EFFECTS ON HEALTH OF RESIDENTS AND VISITORS**

A quarter century of medical research has found PM 2.5 pollution is hazardous to human health, resulting in acute respiratory distress, decreases in lung function, bronchitis, asthma, cardiovascular disease, cancer, emergency room visits, hospitalization, and death.

According to the [2009 presentation by Lori Verbrugge, PhD with the Alaska Division of Public Health](#), studies show there is an increased mortality rate even with short-term exposure to PM 2.5 concentrations less than 20  $\mu\text{g}/\text{m}^3$ . “Short-term” refers to exposures of 24-hours or less. The state and federal standard for the 24-hour average is 35  $\mu\text{g}/\text{m}^3$ .

While residents are at greatest risk, every winter, October through March, visitors to our community risk damage and death from staying here just one day.

For residents, exposure is not limited to short-term. This is our home. This is where we live and work. This is where we are raising our children and hope to grow old together.

## **SMOKE IN HOMES, WORKPLACES, SCHOOLS, AND ON PUBLIC ROADS**

Residents have testified on the impacts of PM 2.5 pollution during Parent Teacher Association meetings, School Board hearings, Air Pollution Control Commission hearings, Assembly hearings, letters to the editor, online, and other public forums. The following summaries of some of their testimony describe the injury and harm to the lives of residents.

Thinking their house was on fire, residents had woken their children to flee, only to find smoke from a neighbor’s hydronic heater had been pulled inside their house through the heat recovery ventilation (HRV) system. In Moose Creek, just outside the nonattainment area, residents have evacuated their home to escape from wood and coal smoke. Multiple residents have reported being hospitalized because of exposure to wood and coal smoke. Owners renting out their home near a neighbor’s wood-fired hydronic heater returned after a year to find the walls coated with black soot. What about the lungs of the tenants?

One resident of the hot zone nicknamed “the Rectangle of Death” in North Pole testified that on days with high PM 2.5 levels he was confined to bed with heart arrhythmia. Lying there, listening to his erratic heartbeat, he had days to consider which would stop first, the smoke or his heart. This resident lives near three wood-fired hydronic heaters and several coal burners, one of which burns 100 cords of wood and unspecified amounts of coal each winter. Local air monitoring recorded the highest PM 2.5 concentrations in the borough (2,364  $\mu\text{g}/\text{m}^3$ ) near this resident’s house at the intersection of Lineman Avenue and Dawson Road. The resident, after taking steps to protect his own family by installing an air filtration system, still worries about his neighbors’ kids who have no protection at all.

Exposure has occurred when working outside shoveling the driveway, gathering grocery carts, on school grounds during recess and bus duty, and when loading orders in an equipment yard. Public and private sector employees have reported being sickened inside their workplace. Workers have stayed home, too sick to go to work. Employees working in businesses located near an individual burning coal (and possibly prohibited fuels) have been sickened and endured asthma attacks but are afraid to report complaints or ask their employer to help for fear of losing their jobs.

A teacher testified that children assembled on a playground for a fire drill looked around at the pall of smoke from nearby hydronic heaters and coal burning and asked if it was a “real” fire. Mothers testified to the school board that their children need the benefits of playing outside at recess yet children must be kept inside because of smoke in the playground. Parents and teachers are dismayed to find that the [Borough-Wide Air Quality Index](#) (downtown monitor) reports air quality as GOOD at the same time that air at the school is terrible.

Air pollution has interfered with children’s rights to receive an education. A mother of a son with congestive heart failure described how her son has been unable to attend school on days when air quality is poor. At least six asthma attacks in one school have been attributed to smoke by the school’s principal and nurse. Children who have asthma attacks at school are sent home, clearly interfering with their opportunity to learn. For dozens of smoke-filled days each winter, principals and school nurses are faced with a terrible choice: send children out to exercise to promote their physical development and ability to concentrate for learning OR keep children inside to avoid damaging them physically. Which choice isn’t loaded with risk and regret? Are principals and school nurses even equipped with the training and monitoring data to make the best choice for our children?

Exposure occurs in the school bus or family car driving to and from school and walking into the school building. Thousands of drivers and passengers traveling through miles of smoke-impacted public roads (including Badger Road, the Steese Highway, Johansen Expressway, Richardson Highway, Hurst Road, Dawson Road, and Chena Pump Road) are exposed to smoke inside their vehicles during winter months. Drivers report being unable to see through smoke plumes lying across the road. Drivers avoid smoke-impacted roads or if that’s not possible stay home, knowing that corneal abrasions or an asthma attack while driving could result in a catastrophic accident. Anticipating chronic emitters, drivers turn off their vehicle air intake vents, which may fog up the windshield. Who can know until it is too late which safety hazard—a fogged windshield or smoke in the vehicle—is more deadly?

Testimony of exposure and concern comes from residents living along the ridges and down in the Fairbanks bowl. Salcha residents driving north across the flood control project into North Pole describe encountering a wall of smoke. Attempting to leave on a flight, one resident described the symptoms he experienced loading his bags into the car because the smoke was so thick. On many winter days in our community there is no escape from the smoke except by leaving during the winter or moving. Even on the way out, the smoke gets in its final mean kick: when your house, for sale in a smoke hot zone neighborhood, gets no offers.

## MEASURED PM 2.5 CONCENTRATIONS, winters of 2008/2009 to 2010/2011

The nonattainment area of the Fairbanks North Star Borough is the only PM 2.5 nonattainment area in the state. Borough monitoring of PM 2.5 has been ongoing since at least 2003. According to the Beta Attenuation Mass (BAM) monitor located at 675 7th Avenue in downtown Fairbanks, PM 2.5 concentrations regularly reach dangerous levels each winter. Since the winter of 2008/2009, 24-hour averages have exceeded the state and federal health-based standard of 35  $\mu\text{g}/\text{m}^3$  84 times. At the downtown monitor, subdaily winter peak concentrations for 1-hour averages regularly exceed 100  $\mu\text{g}/\text{m}^3$ , with an all-time high of 290.9  $\mu\text{g}/\text{m}^3$  (on Tuesday, Jan. 12, 2010 from noon to 1 pm).

The downtown monitoring station is far from most area sources of PM 2.5 and the hot zones. Concentrations measured at the downtown site fail to capture higher daily averages and subdaily peaks in residential neighborhoods that are often blanketed by smoke from the burning of coal and wet wood.

