

**ALASKA DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**



Amendments to:

State Air Quality Control Plan

Vol. II: III.D.5.7

Control Strategies

Adopted

December 8, 2017

Bill Walker, Governor

Larry Hartig, Commissioner

5.7 Control Strategies

CAA section 172(c)(1) describes the general attainment plan requirement for reasonably available control measures (RACM). Attainment plan submissions must “provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment” of the NAAQS.

CAA Part D, Subpart 4 has also been determined to apply to PM_{2.5} attainment plans.¹ Section 189 (a)(1)(C) requires that RACM measures in designated Moderate nonattainment areas be implemented no later than 4 years after designation.

5.7.1 Reasonably Available Control Technology (RACT)

Large stationary sources are a subgroup of emissions sources that are given special attention in the RACM analysis. These units are subject to site-specific review for Reasonably Available Control Technology. The U.S. EPA has defined RACT as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.”²

Per EPA guidance, DEC evaluated all emission units with emissions greater than 5 tons per year (TPY) of PM_{2.5} (see Appendix III.D.5.7 for RACT details) or its precursors (NO_x and SO₂). All PM_{2.5} precursors were addressed (NO_x, SO₂, NH₃, VOCs), but only NO_x and SO₂ were addressed on an emission unit basis. Based upon that analysis, DEC in consultation with the FNSB has concluded that the current level of controls meets RACT for all of the pollutants from all of the emission units.

See the section on RACT for more details.

5.7.2 Reasonably Available Control Measures (RACM) for other sources

Identification of RACM is a 5-step process:

- Step 1: Identify source categories with non-trivial emissions of PM_{2.5} or its precursors.
- Step 2: For each source category, source, or activity from Step 1, develop a list of technologically feasible emission control technologies and/or measures.
- Step 3: For each technologically feasible control measure, evaluate emission reductions and costs. Identify and exclude economically infeasible measures.
- Step 4: Determine whether control measure can be implemented within 4 years of designation.
- Step 5: Identify Reasonably Available Control Measures.

¹ *Natural Resources Defense Council (NRDC) v. EPA*, No. 08-1250 (D.C. Cir., Jan. 4, 2013)
² 44 FR 53762 (September 17, 1979)

The following source categories were evaluated for RACM. This list is based on emissions inventory information and other technical analyses that identify the most important sources for PM_{2.5} in the nonattainment area.

- Wood burning
 - Outdoor wood-burning boilers (hydronic heater)
 - Wood stoves
 - Fireplaces
 - Burn barrels, residential open burning
 - Agricultural and forest burns
- Residential fuel oil combustion
- Transportation
 - Automobiles
 - Heavy-duty vehicles

DEC, in consultation with the FNSB, has determined that the following control measures are RACM. Details of the analysis supporting these determinations are provided in Appendix III.D.5.7.

- Education and outreach programs for wood combustion.
- Voluntary curtailment of wood burning on episode days.
- Require new wood combustion units to be EPA-certified.
- Provide subsidies to encourage retirement/replacement of old, noncertified wood-burning equipment.
- Open-burning bans on episode days.
- Prohibit the use of burn barrels.
- Subsidize heating upgrades and weatherization

Many of these measures are already implemented. Details of current and planned programs are provided below.

The FNSB PM_{2.5} nonattainment area relies on several primary control strategies coupled with additional voluntary measures to mitigate PM_{2.5} air pollution. During the period 2008-2013, a number of programs were implemented to encourage changes in behavior that produce emission reductions. The FNSB and DEC continue to operate these programs and plan to do so in the future. Since these programs are voluntary and it is difficult to quantify their impact on behavior, the attainment demonstration and weight of evidence discuss the likely impacts of voluntary measures on attainment. The total credit taken for all voluntary measures is 0.5 µg/m³.

Following the adoption and submission of the moderate area SIP control measures in January of 2014, the Borough has adopted additional control measures into Title 21 Chapter 28 (previously

8.21) of the borough ordinances.^{3,4,5,6,7,8,9,10,11} In March 2017, the borough adopted an ordinance amending Chapter 21.28 FNSB Code regarding the PM_{2.5} Air Quality Control Program and amending FNSB Code 1.20.080, Fine Schedule.¹² The ordinances have been adopted into SIP Appendix III.D.5.12 – Assurance of Adequacy. The impact of these ordinances on the existing control measures is explained in the following sections.

5.7.2.1 Space Heating and Solid Fuel Heating Controls

The use of solid fuels, wood and coal, for home heating is an important source of PM_{2.5} air pollution in the nonattainment area. Winter heating costs are high and many residents rely on solid fuel burning as an economic way to heat their homes, often as a supplement to heating with more expensive fuel oil. In order to reduce PM_{2.5} emissions from solid fuel-fired heating devices, the FNSB and DEC have developed a number of measures that work together to lower emissions from this important source in a manner that accounts for an on-going need to use wood and coal as an economical heating source either as their sole source of heat or, more typically, as a supplement to fuel oil or electric heat. These measures will:

- upgrade solid fuel-fired heating devices in the community with new, cleaner burning units,
- encourage best burning practices for solid fuel-fired heating devices through the use of appropriate fuels, maintenance, and operation,
- implement a staged air quality event plan that contains requirements to switch to fuel oil, electricity, propane, or natural gas fuels for space heating on days with poor air quality, and
- address heaters with excessive smoke through a combination of public education, compliance assistance, and regulatory enforcement.

At the same time, the local and state government are working to encourage energy efficiency and weatherization to reduce heating needs. In the long term, efforts are underway to bring economical natural gas to the community to help reduce resident's energy costs and allow for a cleaner burning fuel for space heating. The following subsections describe space heating control programs, with an emphasis on the solid fuel-fired heating programs, that are being implemented or that are planned for implementation in the 2008-2019 time period.

³ Fairbanks North Star Borough Assembly Ordinance No. 2015-01, February 27, 2015

⁴ Fairbanks North Star Borough Assembly Ordinance No. 2015-18, April 23, 2015

⁵ Fairbanks North Star Borough Assembly Ordinance No. 2015-29, June 25, 2015

⁶ Fairbanks North Star Borough Assembly Ordinance No. 2015-73, January 14, 2016

⁷ Fairbanks North Star Borough Assembly Ordinance No. 2016-21, May 4, 2016

⁸ Fairbanks North Star Borough Assembly Ordinance No. 2016-37, July 28, 2016

⁹ Fairbanks North Star Borough Assembly Ordinance No. 2016-30, April 28, 2016

¹⁰ Fairbanks North Star Borough Assembly Ordinance No. 2016-20-1A, August 11, 2016