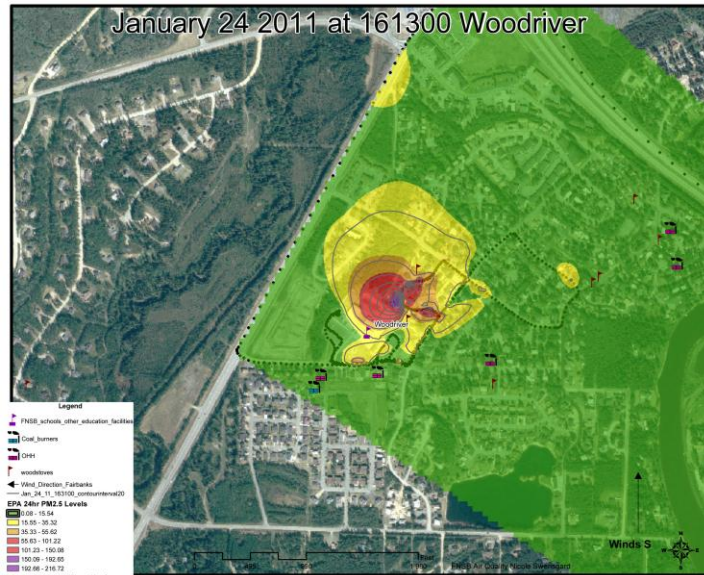
To attempt to measure the shifting winter smoke blanket over the community, the Borough uses an important tool, the instrumented “sniffer” vehicle which samples the air every two seconds. The sniffer vehicle extends the monitoring program from a handful of fixed sites to cover most of the borough population along the network of public roads. The concentrations measured represent only a snapshot at that time. Although the Borough has taken numerous runs with the instrumented vehicle, capturing smoke on a mobile monitor is hit or miss.



**Wood-fired Hydronic Heater at 58 Trinidad Drive 1,088  $\mu\text{g}/\text{m}^3$**

In the hot zone near the intersection of Palo Verde Avenue and Trinidad Drive in the University West neighborhood of Fairbanks (Woodriver Elementary School), the Borough’s instrumented vehicle recorded **1,088  $\mu\text{g}/\text{m}^3$**  (1/10/2009 at 12:26 pm). At that time, the downtown Fairbanks BAM recorded 27  $\mu\text{g}/\text{m}^3$ , which is MODERATE, not even over the state and federal standard.

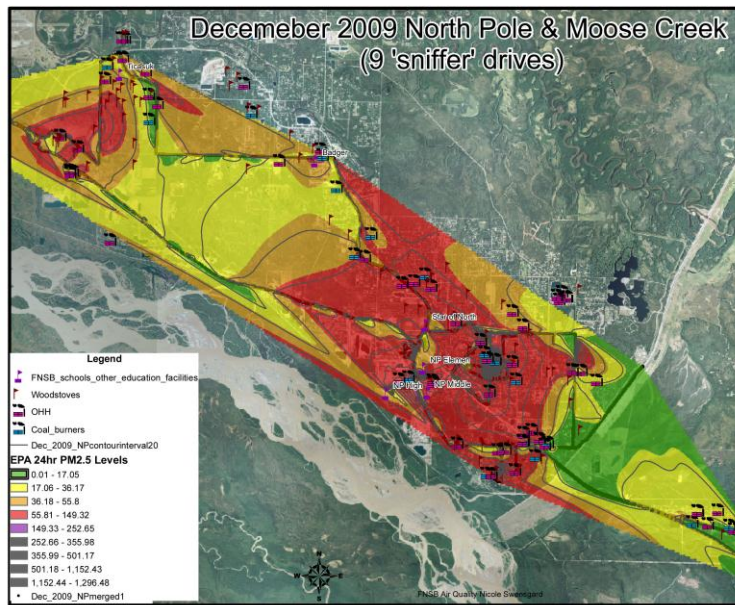
Two years later, the sniffer vehicle painted a picture of a bubble of smoke over the Woodriver Elementary School near Chena Pump Road between Audrey Drive and Palo Verde Avenue.



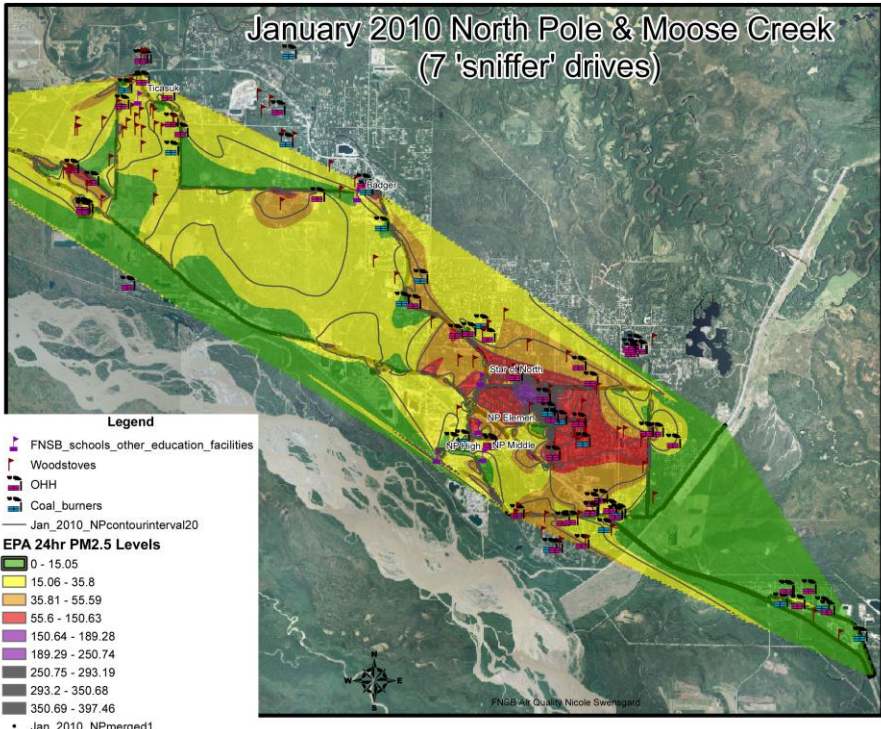
**Woodriver Elem PM 2.5 Levels Jan 24, 2011, about 4:15 pm**

North Pole residents know the story of their problem with smoke even without seeing the concentration maps.