¹¹ Fairbanks North Star Borough Assembly Ordinance No. 2017-44, June 19, 2017

¹² Fairbanks North Star Borough Assembly Ordinance No. 2017-18, March 9, 2017

5.7.2.2 Solid Fuel-Fired Heating Devices Upgrades and Emission Standards

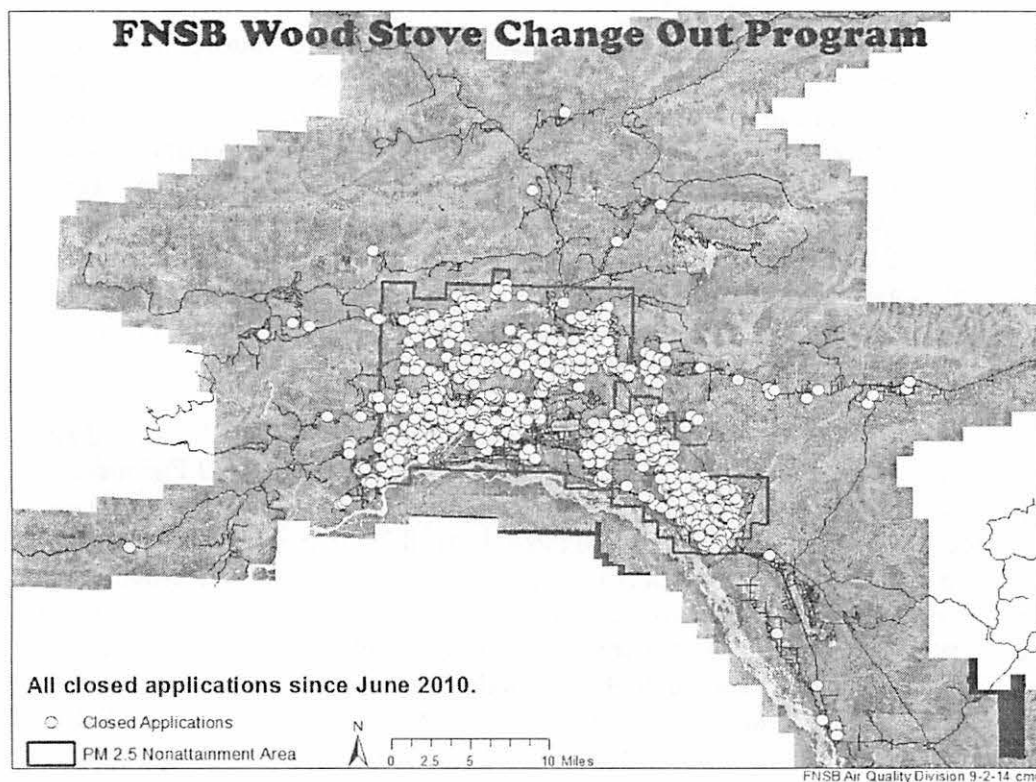
Starting in June of 2010, the FNSB established an incentive program to encourage homeowners to replace their old, uncertified solid fuel-fired heaters with new EPA certified heaters. Upgrade or removal of solid fuel-fired heaters provides for immediate and long term emission reductions in PM_{2.5}. As heating fuel costs increased during the past 5 years, a large number of outdoor wood and coal boilers were installed by residents seeking to reduce their heating costs. These large units have proven problematic in some neighborhoods creating significant localized smoke impacts. The volume of solid fuel-fired heaters, whether large or small, have combined to increase PM_{2.5} levels significantly and the Borough has identified a number of “hot spot” neighborhoods. In its implementation of the change out program, the Borough has sought to prioritize their funds for upgrading units into areas with high PM_{2.5} concentrations.

The change-out program has been popular with local residents and has evolved between 2010 and 2014 as the FNSB adapted and improved the program, now called the FNSB Enhanced Voluntary Removal, Replacement & Repair Program, to create additional incentives for participation. Since the inception of the program through April 2016, the Borough has repaired, replaced, or removed significant numbers of solid fuel-fired heaters. Table 5.7-1 provides the numbers of heaters changed out in various categories, through April 2016. Figure 5.7-1 provides a map of the locations of change outs or heater removals throughout the nonattainment area, through June 2010. Between 2008 and 2019, the Borough plans to incentivize the replacement of nearly all the uncertified wood heating devices in the nonattainment area. An estimated 4,640 heater replacements or removals will be completed by 2019 (2,760 from the Borough’s program and 1,880 from natural turnover).

Table 5.7-1

Woodstove Change Out Statistics		(as of 7-7-17)
Device Type	Total Devices Removed, Replaced, or Repaired	Percentage of Total Change Outs
Replace Solid Fuel Burning Device (SFBA)	1807	75.7%
Replace Hydronic Heater (HH)	74	3.1%
Removal of SFBA (not replaced)	221	9.3%
Removal of Hydronic Heater (not replaced)	99	4.1%
Repairs to EPA certified devices	74	3.1%
Fireplace Replacements	113	4.7%

Figure 5.7-1



In addition to the Borough's change out program, the Alaska Legislature also funded the Alaska Resource Agency (ARA) to conduct a project that resulted in the retrofit of outdoor hydronic heaters (OHHs) within the nonattainment area. ARA identified and retrofitted 40 outdoor hydronic heaters with ClearStak or similar pollution control devices. The retrofits were performed in late 2011 and 2012 resulting in emission improvements for these heating units which are further described in the Emission Inventory, Section 5.6.

In order to provide support for the Borough's change out program, in November 2014, the state adopted a new regulation that requires that all new wood-fired heating devices being installed within the nonattainment area meet emission standards more stringent than the 1988 EPA New Source Performance Standards. A copy of the adopted regulation, 18 AAC 50.077, is included in Appendix III.D.5.7. Under the regulation, new wood-fired heating devices in the nonattainment area meet the following emission standards presented in Table 5.7-2:

Table 5.7-2 FNSB Emission Standards for Wood-Fired Heating Devices

Device Type	PM _{2.5} Emission Standard
Woodstoves*	2.5 grams/hour
Wood Hydronic Heaters	2.5 grams/hour
Wood Heating Appliances Greater than 350,000 btu/hr heat output	2.5 grams/hour

*woodstoves covered by this emission standard are defined in the same manner as wood heaters defined and certified by EPA under 40 CFR part 60.531

The emission standards are set at a level of 2.5 grams/hour for wood stoves, wood-fired outdoor hydronic heaters, and larger wood-fired heaters (greater than 350,000BTU heat output). The state regulatory program relies on EPA and ASTM test methods. Testing of wood stoves and outdoor wood hydronic heaters is already being conducted by manufacturers to determine compliance with EPA certification and voluntary approval programs and can be relied upon to demonstrate compliance with the state regulation assuming the unit being tested is found to meet the 2.5 grams/hour limit. ADEC's analysis of these emission standards showed that wood-fired heaters of various sizes meeting these standards are available in the marketplace at a variety of price points.

The Borough's ongoing change out program includes new requirements that are more stringent than state standards. However they only apply to the Borough's air quality control zone. Borough ordinance 2015-73, adopted January 14, 2016, limits the change out program to the air quality control zone and sets emission limits for solid fuel-fired heating devices that are installed as part of the change out program. Borough ordinance 2017-44, adopted June 19, 2017, requires a qualified appliance properly installed by a Borough listed vendor/installer.¹³ Wood and pellet stoves must be EPA-certified with an annual average PM_{2.5} emission rating of 2.0 grams per hour or less. Hydronic heaters must be pellet-fired, EPA-certified, and have an emission rate of 0.10 pounds per million BTU or less. These emission standards are designed to adopt EPA's wood-fired heater New Source Performance Standards (NSPS) 2020 emission limits early for devices installed as part of the change out program.

The Borough also adopted requirements for home heating device installations inside the air quality control zone that are not conducted as part of the change out program.¹⁴ The Borough established minimum hydronic heater setback requirements away from lot lines and sensitive locations. These requirements limit the number of properties where a hydronic heater may be installed to more rural areas due to generally larger lot sizes in less populated areas. For all solid fuel-fired appliances, the device must be EPA-certified and have an annual average emission rating of 2.5 grams per hour or less or 0.10 lbs/mmBtu for hydronic heaters. The ordinance requires all solid fuel-fired heating devices to meet these standards, effectively prohibiting the installation of other types of solid fuel-fired heating devices, including coal, unless the Borough approves an independent emission test showing the device meets the emission standards.

ADEC's regulations help to ensure that replacements of wood-fired heaters occurring beyond the change out program within the entire nonattainment area are also moving toward the cleanest burning heaters available in the marketplace. The 2014 ADEC regulations do not mandate any change out of existing wood-fired heating devices and allow existing heaters to continue to be used in area homes. However, Section 5.10 illustrates how ADEC regulations will require change out of non-EPA certified devices upon real estate transactions as a contingency measure should the area be designated by EPA as a Serious Nonattainment Area. The Borough's change out program, described previously, will continue to be used to incentivize a higher than normal rate of wood heater replacements within the air quality control zone. ADEC will work with

¹³ Fairbanks North Star Borough Ordinance No. 2017-44, adopted June 19, 2107

¹⁴ Fairbanks North Star Borough Ordinance No. 2015-73, adopted January 14, 2016

retailers of wood heating devices in the implementation of the emission standards to ensure compliance for units being sold for installation in the nonattainment.

Efforts at the federal level also play a role in providing emission reductions from wood-fired heating devices, through programs that reduce emissions at the point of manufacture. The EPA has a certification program for new wood heaters. The rules governing emissions from new woodstoves (NSPS) were established in 1988 and updated in 2015. The 1988 PM standards affected adjustable burn rate stoves and pellet stoves. A voluntary program for hydronic heaters was developed to promote the development of cleaner burning technology. The EPA Phase II Hydronic Heater Partnership Agreement set voluntary emission limits that manufacturers could voluntarily meet to earn “white tags” for qualifying models. An update to the 1988 NSPS that was effective May 15, 2015 set emission limits for new wood heaters including woodstoves, pellet stoves, wood-fired hydronic heaters, forced-air wood furnaces, and single burn rate wood stoves. The NSPS is set to initially comply with the Washington State PM emission limit for wood stoves and pellet stoves of 4.5 grams per hour. Wood-fired hydronic heaters initially must meet the emission limits in the existing voluntary Phase II Program. ADEC’s emission limits are currently more stringent at 2.5 grams per hour for woodstoves, pellet stoves, and wood-fired hydronic heaters. In 2020, the EPA NSPS will require manufacturers to meet lower PM emission limits of 2.0 grams per hour for wood and pellet stoves and 0.10 pounds of PM per million BTU of heat output for wood-fired hydronic heaters. These limits will be more stringent than ADEC’s limit of 2.5 grams per hour. The EPA NSPS requirements will provide additional long term benefits to the nonattainment area during routine turnover and installation of cleaner burning devices as older wood-fired heaters are replaced by homeowners.

5.7.2.3 Improving Solid Fuel-Fired Heating Device Operations

In order to achieve the greatest PM_{2.5} emission reductions, it is critical that solid fuel-fired heating devices be operated correctly by local residents. The Borough and ADEC have developed a set of complementary measures to help improve the operation of these heating devices within the nonattainment area. These measures include extensive public education, incentives for the use of wood pellets or energy logs, and regulations addressing visible emissions from stacks and the use of appropriate fuels in solid fuel-fired heating devices.

Public outreach is an important component of the Fairbanks air quality program with respect to improving resident’s use of solid fuel-fired heating devices thereby reducing PM_{2.5} emissions. Public outreach efforts focus on measures residents can take to protect themselves and to reduce PM_{2.5} emissions from activities like wood and coal burning. The Borough and ADEC have developed and implemented an extensive outreach effort to encourage residents to employ “best burning” practices when using wood heating devices. In 2011, the Borough started the “Split, Stack, Store, & Save” campaign which encourages residents to plan ahead by cutting and properly storing a winter season’s worth of wood a full year before they plan to use it. In 2014, the Borough instituted the Voluntary Burn Cessation Program (VBCP) which alerted residents to current or impending Air Quality advisories and asked them to voluntarily cease burning wood during the episode. The Borough repealed the VBCP with the adoption of ordinance 2017-18

which strengthened the curtailment program. The Borough gives away wood moisture meters and “Burn Wise”® CD’s to each applicant to the Woodstove Exchange Program. Borough Air Quality staff administer a quiz based on the content of the CD and go over any incorrect answers to ensure the applicant understands the correct way to operate their new EPA certified device and the benefits to operating it in the correct manner. This outreach will continue and be improved upon based on experience in the coming years.

In addition to public outreach, it is critically important that individuals use the appropriate fuels in their wood-fired heating device. To promote cleaner burning devices and practices, the Borough is providing incentives through the change out program for wood pellets and energy logs. When used appropriately in wood-fired heating devices, these manufactured dry wood products significantly reduced emissions. In 2014, the Borough supplied vouchers for 210 tons of energy logs and pellets to individuals who participated in the woodstove exchange program. Each participant currently receives one ton of product when they have met all requirements of the program.

To further support the efforts to reduce emissions through the proper operation of solid fuel-fired heating devices, ADEC is implementing programs and regulations to address this issue. These programs primarily promote the use of correct fuels, especially related to dry wood.

In 2014, ADEC established a voluntary program (Moisture Disclosure Program) to register wood sellers that sell dry wood or that agree to provide wood moisture content information to consumers at the time they purchase wood. This voluntary program is meant to encourage a dry wood market and provide additional information to residents that buy wood for use in the nonattainment area. By registering and publishing information on vendors that sell dry wood or that verify moisture content, consumers are made aware of whether the wood they purchase needs to be seasoned or whether it is ready for burning immediately. Burning dry wood is important for correct operation of both newer and older wood-fired heating devices. Not only is the burning of dry wood more efficient, but it significantly reduces PM_{2.5} emissions.

In December 2014, the state adopted a new regulation that requires that individuals operating a solid fuel-fired device inside the nonattainment area use the appropriate fuel (wood or coal) in their device and a requirement that dry wood be burned in the winter months. Borough code requires the use of dry wood year round.¹⁵ A copy of the adopted state regulation, 18 AAC 50.076 is included in Appendix III.D.5.7. This regulation is meant to ensure that residents do not burn inappropriate materials, such as trash, in their solid fuel-fired heating devices. The regulation also requires that only dry wood products, 20% moisture content or less, be burned in wood-fired heating devices during the winter period inside the nonattainment area.

To further assure that wood heating devices are being operated properly, the ADEC adopted regulations in 18 AAC 50.075 (see Appendix III.D.5.7) that revised the standards for visible emissions or opacity of smoke from stacks with a focus on PM_{2.5} air quality episodes. The revisions to the regulation coupled with the emergency episode provisions defined in section 5.11 of this plan, require that solid fuel-fired heaters meet 20% opacity limits during PM_{2.5} air quality episodes. This standard reflects improvements in wood heating technology and the need

¹⁵ Fairbanks North Star Borough Assembly Ordinance No. 2015-01, February 27, 2015

to burn cleanly particularly during air quality episodes. Newer wood-fired heating devices emit much less smoke than those manufactured decades ago. When operating properly, new wood stoves have little to no visible smoke emissions. If devices are operated improperly or with wet wood, dense smoke can be emitted from stacks. The opacity regulations for wood-fired heating devices assist the ADEC in responding to citizen complaints about smoky stacks in their neighborhoods and in addressing high emitting devices, particularly during periods of poor air quality.

Regulatory revisions were also proposed in 2014 to address community concerns regarding visible emissions for coal-fired heaters. Although not a major contributor overall to local PM_{2.5} emissions at this time, the use of coal for heating residential homes and businesses has seen an increase and resulted in localized nuisance complaints related to smoke from these heating devices. Comments received on the state's regulatory proposal suggested that another section of the state regulations, 18 AAC 50.055 (Industrial Processes and Fuel-Burning Equipment), already applies to coal-fired heating devices and has a lower opacity requirement (20%) than wood-fired heating units during air quality advisories. As a result, DEC did not move forward with its plan to expand 18 AAC 50.075 to include coal-fired heating devices. Regulatory revisions in 2016 resolve this potential conflict by lowering the opacity requirement in 18 AAC 50.075 to 20% to match 18 AAC 50.055. All solid fuel-fired heating devices are required to meet the 20% opacity limit during air quality advisories, including coal-fired heaters.

In 2017, ADEC amended 18 AAC 50.075 to add subsection (f) to include a 20% opacity requirement for all solid-fuel fired heating devices. This opacity requirement mirrors the FNSB ordinance in that the 20% opacity is for all operations except at startup.

ADEC is responsible for enforcing compliance with the state regulations. The department's compliance activities are conducted using the tools and authorities provided under the state statutes. The Division of Air Quality does not have statutory authority to issue administrative penalties for violations of Alaska environmental law. This means that ADEC staff cannot simply write "tickets" to individuals that are found to be violating state regulations. All compliance and enforcement activities are case specific. However, ADEC generally initiates compliance activities in response to complaints received that indicate the potential for violations of a state regulation. ADEC staff investigate complaints to verify or corroborate a problem or violation of a state requirement. In most cases, the department finds that compliance can be achieved through assistance to businesses and individuals in understanding the regulatory requirements and how they can comply. In the event that compliance assistance is not successful in resolving a compliance issue, department staff use administrative enforcement tools such as written notices of violation, compliance agreements, nuisance abatement orders, and in rare cases, civil court actions.