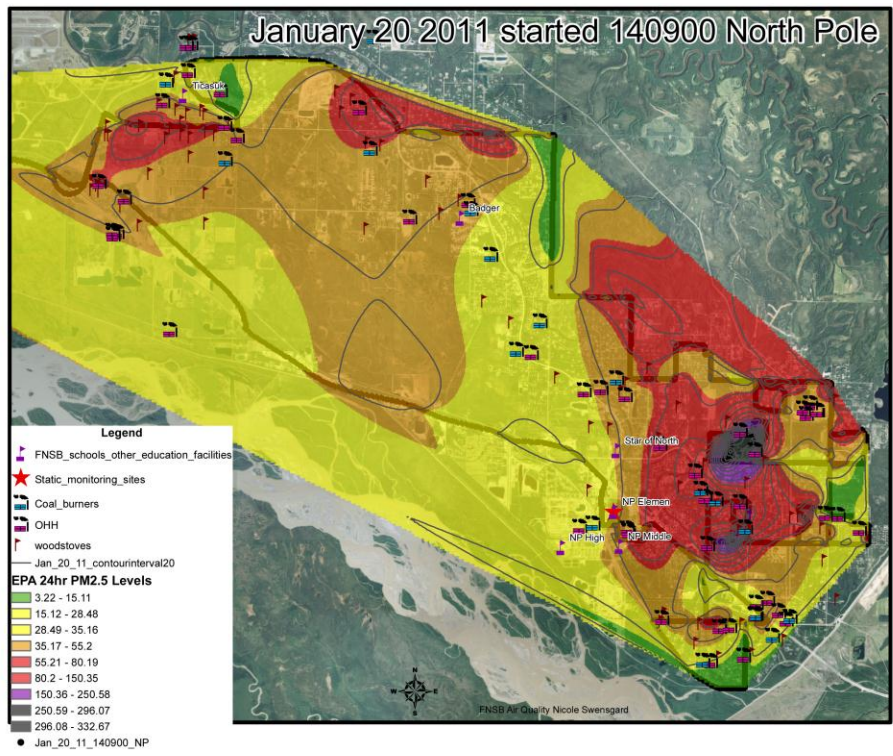
A group of neighborhoods in North Pole near Dawson Road, Lineman Avenue, Hurst Road, Mission Road, Badger Road, Plack Road, and the Richardson Highway are chronically affected by heavy smoke. So consistently is this area inundated with high winter smoke, it has been nicknamed “the Rectangle of Death.”



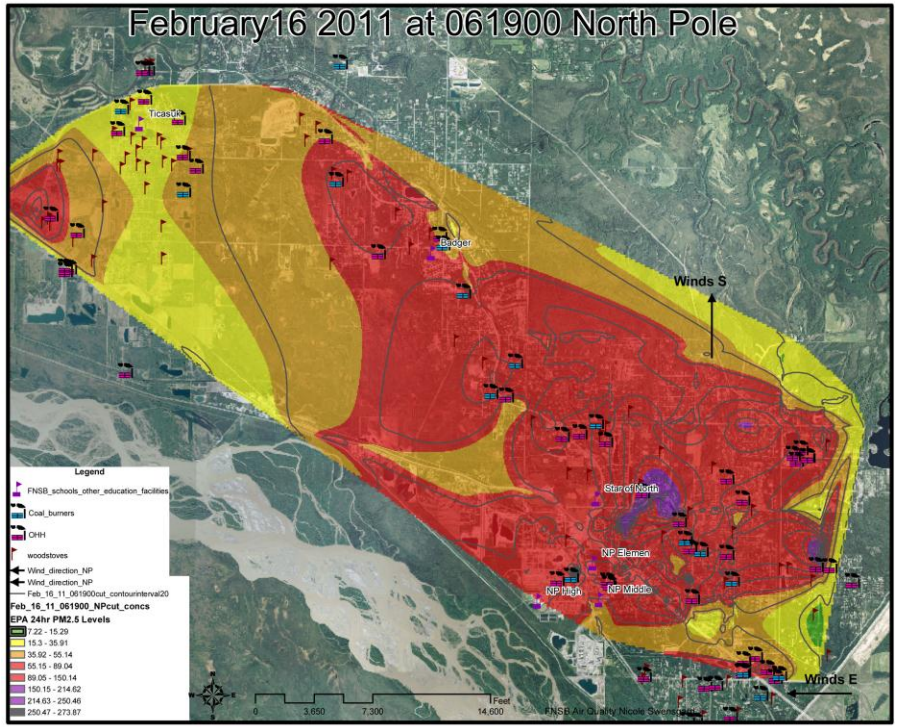
**North Pole and Moose Creek PM 2.5 Levels Dec 2009**



North Pole and Moose Creek PM 2.5 Levels Dec 2010



North Pole PM 2.5 Levels Jan 20, 2011, about 2 pm



North Pole PM 2.5 Levels Feb 16, 2011, about 6:30 am

It was in North Pole’s Rectangle of Death that the sniffer vehicle measured the highest recorded concentration of fine particulate pollution in the borough. In the hot zone near the intersection of Dawson Road and Lineman Avenue, the instrumented vehicle measured  $2,364 \mu\text{g}/\text{m}^3$  (12/8/2009 at 11:30 am). The downtown Fairbanks BAM recorded  $52.4 \mu\text{g}/\text{m}^3$  at that time, which is UNHEALTHY FOR SENSITIVE GROUPS.



Plume at Dawson Rd & Lineman Ave  $2,364 \mu\text{g}/\text{m}^3$

Summer wildfires are also a source of dangerous PM 2.5. Most wildfires are impossible to prevent and challenging to control. Lightning ignites the black spruce, an abundant vegetation type in the Interior—ecologically considered a “fire-controlled” ecosystem. During 2004, the smokiest summer in more than a decade, the region experienced 41 days of elevated PM 2.5, see [2004 Wildland Fire Season Summary](#).