5.7.2.4 Encouraging Reduced Use of Solid Fuel-Fired Heaters During Air Pollution Episodes

The FNSB and ADEC Air Programs work together to forecast daily air quality during the winter and asks citizens to curtail their use of wood-fired heating devices on days projected to have poor dispersion and higher PM_{2.5} concentrations. Public outreach is an important component of this strategy. Public outreach efforts focus on informing the public of air quality alerts, explaining why they were called, and giving residents options in the case of an alert. Advisories or Alerts are called during winter months when forecasts indicate that the 24-hour average PM_{2.5} standard is likely to be exceeded. During an episode, the Borough will notify local media that conditions exist that can cause a violation of the ambient PM_{2.5} standard. As part of the advisory, the public is informed of voluntary measures they can take to protect themselves and to reduce PM_{2.5} emissions from activities like wood and coal burning.

Surveys have shown that less than 4% of residences (1,280) located within the nonattainment area rely on wood as their only source of heat. However the high cost of heating oil and extreme cold temperatures force many residents to rely heavily on solid fuels to supplement their base fuel oil heating to prevent freezing homes. This makes mandatory wood heating curtailment unreasonable to implement during extreme cold temperatures. However, surveys have revealed a willingness on the part of some residents to shift away from solid fuel use during periods of poor air quality. It is therefore projected that a voluntary episodic wood and coal burning curtailment program could have benefit in reducing air pollution during poor air quality episodes. Greater numbers of residents are more likely to shift from wood or coal to another heating fuel when temperatures are warmer (e.g. warmer than -10 degrees F) as they may be less reliant on supplemental heat during these warmer episodes. During 2014, the Borough increased its efforts in this area by instituting a (VBCP). Then in 2017 the Borough repealed the VBCP in order to strengthen its burn cessation program by lowering the concentration where a burn cessation would be called,

The VBCP was designed to encourage, incentivize, and facilitate the voluntary cessation of the use of wood burning appliances (i.e., wood stoves, wood-fired hydronic heaters, wood-fired furnaces, fireplaces, fireplace inserts, masonry heaters or pellet fuel burning appliances) in the nonattainment area during air quality episodes. It is recognized that it will be difficult or impossible for some households to participate in this program (e.g., those that heat solely with wood or for which wood is a necessary supplement during periods of cold weather). Therefore, this program was intended for households that were able to use space heating alternatives with significantly lower PM_{2.5} emissions, including those fueled by gas, oil, electricity, propane or district heat.

The VBCP consisted of 5 separate components; an Alert System, Social Media, Public Awareness, Marketing, and Incentive program.

- **Alert System:** Alert media selected as the notification platform. Alert messages during episodes are sent out through email, text messaging and social media.
- **Social Media:** Alerts, daily forecast, and program signup are available via Facebook.

- **Public Awareness:** 4 updateable reader-boards and 10 static sandwich board signs placed alongside roads in Fairbanks and North Pole displaying VBCP activity.
- **Marketing:** Radio, TV, and Newspaper advertising to create awareness of the VBCP and current air quality.
- **Incentives:** The Borough will recognize all participants of the program at the end of the year through a Fairbanks Daily Newsminer advertisement.

In addition to the Borough's air quality alert restrictions described in 5.11, starting in 2015, ADEC implemented regulations (18 AAC 50.075(d)) that provided for more stringent visible emission (opacity) requirements for wood-fired smoke stacks during air pollution events. As described further in section 5.11, air quality episodes will trigger this requirement when 24-hour concentrations exceed $25 \mu\text{g}/\text{m}^3$. The public health concerns associated with poor air quality episodes require a response that mitigates impacts from air pollution sources in a manner that balances the health benefits from reducing the use of wood heaters with the potential negative health and safety impacts from a lack of supplemental or primary wood heat during extreme cold periods. Given the community concerns about the reasonableness of requiring residents to cease use of solid fuel-fired heating devices during periods of extreme cold, the state regulations would focus on ensuring that heating units can only be used during periods of poor air quality if they are operated in a clean and efficient manner. When operated properly, solid fuel-fired heating devices emit little or no smoke. Efficient operation not only reduces air pollution but allows for the burning of less wood, an economic or time savings to residents who buy or cut wood.

ADEC will use the following approaches to notify the public of requirements and address any compliance issues. The public will be notified of an air quality advisories (alert and episode) that has specific opacity level requirements utilizing several outreach methods. All episode announcements are emailed to ADEC's up-to-date distribution list. This distribution list contains all local media outlets (radio, TV), the FNSB Air Quality Program Staff, elected officials, and anyone who signs up for electronic notices. ADEC has online sign-up capabilities for various electronic notices and alerts through its *Air Online Services* accessible through the Division of Air Quality's home page at: <http://dec.alaska.gov/air>. In addition to these electronic emailed announcements, all advisories are posted to the Division's Air Quality Advisories web page at: <http://dec.alaska.gov/Applications/Air/airtoolsweb/Advisories/>, which includes the actual advisory, the start and end dates, the area, and status (expired, active) of the advisory. ADEC will also post advisories on its Burn Wise Alaska face book page as well as the department's Twitter account.

In addition to providing notification when the opacity requirements are in effect, the department plans to provide on-going public information on the opacity requirements and ways that residents can comply. Difficulty meeting opacity could be due to wet wood. Under state regulation, residents are required to use dry wood during winter months. Under Borough code, residents are required to use dry wood year round.¹⁶ Residents will be directed to those wood sellers participating in the voluntary *Moisture Disclosure Program* where wood sellers either disclose the moisture content of purchased wood or agree to provide dry wood. Brochures on proper maintenance and operation of a solid fuel-fired device will also be available. To the extent that ADEC resources allow, staff can assist residents who request help in determining in advance of

¹⁶ Fairbanks North Star Borough Assembly Ordinance No. 2015-01, February 27, 2015

episode conditions whether their typical burning operations meet the opacity levels outlined in this plan.

If a resident is found to be out of compliance with the visible emission levels identified for a specific episode, ADEC is responsible for taking actions to enforce the requirement. The department's compliance activities are conducted using the tools and authorities provided under the state statutes. The Division of Air Quality does not have statutory authority to issue administrative penalties for violations of Alaska environmental law. This means that ADEC staff cannot simply write "tickets" to individuals that are found to be violating the opacity levels. All compliance and enforcement activities are case specific, however, ADEC generally initiates compliance activities in response to complaints received that indicate the potential for violations of a state regulation. ADEC staff investigate complaints to verify or corroborate a problem or violation of a state requirement.

In most cases, the department finds that compliance can be achieved through assistance to businesses and individuals in understanding the regulatory requirements and how they can comply. In the case of problem burners failing to meet these opacity levels during air quality episodes, it is important to bring a unit into compliance quickly to reduce smoke and assist in bringing levels of PM_{2.5} into compliance in the local area. As a result, if a resident working with or without the assistance of ADEC staff is unable to bring a unit into compliance within a reasonable period, AQ staff would request that the resident stop burning for the duration of the air quality episode unless it is the sole source of heat for the structure. In the event that compliance assistance is not successful in resolving a recurring smoke concern at a specific residence or business, the department staff may use additional administrative enforcement tools, such as nuisance abatement orders, to address the concern. Understanding that there may be residents in the community for which wood burning is essential and routine difficulties complying with the requirement may be discovered, the department has also included in the regulation a provision for a temporary waiver for situations where the owner/operator of a wood-fired heating unit demonstrates financial hardship or technical feasibility issues in meeting the opacity requirements. The agency must consider the mitigation measures implemented, the proximity of the device to sensitive locations such as hospitals, day care centers, schools, clinics, and senior centers, as well the contribution of the device to the exceedance of the PM_{2.5} concentration triggering the episode announcement before granting such a waiver.

5.7.2.5 AHFC Energy Programs

The Alaska Housing Finance Corporation (AHFC) implements several energy programs that are designed to make homes more energy efficient. As homeowners make energy efficiency improvements they reduce the amount of fuel and electricity needed for power and heat leading to corresponding air quality benefits due to the reduced fuels being burned for space heating and power generation. Information on AHFC energy programs is available on the internet at: www.ahfc.us/efficiency/energy-programs/

Under the AHFC Home Energy Rebate Program, home owners may receive up to \$10,000 for making energy-efficient improvements to their existing home based on before and after energy ratings made by Energy Raters. Homeowners must get an initial energy rating and apply for the

program. Eighteen months is provided to complete improvements with a second energy rating after the improvements are done. Homeowners are reimbursed (up to a specified amount) for the energy ratings and receive a rebate based on their home's improved energy-efficiency and eligible receipts. Only those improvements recommended by the rater are eligible for the rebate.

There is also a Home Rebate program that provides a \$10,000 rebate for 6 Star homes and \$7,000 for 5 Star Plus homes (the highest AHFC energy rating categories). In addition, AHFC offers interest rate reductions when individuals finance new or existing energy efficient homes or when borrowers purchase and make energy improvements to an existing home. Any property that can be energy rated and is otherwise eligible for AHFC financing may qualify for the energy efficiency interest rate reduction program.

Individuals who meet income limits are eligible to apply for the AHFC Weatherization Assistance Program. Local weatherization providers provide program services at no cost to qualified homeowners and renters including single and multifamily homes, mobile homes, apartments, and condominiums. The Weatherization Assistance Program provides low and moderate income households with improvements to their homes which increase the energy efficiency of their dwelling, including measures such as:

- Air sealing attics, crawlspaces, etc.
- Insulating and weather stripping
- Repair and replacement of heating systems
- Replacement of doors and windows
- Installation of fans, smoke alarms, CO detectors

5.7.2.6 Expanded Availability and Use of Natural Gas

Key to reducing fine particulate matter air pollution in the long term is expanding the availability of affordable, cleaner burning fuel options within the nonattainment area. The Interior Energy Project provides the financial tools needed to bring natural gas to the Fairbanks and North Pole area. The project was established through Senate Bill 23 which passed the Alaska Legislature unanimously in April 2013. The legislation authorizes the Alaska Industrial Development and Export Authority (AIDEA) to provide the financing package to partner with the private sector to build a liquefied natural gas (LNG) plant on the North Slope and natural gas heating distribution system in Fairbanks and North Pole. The current projections indicate that the earliest this project will provide additional natural gas into the community is 2016. As a result of this timing, the project will not provide certainty of meaningful emission reductions in the short term prior to the 2015 moderate area attainment date but it will provide significant emission benefits between 2015 and 2019. Further discussion of this program is included in the contingency measure section of this plan (Section 5.10).

5.7.2.7 Transportation Control Strategies

5.7.2.7.1 Expanded Availability of Plug-Ins

Engine preheaters are used extensively throughout Fairbanks when ambient temperatures drop below 0° F to ensure that vehicles exposed to these temperatures can be easily started. Local testing programs have confirmed that preheating vehicles, a practice commonly referred to as “plugging-in,” provides a substantial reduction in motor vehicle cold start emissions.

Recognizing the many benefits of plugging-in (e.g., reduced emissions, lower need for maintenance, fuel economy, startability, etc.), the Borough has a long-standing practice of expanding the number of parking spaces equipped with electrical outlets. This has been achieved by securing funds for retrofitting existing facilities (e.g., school renovations) and including outlets in new public facilities (e.g., the construction of new schools). It has also been achieved by encouraging the private sector to retrofit existing facilities (e.g., hospital expansions) and including outlets in new private facilities (e.g., Home Depot). This strategy was made more viable with Congress’ passage of the Transportation Equity Act for the 21st Century that removed the restriction on the use of Congestion, Mitigation and Air Quality (CMAQ) funds for the Section 108(f) transportation control measure (xii) that reduces motor vehicle emissions under extreme cold start conditions.

In support of their previous carbon monoxide attainment plan, the Borough conducted a survey of employee parking lots,ⁱ public and private, located within the nonattainment area that were thought to have more than 100 parking spaces. The results of that survey are presented in Table 5.7-4. It shows that slightly more than 90% of employee parking lot spaces were equipped with electrical outlets in 2001. Employee parking spaces tend to have vehicles parked for longer durations resulting in greater cold start motor vehicle emissions than visiting vehicles which are often parked for short durations.

While many of the Borough parking lots have been upgraded with plug-in infrastructure in the past, the Borough has secured CMAQ funds from the Federal Highway Administration (FHWA) to continue the program of retrofitting public parking lots located in the nonattainment area with electrical outlets. As shown in Table 5.7-5, several projects have been completed, or are scheduled for completion, between 2008 and 2015.[‡]

Table 5.7-4 Summary of Employee Parking Spaces Equipped with Plug-Ins in the Fairbanks CO Nonattainment Area			
	Spaces	Plug-Ins	% Equipped
Government Summary			
FNSB	2,345*	2,170	93
Federal	1,948	1,928	99
State	971	937	96
City	485**	446	92**
Subtotal	5,749	5,481	95

Schools Not in CO Nonattainment Area (are within PM _{2.5} area)			
Badger Road Elementary	63	63	100
Pearl Creek Elementary	62	42	68
Ticasuk Brow Elementary	48	48	100
Weller Elementary	40	40	100
Subtotal	213	193	91
CO Nonattainment Area Government Total	5,536	5,288	96
Private Summary			
Lots with >250 plug-ins	2,438	2,318	95
Lots with <250 plug-ins	1,753	1,427	81
Subtotal	4,191	3,745	89
Nonattainment Area Government and Private Total	9,727	9,033	93

* Includes initial retrofit of employer parking of Lathrop High School.

** The City Manager could not provide an estimate of the total spaces. Therefore, an estimate was prepared by assuming that the City fraction equipped was the same as the Borough employee fraction (i.e., 92%).

Table 5.7-5 Fairbanks Nonattainment Area Additional Parking Lots Equipped with New Plug-Ins 2008-2015		
Facility	New Plug-Ins	Comments
West Valley High School	268	Project completed in 2013
North Pole High School	274	Project completed in 2013
Carlson Center	600	Project Timeframe 2015-2019
Big Dipper Ice Arena	300	Project Timeframe 2015-2019
North Pole Library	25	Project Timeframe 2015-2019
Fairbanks Library	50	Project Timeframe 2015-2019
Total	1517	

In addition to the Borough's emphasis on the installation of electrical infrastructure in parking lots, the Assembly passed an ordinanceⁱⁱ on April 12, 2001, that requires employers or businesses that have 275 or more parking spaces to provide power to electrical outlets at temperatures of 20 degrees F or lower. This ordinance is included in Appendix III.D.5.7 Key provisions addressed in the ordinance include:

- Parking lot owners are required to supply electricity to outlets between November 1 of each year and March 31 of the subsequent year.
- Power to parking lots may be cycled on and off every other hour during days when temperatures fall below 21° F.
- Employers or businesses subject to the ordinance are required to keep a logbook that documents the days on which power is supplied to electrical outlets. The logbooks are required to note special circumstances that prevented the supply of electricity to outlets. The logbooks need to be maintained and available for inspection for a five-year period.
- Employers and businesses subject to the ordinance must provide outlets for any new parking spaces intended for use by a motorist for longer than two hours.
- Employers or businesses subject to the ordinance must maintain electrical outlets in operable condition and they cannot decrease the number of parking spaces with outlets without prior approval of the Borough.
- The Borough can institute a civil action and obtain penalties not to exceed one thousand dollars for each violation.

To ensure the effectiveness of the ordinance, the Borough developed policies and procedures to govern its implementation, key elements include:

- Maintaining a list of parking lots with plug-ins that are subject to the program.
- Conducting surveys at least twice each winter on days when temperatures are below 20° F to determine whether outlets have power.
- Conducting surveys at least twice each winter to determine the number of vehicles that are plugged in at each of the parking lots subject to the ordinance.
- Maintaining records of the surveys and making that information along with data on the number of parking spaces equipped with plug-ins available to the public.
- Using the results of the surveys to determine the level of plug-in usage and related emissions benefits on an annual basis and making that information available to the public.

Since plug-ins are used extensively in the Borough when temperatures fall below 0° F, the principal benefit of the ordinance is to ensure that power is available at temperatures between 0 and +20° F. The Borough has conducted surveys in the past to determine if outlets have power each winter since the ordinance was implemented. The results, which are available at the Borough Air Quality Management Program Offices, show that employers have a high level of compliance with the ordinance.