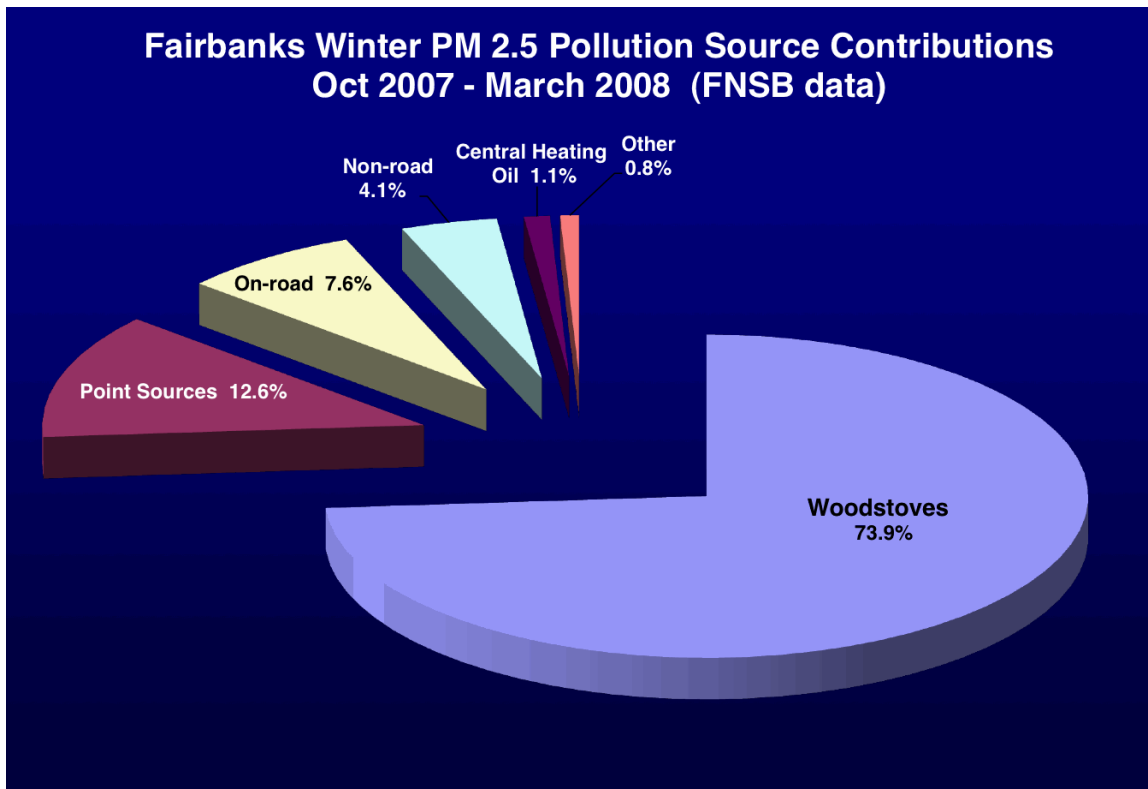
**Wildfire: South Fairbanks, June 28, 2004, approx.. 900  $\mu\text{g}/\text{m}^3$**

An average summer has only a few days with elevated concentrations. The “new normal” winter has more than 40 days of elevated PM 2.5. During the winter of 2009/2010, 54 days above 35  $\mu\text{g}/\text{m}^3$  were measured downtown. PM 2.5 harms health regardless of the origin; however, the high winter concentrations are chronic, preventable, and unregulated.

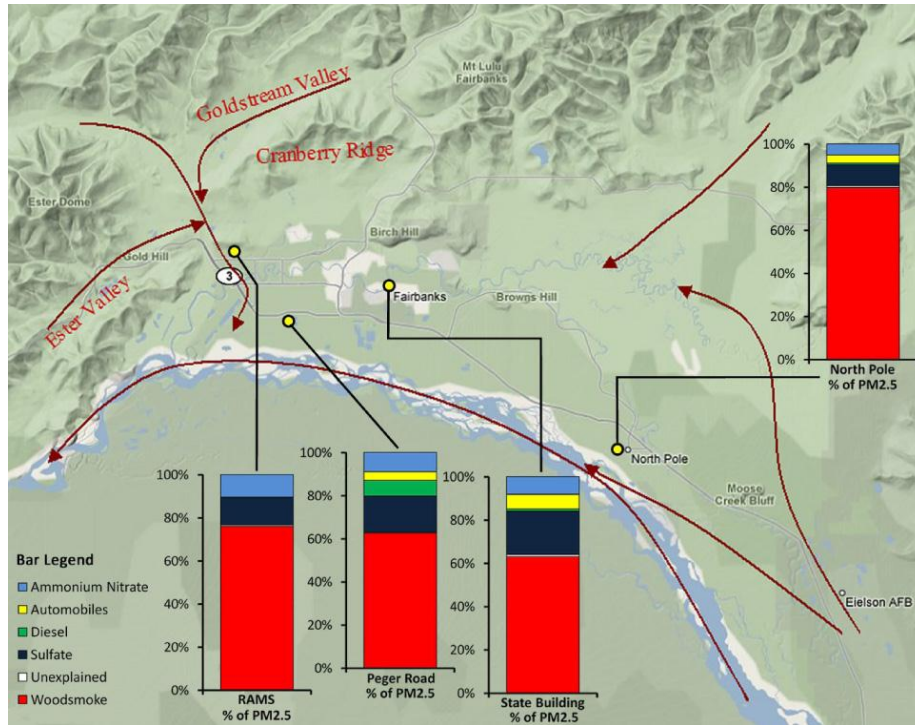


## SOURCE CONTRIBUTIONS

The following pie chart shows PM 2.5 source contributions during the winter of 2007/2008 collected on the downtown (675 7th Ave) monitor's filter paper. Nearly 75 percent of the PM 2.5 in our community's air is from burning wood for fuel. The contribution of fine particulate pollution from the incomplete combustion of wood is double that from all other sources combined.



The following map, showing the Fairbanks bowl (from Ester to North Pole) with four bar graphs, is from the Quality Fairbanks webpage on [Science](#). Woodsmoke is the source of over 60 percent of the PM 2.5 particles found at these four different monitoring locations with the highest, 80 percent, found in North Pole. The four monitoring locations do not include the hot zones of Woodriver Elementary or North Pole's Rectangle of Death, where the contributions from woodsmoke would be much higher.



Some have argued winter PM 2.5 problems are caused by the power plants or motor vehicles. In truth, power plants, motor vehicles, space heating with fuel oil, and other minor sources do contribute to the problem. Yet the primary source, greater than 60 percent and as high as 80 percent in parts of our community, is from burning wood. Emissions from the second and third largest sources of PM 2.5, power plants and automobiles respectively, have already been reduced through regulation. Pursuing relatively minor sources while ignoring the primary contributing source would be like picking up pennies when silver dollars can be had.

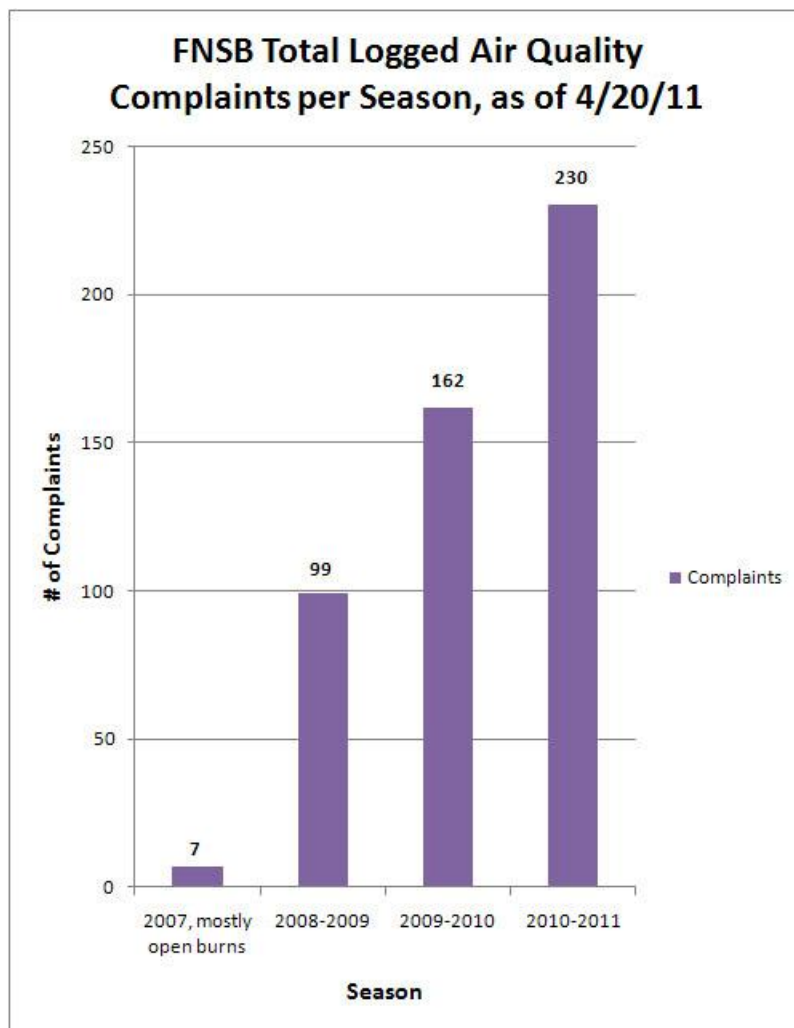
The only way to significantly reduce winter PM 2.5 pollution levels is to tackle woodsmoke at its source.

## COMPLAINT STATISTICS, 2007 to April 20, 2011

The above cited monitoring data does not convey the extent of the health toll on residents in our community. Public concern about fine particulate air pollution, as represented by the growing number of complaints reported to public agencies, documents an epidemic.

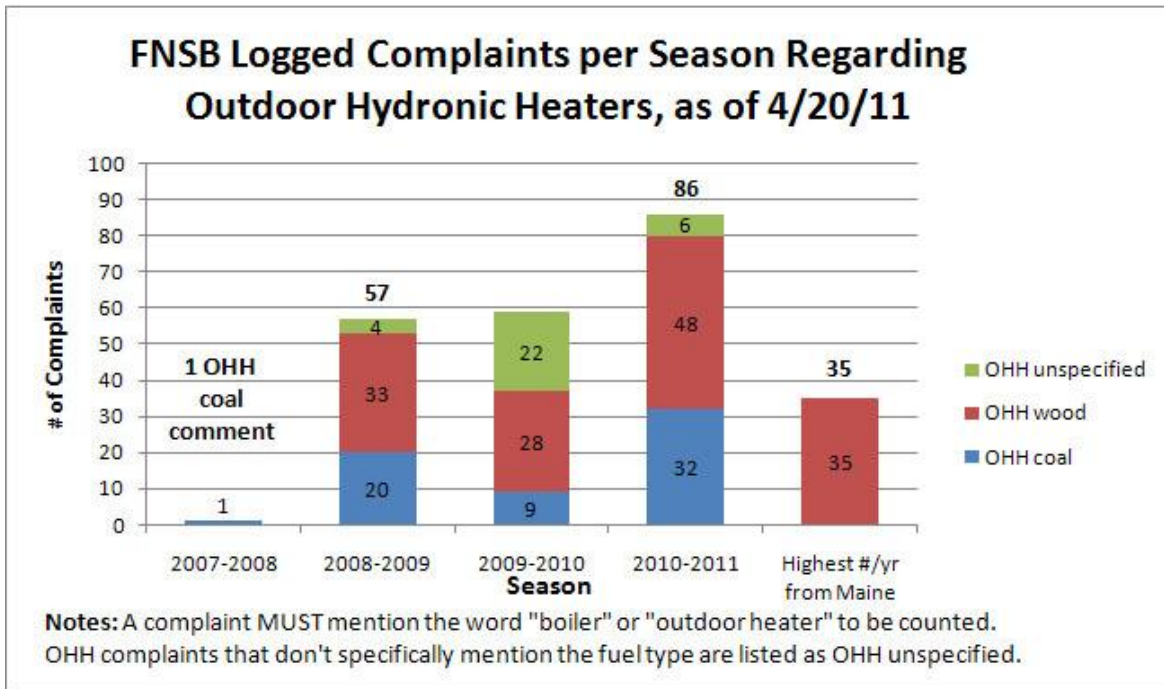
The total number of complaints reported to the Borough exceeded 500 by April 2011.

Only a few of these complaints were originally reported to the State of Alaska. Many affected individuals never report any complaint. Therefore, these reports vastly underreport actual impacts and damage to health.



A significant number of these complaints are against wood-fired hydronic heaters and coal burning appliances in residential neighborhoods and near schools.

The Fairbanks North Star Borough has recorded more than double the number of complaints against outdoor hydronic heaters in a year than the highest number recorded in a similar period in the entire State of Maine.



For comparison, Maine is 4 times the area of the Fairbanks North Star Borough with 13 times the population.