Public education is an important part of this control strategy. The Borough encourages residents to plug in their vehicles at temperatures up to 20° F above zero. Engine block heaters are considered an essential component of winter driving in Fairbanks. It is estimated that a significant number of vehicles will not start at temperatures of 20° F below zero. Since -20° F or

colder temperatures are a frequent occurrence in winter, it was assumed that by encouraging motor vehicle operators to plug in at warmer temperatures, carbon monoxide and PM_{2.5} emissions would be reduced without creating an onerous burden on residents, as they already have engine block heaters. Subsequent test programs conducted by ADEC and the Borough confirmed the emission benefits of plugging-in at warmer temperatures. Television spots were produced to inform the public of the multiple benefits of plugging in at warmer temperatures. Although not scientific in nature, the messages were that plugging in:

1. Reduces engine wear, thus reducing vehicle maintenance costs;
2. Keeps the air pure and improves air quality;
3. Improves chances of complying with the federal Clean Air Act; and
4. Improves vehicle starting and reduces the idling time needed before driving.

Based on its historical success in implementing the plug-in program, the Borough continues public awareness as part of its implementation of an ordinance that requires owners of parking lots to provide power to electrical outlets for plug-ins at temperatures below 20°F.

5.7.2.7.2 Mass Transit System

The Borough Transportation Department operates a transit program called the Metropolitan Area Commuter System (MACS). The Borough began operating the MACS fixed route transit service in 1977. The MACS system is comprised of nine fixed routes in the cities of Fairbanks and North Pole, as well as other nearby communities. MACS service operates Monday through Friday from 6:00 AM to 9:45 PM and limited routes on Saturday from 8:45 AM to 7:45 PM. There is no Sunday service.

The Borough also operates a door-to-door paratransit service, VanTran, which began in 1988. The American Disabilities Act of 1990 (ADA) requires all public transit systems that provide fixed route bus and rail service to also provide an alternative transportation service (usually vans and small buses) for people with disabilities who cannot use fixed route bus and train service. This service is usually called "paratransit." The Van Tran service operates up to five nine-passenger vans and gives priority to ADA-certified disabled passengers within a ¼-mile zone around all MACS fixed routes, although will travel beyond the ¼-mile buffer on occasion. The vanpool system was updated in 2014 with a new approach to make it a successful operation.

Transit program ridership levels are presented in Table 5.7-6:

Table 5.7-6 Annual MACS Transit Ridership 2008 – 2013	
Year	MACS Number of Riders
2008	294,142
2009	357,964
2010	383,773
2011	391,799

Table 5.7-6 Annual MACS Transit Ridership 2008 – 2013	
2012	428,166
2013	475,875

The MACS Transit system has seen increased ridership over the last 6 years, and is projected to continue this trend through 2014, which is expected to exceed 500,000. The ridership information above shows the increase in ridership over that time period. In addition, the MACS Transit system has expanded in the last few years to include improved frequency on high ridership routes, and a new route serving Fort Wainwright. Other notable improvements include better bus stop facilities (bus stop signs and shelters) and a bus tracking system for the public. The FNSB intends to build more shelters with additional funding as it becomes available. The Borough also conducts active public outreach and education to encourage the use of mass transit.

5.7.2.7.3 DOT Anti-Idling and Diesel Emission Reductions

Within the transportation sector, heavy duty diesel activities are a source of PM_{2.5} in the FNSB. Emissions from vehicles are directly related to the amount of fuel used and the rate at which it is used. By reducing the need to have the vehicle engine on, emission reductions are achieved. This is directly related to reduction in fuel use resulting from how often the vehicle is left shut off versus left idling. In cold climates, it is often necessary to leave diesel vehicles idling to avoid performance issues. Anti-idling (idle reduction) technologies provide a means to reduce air pollution from transportation sources.

In July 2011, the Alaska Department of Transportation & Public Facilities (DOT&PF) began focusing on anti-idling and its potential benefits statewide. DOT&PF's State Equipment Fleet (SEF) and Maintenance & Operations (M&O) staff came together to formulate a long term plan for fleet management and to address on-going budget challenges. Implementation of an anti-idle policy was one of the top picks for optimizing resources and reducing costs. In November 2011, an M&O Directive was put in place to reduce idling to 10 minutes and heavy duty engines were set to turn off automatically at 10 minutes. The focus of the DOT&PF program was on large dump trucks and tractors where idle time was averaging over 30%. During a fleet optimization study, anti-idle was noted to be a way to save thousands of dollars (potentially millions of dollars) on fuel and preventative maintenance and DOT&PF began moving forward with a more visible anti-idling campaign within the department. According to the DOT&PF, reducing idling saves money, conserves fuel, reduces engine wear and maintenance, extends the life of heavy equipment, and helps to preserve the environment. DOT&PF is working to get the message out to every single DOT&PF employee that drives a state provided vehicle through a broad, consistent, and informative internal messaging campaign.

Building off of the DOT&PF's efforts to reduce idling, the ADEC and DOT&PF have developed a Fairbanks specific CMAQ-funded pilot program intended to reduce heavy duty diesel emissions in the nonattainment area through anti-idling, maintenance, and other emission reduction opportunities. The focus of the program is to expand the use of auxiliary heaters to

reduce idle time thereby reducing emissions and providing an associated cost saving due to less use of diesel fuel. The program has the following elements:

1. Provide support for the existing DOT&PF anti-idling pilot project currently underway in Fairbanks by assisting with telemetric purchase and installation, installation of additional heaters, and assisting with education and training. With assistance from this program, the DOT&PF pilot program will be fully functional and will be able to provide additional information to assist in expanding anti-idling to others.
2. Expand anti-idling to other heavy duty vehicles within the FNSB nonattainment area; state fleets, local government fleets, private fleets, and commercial fleets. This includes working with the heavy duty fleet owners by providing education materials and training, contracting for installations of auxiliary heaters, and providing incentives for participation including purchasing of heaters and auxiliary equipment.
3. During installation of program auxiliary heaters, conduct an inspection of the vehicle to identify where additional emission reduction possibilities could be implemented – such as maintenance (filter, tune-up), if vehicle is a candidate for retrofit technologies or repower, and/or candidate for additional emission reduction equipment (particulate matter traps). Partnership and incentive opportunities with vehicle fleet owners will be explored to further emission reduction benefits while a vehicle is in shop.

This pilot program is intended to develop into an on-going program with respect to new installation of heaters and emission reduction equipment on diesel equipment within the nonattainment area. Overall operations and maintenance of the new equipment will be the responsibility of fleet owners. Original startup costs for new fleets (new installation of heaters, initial maintenance, or initial retrofits, additional emission reduction technologies) coming into the program are intended to be covered entirely or in part through the use of CMAQ funds. Once initiated, future installations within a fleet would be limited to actual heater installations and/or telemetrics only.

Project funds would be provided for first time installations only, not for replacement of worn out heaters. The cost of a single auxiliary heater installation is approximately \$3500. Conservative estimates indicate auxiliary heaters may save 30% in fuel costs alone along with a 30% reduction in emissions. The cost of the fuel alone, would easily pay for any future replacement of the auxiliary heater and software. The life of the auxiliary heaters is more than ten years, so continued anti-idling use will provide benefits (emission reductions and fuel savings) for the life of the equipment.

5.7.2.7.4 ADEC Diesel Emission Reduction Efforts

ADEC has utilized American Recovery and Reinvestment Act of 2009 (ARRA) and Diesel Emission Reduction Act of 2005 (DERA) funding to reduce emissions in the non-attainment area through several projects.

A 2009 ARRA funded project allowed DOT&PF to replace three 1985 Autocar KM64 trucks with three 2010 International 7600SFA Workstar 8 cy dump trucks equipped with snow plows and belly blades. The new vehicles meet the 2010 clean diesel requirements and are equipped

with EGR and DPF technology resulting in lowered diesel emissions. The three trucks began service in August of 2010 and the three older engines were rendered inoperable. The 2009 ARRA Locomotive Overhauls with Emissions Upgrades project purchased and installed emissions upgrade kits and automatic engine start-stop technology on two engines operated by the Alaska Railroad Corporation. The upgraded engines meet the Tier 0+ emissions requirements. These engines operate throughout the Alaska Railroad Corporation (ARRC) track system including within the nonattainment area.