That residents are enduring significant impacts from PM 2.5 cannot be denied. **Citizens are sick of the smoke, literally.**

### **PUBLIC RECORD OF LIFE AND SAFETY IMPACTS FROM PM 2.5**

Statistics alone cannot tell the story of harm from uncontrolled wood and coal smoke in our community. A related report from the public records of the Fairbanks North Star Borough documents over 40 pages of smoke impacts to health filed by residents. These are the stories in their own words of how smoke is harming their lives.

Review the report: [230 Reports of Life and Safety Impacts from PM 2.5 Pollution](#), May 2008 to May 2011.

Complaints without descriptions of health impacts, unless occurring at a school, have been excluded from this report. Only a few of these are from the state's records, and therefore underreport total citizen complaints of life and safety impacts during this period in the Borough.

Also not included are the thousands of residents and visitors who were affected but did not file reports.

These health effects are what would be expected in a community with high concentrations of PM 2.5. Few communities within the United States endure such high concentrations and ours has the highest in the nation on many days each winter.

Pleas for help come from every quarter. Teachers ask for help on behalf of their students, mothers for their infants, parents for their children, adults for their older parents, husbands for wives, wives for their husbands, and neighbors for one another. It is impossible to read the complaints and fail to see the deep compassion for those who are suffering and their desperate appeals for help. This community cares for one another and responds when others are hurting.

### **UNAWARE OR UNABLE TO AFFORD TO REDUCE EXPOSURE**

**Residents are sick of the smoke, literally.** However, many residents are still unaware or heedless of the grave harm of the high PM 2.5 levels. Even when they know the risk of exposure, residents are often unable to afford the costs to protect themselves, their family, and employees.

On days when the [Borough-Wide Air Quality Index](#) (reported only from the downtown monitor) shows unhealthy levels, coaches still take their teams of young athletes outside to train in the smoke. Adults responsible for the care and safety of children are uninformed that PM 2.5 levels in some neighborhoods and schools are frequently an order of magnitude higher than what is reported on the Air Quality Index. Consequently, children are sent outdoors in UNHEALTHY concentrations of smoke for recess, exercise, play, athletic practice, and competitive events by their principals, nurses, coaches, and parents. Children come from other communities to compete here indoors, such as at swim meets, and outdoors, such as during the upcoming 2014 Arctic Winter Games.

Residents protect themselves, their families, or employees by installing air filtration. However, this is expensive and has limited effectiveness. To attempt to reduce smoke levels inside one school, the school district spent \$44,000 (which had been allocated for education) to install a particulate filtration system. Teachers continued to report smoke in the halls and adverse health effects after this installation.

Take just one step outside the door and filtering of indoor air even to expensive high-efficiency particulate air (HEPA) standards does not prevent exposure. Being trapped indoors is not a reasonable or healthy solution to months of winter air pollution.

On the advice of their physician, families have moved away to protect their children from untreatable chronic bronchitis and asthma attacks triggered by the smoke. But this option is costly. Lovely homes in smoke-choked neighborhoods go unsold.

Avoiding activity, installing filters, or moving are not prevention methods. They are ways we may be able to change our own behavior to accommodate another's misbehavior. Only one

method, moving, actually eliminates the harm but is only protective for the individuals who relocate.

Whose job is it to protect a workplace or a child's bedroom from smoke? Certainly employers and parents are responsible. But what if the employer or parents don't recognize the harm or are economically unable to keep out the smoke? The exposure and damage goes on just the same, regardless of whether the risk is recognized or not. Protecting public health from a known agent of harm is the duty of government agencies, and ultimate responsibility belongs to the source of the emissions.

## **FOLLOWING PLUMES BACK TO THE SOURCES OF HARM**

Prices of heating oil, the primary fuel for residential and business space heating, spiked in the summer of 2008 and have risen 70 percent since 2007. These rising prices and a regulatory void made Interior Alaskans ripe targets for unscrupulous salesmen. Instead of promoting energy efficiency and weatherization, inefficient wood-fired hydronic heaters and coal burning appliances were pitched as the way out of the high cost of heating larger homes, apartment buildings, duplexes, businesses, and even churches. Fear of sky-high heating oil price increases and the impending six-month winter season were used to panic residents into purchasing and installing redundant \$5,000 to \$15,000 (or more) systems in urban and suburban neighborhoods. The volume of wood required or verified emission rates were poorly disclosed to prospective buyers. The marketing hype for these inefficient heating systems sent regional air quality (a problem for decades due to prolonged, intense air inversion) into a tailspin beginning in the fall of 2008.

A winter's worth of wood, 15, 30, even 100 cords, to feed a hydronic heater is challenging enough. Splitting and drying the wood are often considered unnecessary and impracticable steps. A hydronic heater's large-doors and firebox are well-suited to long, 4-foot unsplit logs. The sheer effort of it makes switching over to burning noxious coal seem an attractive alternative. Unsplit birch cannot dry due to the waterproof bark and [contains over 80 percent moisture content](#). Manufacturers market the labor saving benefits of not having to trouble with splitting the wood; one line is called Greenwood. Various companies market mechanical log lifters. Available on the market are top loading hydronic heaters which after being filled by a front-end loader, burn for days—an added convenience feature used to promote sales.

Adding insult to injury, the large doors and firebox of outdoor hydronic heaters invite misuse as an unregulated, low-temperature incinerator. Residents report extremely noxious smoke from the burning of trash, plastic, animal manure, railroad ties, creosote-treated power poles, and even rubber tires. Borough code provides for a \$30 fine for burning prohibited fuels such as these but has never been used. Toxic smoke from "if it fits, it burns" misuse has been attributed in the hospitalization of at least one resident.

The State of Alaska lacks authority to levy fines and can only take violators to court one-by-one making enforcement slow to effect and cost prohibitive to apply. The Alaska Department of Environmental Conservation (ADEC) has written two Nuisance Abatement Orders to two different emitters in the Borough. During the last three winters while elementary students and

their teachers were chronically exposed to smoke inside their classrooms, ADEC sent the owner a request, called a Compliance Letter, followed 23-months later by a Nuisance Abatement Order on March 10, 2011. Following the issuance of the order, complaints continued but ADEC has taken no enforcement action to stop the smoke. Across town, after months of smoke along a mile of the Steese Highway, ADEC wrote a Nuisance Abatement Order on January 26, 2011 to that emitter. After that order was issued, complaints reported continued excessive emissions, including the stench of burning rubber, from this source and were even observed by state enforcement officers. six months later, no action has been taken and the excessive smoke continues into July.

In summary, neither the Borough nor the State DEC has ever levied a fine or penalty regardless of the amount of harm to individual's health or contribution to our ambient winter PM 2.5 nonattainment. Given the absolute lack of regulatory action, over-regulation cannot be a legitimate concern, at least in regards to injurious smoke from the burning of wet wood, coal, and prohibited fuels in the Borough.

### **PROPERTY RIGHTS CANNOT SUPERSEDE RIGHTS NOT TO BE INJURED**

The cost of a taxi fare cannot be used to justify drunk driving. Similarly, high fuel prices cannot be used to justify harming others with smoke. Economic reasons do not justify harming others. Medical expenses have risen at an even faster rate, but more to the point, no amount of gain gives one person the right to hurt a neighbor, a neighborhood, or an entire school of teachers and children. That emitters acknowledge their benefit as their actions cause harm to others may establish motive that the injurious smoke was not an accidental emission but is the everyday routine and done knowingly.

Saving money is laudable. Yet, the "saving money" justification for injurious emissions has been repeated so often it almost makes it sound like a plausible excuse for smoking out entire neighborhoods and our community as a whole. But it's not. "Keeping warm" has even been used to excuse the burning of construction debris, treated lumber, railroad ties, plastic, rubber, low-rank coal (which may be lignite or even peat), and, all too frequently, unseasoned wet wood. One state enforcement officer reported back to a complainant, "It's just a kid trying to stay warm." What about our kids and the thousands of others that one "kid" was harming with his smoke? Do our rights not to be injured and damaged not count?

The owners of wood-fired hydronic heaters are not poor. Given the \$6,000 to \$15,000 cost of the unit and plumbing, anyone who has the cash to purchase a wood or coal-fired hydronic system cannot be considered poor. Most hydronic heaters are found at large houses, where motorhomes, expensive boats, enclosed snowmobile trailers, and satellite dishes are in abundance. One resident even bought a boom truck and Skid Steer to feed their outdoor hydronic heater.

Review the report: [Privileged Pollution: FNSB Assessed Values, Lot Sizes, and Photos of Properties with Wood-fired Hydronic Heaters and Coal Burning Appliances](#), February 2011.

It is a mean myth to attribute the problem to low-income cabin-dwellers just living out their Alaskan dream. That fable couldn't be farther from the truth. Cabin-dwellers—those who heat

with wood not an oil-fired Monitor or Toyo stove—know better than most that burning unseasoned wood is a waste of the work it took to prepare the wood, inefficiently wastes the BTU potential of the wood, creates excessive smoke, and leads to dangerous chimney fires. To assist low-income residents and churches, state energy assistance, energy efficiency, and weatherization programs are in place. It is uninformed and possibly self-serving to use the rationalization of saving money to protect the behavior of businesses, owners of apartment buildings and duplexes, large churches, and privileged owners of oversize homes who recklessly and knowingly produce injurious smoke without limits.

Burning dirty, no matter the justification, hurts others and is morally wrong. It is slick propaganda indeed to justify polluting the community and hurting others as a way to lower the costs of heating an enormous house or poorly insulated building. Individual rights protect us all and belong to us all. Since when has burning whatever you want however you want become a manifesto of individual liberty? How free are the victims of smoke? The “Don’t Tread on Me” motto doesn’t endorse trampling on another’s property rights and individual freedoms in order to save money.

Interior Alaskans treasure their independence and personal freedoms. Yet it has never been a traditional value to accumulate personal gain through harm caused to a neighbor. Alaskans, especially here in the Interior, have a long history of going out of their way to help and support each another through the long hard winters. Looking out for the well-being of others in the camp, village, neighborhood, or community will always be Alaskan. It is not the Alaskan way to stand back while playmates of our children breathe smoke in their classrooms or must be evacuated from their family’s home. Property rights do not extend to the right to damage a neighbor’s health or to undermine the economic viability of the second largest community in the state.

The lack of any limits or control on smoke pollution trades the benefit of the few (emitters) for endangerment of the many (the victims). A few public officials have gone so far as to shift the onus of responsibility from the emitter or the agency, onto the victim. Testifiers have been publically chided by elected officials to ask their neighbor to stop, to take the offender to court, or move if neither works. Chronic injurious smoke pollution is purposefully misunderstood as a spat between neighbors (who really knows who started it?) or minimized and responsibility displaced from the legislative to the judicial system (state nuisance rules apply here, just as they do for other annoyances like a barking dog, and you have every right to sue).

Residents have spoken to the emitters affecting their neighborhood and received responses such as, “I’ll stop when they make me.” And “I’m not the only one.” Courts enforce personal injury after it has occurred, but this harm is preventable and repeated, not accidental, and if the emitters have been notified, knowing. Why are the rights of victims so poorly defended that they have to collect a pile of medical records, spend \$100,000 (local attorney’s estimate) to get a final decision from a judge after every appeal has been heard, and continue to endure the smoke for years while the case winds its way through the system? The inaction of government ignores individual rights and liberties that the Constitution and laws of the United States guarantee everyone in this country. Victims of smoke have every right to use their private property, home, schools, workplace, and public roads without being harmed. Government inaction ignores the clear assault on public health, including on victims powerless to defend themselves.



## **NOT “LIKE” A BARKING DOG, NONATTAINMENT RISKS THOUSANDS OF JOBS**

Federal law recognizes the problem of PM 2.5 in our community. In December 2009, part of the Fairbanks North Star Borough was designated [a nonattainment area for short-term PM 2.5](#) by the state and federal governments (see [the nonattainment schedule](#)). “Short-term” refers to exceeding the 24-hour average standard which is set by the federal [Clean Air Act](#) and state regulation [[18 AAC 50.010\(1\)\(B\)\(ii\)](#)] as 35 µg/m<sup>3</sup>.

According to the PM 2.5 nonattainment area schedule, the State of Alaska must file a State Implementation Plan (SIP) by December 2012 or risk sanctions required to be implemented by the Environmental Protection Agency (EPA) 18-months after that date. Then, the state has two years, until December 2014, to get the area into attainment.

Yet, ADEC is now intending to file the SIP six months late. ADEC’s public comment period isn’t even on the schedule until October 2012. A six-month delay in finalizing the plan reduces the remaining time to meet attainment by 25%. Implementation of the plan to reduce emission wouldn’t even start until June 2013. This intended delay undercuts the opportunity to meet attainment on schedule and will prolong the community’s nonattainment status.