In 2013, DEC partnered with DOT&PF using DERA grant funding to retrofit 23 diesel vehicles with anti-idling technology (as described above). The direct-fired heaters allow operators to maintain warm cabin conditions in cold conditions without idling the main engines. Reduction in idle time was estimated to be 4,020 hours per year with a savings of 3,015 to 4,820 gallons of diesel fuel assuming an estimated 0.75-1.2 gallons of fuel consumed per hour of idling. The DERA program was extended through 2016 in 2010 and if funding continues, future projects may also implement clean diesel technology in the nonattainment area.

5.7.2.7.5 Federal Diesel Emission Reduction Programs

The federal government has multiple regulations and initiatives that will help address emissions in the non-attainment area. EPA's National Clean Diesel Campaign works with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local officials to reduce diesel emissions. The National Clean Diesel Campaign offers Diesel Emission Reduction Act funding opportunities through the competitive National Clean Diesel Funding Assistance Program to fund retrofit projects using Smartway verified diesel emission reduction technologies and the non-competitive State Clean Diesel Grant Program that funds grant and loan projects for clean diesel projects. Smartway is a public-private initiative between EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both greenhouse gas emissions and air pollution) of the goods movement supply chains. Smartway evaluates emissions control technologies and determines the eligibility of individual technologies for funding under DERA grants. Federal emissions standards for exhaust and evaporative emissions exist for Light-Duty Vehicles, Trucks, and Motorcycles, Heavy-Duty Engines and Vehicles, and Non-road Engines and Vehicles. These emissions standards on manufacturers have incrementally reduced the amount of emissions permitted from each type of regulated engine, resulting in cleaner diesel engines. Phase 3 emissions standards will take effect starting in 2017.

5.7.2.7.6 Federal Motor Vehicle Control Program

The Federal Motor Vehicle Control Program (FMVCP) is the federal certification program that requires all new cars sold in 49 states to meet certain emission standards. (California is excluded because it has its own state-mandated certification program.) These standards vary according to vehicle age, with the newer vehicles required to be considerably cleaner than older models. The result of more stringent emission standards over time from newly manufactured vehicles results in a drop in overall emissions from the vehicle fleet in Fairbanks, as older, dirtier vehicles are replaced with newer, cleaner vehicles. Carbon monoxide cold temperature (down to +20° F)

emission standards phased in between 1994 and 1996 for passenger cars and light duty trucks significantly enhanced control system performance for all pollutants at the temperatures associated with cold climate exceedances.

Tier 2 emission standards for passenger cars, light trucks and larger passenger vehicles are focused on reducing emissions most responsible for ozone and particulate matter (i.e., nitrogen oxide or NO_x and hydrocarbon or HC emissions). Mandated reductions in the sulfur content of gasoline further enhanced the performance of motor vehicle emission control systems. Starting in 2017, Tier 3 will further reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. Additional reductions in gasoline sulfur will make emission control systems more effective for both existing and new vehicles, and enable more stringent vehicle emissions standards. EPA's MOVES model has been used to assess the benefits of the FMCVP and Tier 2 emission standards. Insufficient time has been available to use the recently released MOVES2014 to incorporate the benefits of Tier 3 controls on the motor vehicle emissions in the SIP. Subsequent inventory analysis will be based on MOVES2014 and subsequent available releases of the model.

5.7.2.8 Open Burning

5.7.2.8.1 Winter Season Open Burning Ban

Since the 1970s the Fairbanks North Star Borough had an ordinance to restrict wintertime open burning. In 2013, the Borough Assembly repealed that ordinance in response to a voter initiative that restricted the Borough's authorities to regulate burning. As a result, to ensure that smoke emissions from open burning did not increase in the future, ADEC revised its regulations. ADEC implements open burning regulations found in 18 AAC 50.065. Within the existing regulations (18 AAC 50.065(e)), ADEC can and does prohibit open burning in an area during an air quality advisory (see 18 AAC 50.245).

To further strengthen this requirement inside the nonattainment area by reducing confusion on whether open burning is permitted on a given day and ensuring greater compliance and less smoke emissions in the airshed, ADEC revised 18 AAC 50.065(f) to prohibit open burning during the winter season between November 1 and March 31. A copy of the state open burning regulation, 18 AAC 50.065 is included in Appendix III.D.5.7.

In response to public comments on the 2014 regulation revision, ADEC considered a longer season for open burning restrictions. In analyzing the data available, ADEC found that in the months of October and April conditions have not shown a prevalence for significant air quality deterioration as a result of normal open burning. As a result, ADEC did not lengthen the seasonal restriction on open burning to include those two months. Problem open burns during these "shoulder seasons" can typically be addressed through the use of the Department's other open burning and air pollution regulations. Concerns raised by the public related to the potential for the proposed regulations to prohibit small winter fires for recreational warming and ceremonial purposes were addressed through revisions to the definition of open burning that would exclude these small fires from the prohibition. The department also provided the flexibility for a local air program to institute an open burn permit program in lieu of the seasonal

restriction, if they demonstrate the program will not cause or contribute to violations of the PM_{2.5} ambient air quality standards and the program has been adopted into the State Implementation Plan for the area. It should be noted, that this flexibility does not grant the local air program any authorities not provided to it by its citizens. In recent years, the Borough has not had the authority to establish a program in place of the department's seasonal restriction.

5.7.2.9 ADEC Stationary Source Program

The CAA section 172 (c) requirements for nonattainment areas apply to the PM_{2.5} nonattainment area. Under this attainment plan, the requirements of CAA Part D, New Source Review (NSR) apply for major stationary sources. Section 302 of the CAA (42 U.S. C. 7602) defines a major stationary source as any stationary facility or source of air pollutants that directly emits, or has the potential to emit, 100 tons per year of any pollutant. Permits for construction and operation of new or modified major stationary sources within the nonattainment area must be approved through the NSR program. Within the FNSB, ADEC is responsible for issuing construction and Title V operating permits. ADEC has incorporated the requirements for Prevention of Significant Deterioration (PSD) and nonattainment New Source Review in 18 AAC 50, Article 3. ADEC actively implements its permit programs. The Air Quality Division issues and amends permits, conducts inspections, reviews reports from industry, provides compliance assistance, and takes enforcement actions when needed.

Each stationary source in the nonattainment area was the subject of a Reasonably Achievable Control Technology (RACT) analysis. The results of that analysis are found in Appendix III.D.5.7. The emission units for which RACT determinations were made include boilers, process heaters, and turbines. The direct PM_{2.5} RACT is a fabric filter system for boilers. Additional PM_{2.5} controls are considered unreasonable for process heaters and turbines. RACT for SO₂ emissions is the use of current fuel for all of the fuel combustion sources. RACT controls were not recommended for NO_x because control of NO_x is not an efficient or cost effective method for reducing ambient PM_{2.5} in Fairbanks.

All of the emission units that were reviewed are already implementing the emission control techniques identified as RACT. All of the coal-fired units are already equipped with fabric filters, and Alaskan coal has a very low sulfur content. The costs associated with switching from high- to low-sulfur liquid fuels were too high to be deemed to be source specific RACT for those sources currently using liquid fuels.

Stationary source emissions in the nonattainment area have been modeled in the attainment demonstration at "potential to emit" levels from their existing air quality permits. Additionally, historical actual emissions were modeled to determine impacts during the baseline period and were projected to 2015 to provide a potential lower bound on stationary source impacts. This is discussed further in the Modeling and Weight of Evidence Section (5.8).

5.7.2.10 Calculating the Benefits of Control Measures

Calculation of emission benefits for key control measures are summarized within Section 5.6 and are discussed in detail in Appendix III.D.5.6. Generally speaking, emission benefits were calculated for those measures for which up-to-date, quantitative program activity data were available. Programs/measures for which data were not readily available were excluded from the quantitative emission benefits calculations but were collectively accounted for with credits given to voluntary measures. (Section 5.8 discussed how voluntary measures and their allowed credits were accounted for in the attainment modeling in accordance with EPA guidance.)