Recently, one state lawmaker began talking up the possibility of extensions from the EPA as long as eight more years, until 2019, stating EPA gives extensions “if progress is being made.” This gambit takes all urgency out of the state’s interest in meeting attainment from a regulatory perspective. However, gambling on extensions risks severe economic consequences and, under any scenario, unacceptably prolongs the public health consequences.

Federal sanctions include 1) two-to-one PM 2.5 offsets for new or revisions of point source permits (including power plants) and 2) reallocation of up to the entire amount of the state’s federal highway funding allocation.

The two-to-one PM 2.5 offset requirement for point source permits may undo plans for new mining projects in the Interior and would likely raise electric rates. If federal highway funding is reallocated, thousands of construction jobs (both on the road system and the Marine Highway System vital to Southeast communities) will be thrown to the wind. These redirected federal highway funds, approximately \$500 million annually, are the funds needed by the Environmental Protection Agency to develop and implement a Federal Implementation Plan to bring down PM 2.5 levels.

Continued nonattainment increases scrutiny on any construction project in the region through the Environmental Impact Study process under the National Environmental Policy Act.

As though the stakes weren’t high enough, continued nonattainment will be a factor in deciding the fate of Fort Wainwright and Eielson Air Force Base during the upcoming Base Realignment and Closure (BRAC) commission process beginning with the Quadrennial Defense Review in September 2013. Base commanders are beginning to raise concerns for their responsibility in exposing troops and their families to harmful levels of air pollution.

Allowing deadlines to slip and gambling on extensions is unresponsive to the need to reduce the smoke to protect public health and the economic future of the Interior. Continued nonattainment risks thousands of jobs. Failure to meet attainment may drive up the cost of electricity, undercut a significant driver of the construction industry statewide as well as funding essential for the Alaska ferry system, add challenges to environmental review for development, and be used to downsize the military bases.

## **EDUCATION, CHANGE-OUT INCENTIVES, AND RESPONSIVE ACTION INCLUDING THE HEALTHY AIR CITIZEN'S INITIATIVE**

The public needs assistance to understand what is PM 2.5, why it is harmful, how to avoid and protect yourself from that harm, and how to prevent PM 2.5 pollution (such as by burning dry wood only). Information released by the Borough to the media on current and forecast air quality empowers individuals with knowledge for their self-care and enables them to care for those under their responsibility. The [Borough-Wide Air Quality Index](#) monitored downtown and the awkward to use [North Pole monitoring station](#) should be supplemented by additional publically reported monitoring facilities in known hot zones. The monitoring stations should provide real-time and historical data to the public.

The Fairbanks North Star Borough's stove change-out program in effect since July 2010 has offered incentives for residents to remove or replace solid fuel-burning appliances. As of April 19, 2011, 22 units were removed (including 10 outdoor hydronic heaters), 168 were replaced, and 3 units repaired. The Borough has spent most of a \$1 million federal grant and in [July 2011 received an additional \\$3 million in funding from the State of Alaska](#). While costly, the change-out program supports retiring inefficient, highly polluting appliances which has clear public benefits. However, the program is currently restricted to exclude properties outside the nonattainment area, regardless of merit.

Voluntary measures such as education and stove change-out incentives can only go so far in controlling emissions. Government must have the authority to quickly stop those responsible for a pollution source that is an imminent and substantial danger to public health and welfare.

A citizen's initiative, the Healthy Air Protection Act for Our Property Rights and Local Economy, will be receive a public vote this October. In just two months, over three thousand signatures were collected and submitted to the Borough Clerk for verification. The Clerk verified more than the required 2,457 signatures from registered voters, certifying the Healthy Air Protection Act for the October 4, 2011 municipal ballot. Voters will be able to lead efforts to reduce winter PM 2.5 pollution, protect public health, defend responsible woodstove use, and regain local control of the air quality program.

Review the initiative: [the Healthy Air Protection Act for Our Property Rights and Local Economy](#).

In the citizen's initiative, highly polluting wood-fired hydronics and coal burning (home heating only, not power plants) are prohibited in the [PM 2.5 nonattainment area](#) (effective November 2012). Emissions from each wood-fired hydronic heater are 22 to 40 times greater than an EPA-

certified indoor woodstove, and a coal burning appliance produces at least 9 times more PM 2.5 pollution than an oil furnace. Also, standards for solid fuel burning emissions from the chimney or crossing property lines, defined as misuse, are established to give the Borough enforceable tools. Incentives for stove removal and upgrades will target smoke hot zones borough-wide. Also, tax credits to support air quality improvements such as maintenance of a fuel oil heater and replacing a worn-out catalyst for a woodstove will reduce PM 2.5 concentrations yet further.

Independently, citizens and policy makers have been coming together to support programs promoting weatherization and energy efficiency. Recognition is growing that investing in efficient building design and heating systems are essential to a healthy economy in Interior Alaska. Cleaner sources of heating fuel are on the horizon but do not replace the need for establishing reasonable standards and protections for healthy air.

Controlling the winter smoke pollution is something we can and must do. Federal deadlines for reducing PM 2.5 emissions begin in 2012. If state and federal standards are go unmet, month of winter burn bans, prohibiting even proper use of a clean burning woodstove, may be imposed. Federal highway funding, \$500 million each year, may be redirected to enforce these strict controls, with a significant loss of construction employment.

Residents are increasingly sick of the smoke and supportive of reasonable limits, including prohibiting highly polluting appliances and establishing emission standards. That's not too much to ask when the health of our children is at stake. When the voters lead the way, the agencies will have the tools and courage to help bring healthy air to our families and protect the viability of the region's economy.

## **CONCLUSIONS**

If anything at all is being done by government agencies to address the extreme smoke pollution endured by residents of our community, it is insufficient at every level. There is no mystery about the where it is coming from: the plumes lead right back to the sources of the harm. Residents unfortunate enough to know have done their part to identify the sources of the smoke. All that is left is deciding what to do.

This community has a choice.

Sit on our hands and endure years of further physical injury and economic harm as PM 2.5 concentrations continue to rise while waiting to see what drastic regulations state and federal agencies may impose.

Or take responsibility for our future locally by prohibiting the heavy sources of the smoke and offering incentives to support a transition to cleaner, more efficient heating systems.

Healthy winter air is a choice we must make together this October. It's time for voters to bring healthy air to our community.