Table 5.7-7 summarizes how each of the control measures discussed earlier in this section were accounted for within the SIP. Check marks in the “Voluntary Measure” column identify those measures for which benefits were not individually quantified, but for which collective voluntary program credits were assigned in the attainment modeling. The “Quantified Benefits” column identified those remaining measures for which emission benefits were individually quantified in the emissions inventory. The latter two columns identify the location in inventory where the measure benefits were applied. “Baseline” refers to measures whose benefits were accounted for within the Baseline or Projected Baseline inventory. “Control” indicates those measures for which benefits were applied in the Control inventories, reflecting emission reductions from measures being adopted or expected to occur. (Within the inventory discussion in Section 5.6, only benefits for the measures under the Control column were explicitly reported. Benefits for those measures accounted for in the Baseline and Projected Baseline inventories, though quantified, were not individually reported in Section 5.6, but were included in the overall estimates of Baseline and Projected Baseline emissions.)

Table 5.7-7 Control Measures for Which Emission Benefits were Quantified				
Control Measure/Program	Voluntary Measure	Quantified Benefits	Location in Inventory	
			Baseline	Control (year)
Space Heating and Solid Fuel Heating Controls				
Solid Fuel-Fired Heating Device Upgrades and Emission Standards		✓		✓(2015)
Improving Solid Fuel-Fired Device Operations	✓			
Encouraging Reduced Use of Solid Fuel-Fired Heating During Air Pollution Episodes	✓			
AHFC Energy Programs		✓	✓	
Expanded Availability and Use of Natural Gas		✓		✓(2019)
Transportation Control Strategies				
Expanded Availability of Plug-Ins	✓			
Mass Transit System	✓			
DOT Anti-Idling and Diesel Emission Reductions	✓			
ADEC Diesel Emission Reduction Efforts	✓			
Federal Diesel Emission Reduction Programs		✓	✓	
Federal Motor Vehicle Control Program		✓	✓	

Table 5.7-7				
Control Measures for Which Emission Benefits were Quantified				
<i>Open Burning</i>				
Winter Season Open Burning Ban		✓	✓	
<i>Point Sources</i>				
RACT (Appendix III.D.5.7)		✓		

Regardless of how emission reductions are credited within the planning framework, all measures that reduce PM_{2.5} from local sources are helpful in achieving the overall goal of bringing the area into attainment of the NAAQS.

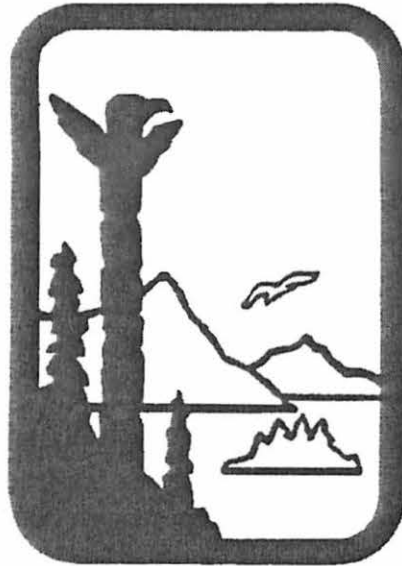
5.7.2.11 Future Re-Evaluation of Control Strategies

The FNSB and ADEC recognize that in the long term the mix of PM_{2.5} control strategies implemented in Fairbanks could warrant revision. This would be accomplished through a future attainment or maintenance plan revision and subject to approval by EPA. Given the analyses of PM_{2.5} emissions and PM_{2.5} air monitoring data in this attainment plan, the agencies commit to re-evaluating the entire mix of control measures as early as 2016, following the 2015 attainment deadline, to determine whether the measures have succeeded as planned in reducing emissions and improving air quality. This evaluation could result in measures being removed or added to the plan depending on the outcome of the analyses prepared at that time. All changes to the air quality plan must be approved by EPA.

ⁱ Spreadsheet of Parking Spaces Equipped with Plug-ins, transmitted from Leah Bobick to Bob Dulla of Sierra Research, dated April 9, 2001.

ⁱⁱ Ordinance No. 2001-17, "An Ordinance Mandating a Fairbanks North Star Borough Motor Vehicle Plug-in Program."

**ALASKA DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**



Amendments to:

State Air Quality Control Plan

Vol. II: III.D.5.11

Fairbanks Emergency Episode Plan

Adopted

December 8, 2017

Bill Walker, Governor

Larry Hartig, Commissioner

5.11. Fairbanks Emergency Episode Plan

Section 127(a) of the 1990 Clean Air Act Amendments (CAAA) requires all SIPs to include measures providing public notification of instances or areas in which any NAAQS is exceeded, and of the health hazards associated with such pollution. EPA previously issued guidance on the adoption of emergency episode plans designed to keep air pollution concentrations below those levels considered to have adverse consequences on human health.

5.11.1. Forecasting PM_{2.5} Air Quality Episodes

The Fairbanks North Star Borough (FNSB) provides daily air quality forecasts using EPA's Air Quality Index (AQI) on its web site at <http://co.fairbanks.ak.us/airquality/>. The Borough posts separate AQI forecasts for Fairbanks and North Pole. The forecasts are based on PM_{2.5} data collected from the ambient monitoring/meteorological reporting network and supplemented by a predictive model developed specifically for the purpose of forecasting PM_{2.5} events in the community.

The AQI is an index for reporting daily air quality. It provides information on how clean or polluted the air is, what associated health effects may be of concern, and actions to take to reduce exposure and health impacts. The AQI provides six categories that correspond to a different level of health concern:

- Good – Air quality is satisfactory and poses little or no health risk.
- Moderate – Air quality is acceptable; however, pollution may pose a moderate health concern for a very small number of individuals.
- Unhealthy for Sensitive Groups – Members of sensitive groups (like elderly, children, those with heart or lung disease) may experience health effects, but the general public is unlikely to be affected.
- Unhealthy – Everyone may begin to experience health effects. Members of sensitive groups may experience more serious health effects.
- Very Unhealthy – Everyone may experience more serious health effects.
- Hazardous – The entire population is even more likely to be affected by serious health effects.

To support this function, FNSB uses an air quality forecasting tool called the AQ Alert Model that projects PM_{2.5} concentrations over a four day window (the remainder of today, tomorrow, and the following two days). The model outputs include the predicted values for PM_{2.5} concentrations (rolling 12-hour averages and 24-hour daily averages) at each monitor site over the next four days along with the weather conditions forecast by National Weather Service (NWS) as context for understanding the PM_{2.5} predictions. To accomplish this, the model accesses in near-real time a wide range of data on recent PM_{2.5} concentrations and meteorological conditions at the monitor sites, surface observations and upper air soundings taken at the Fairbanks airport, and forecasts of surface and upper air conditions from the Global Forecast System (GFS) weather prediction model operated by the National Weather Service. These data are combined within the model to drive a statistical representation of the relationship between meteorological conditions and ambient PM_{2.5} concentrations. The statistical model is

based on a detailed analysis of data from the FNSB area and is updated annually to account for changes in consumer behavior that influence PM_{2.5} concentrations. FNSB recently completed an assessment of the model's performance in the 2013-2014 winter and found that 88 percent of the time it correctly predicted whether an exceedance would occur on the following day.

Air quality specialists at FNSB use the model during the day to monitor changing air quality conditions at the monitors. Forecasts of future PM_{2.5} levels can be generated at any time but are normally prepared in the hour preceding 5 pm local time. Air quality specialists use the modeled forecasts as one input to the decision-making process for issuing an air quality advisory. Other inputs are the afternoon forecast of dispersion conditions issued by the NWS forecasting office in Fairbanks and the assessment by FNSB personnel of many factors based on their long-standing experience in observing air quality in Fairbanks, including the rate of change in concentrations at the monitors and the location and movement of weather fronts seen in satellite photos.

5.11.2. Borough Episode Program

In June 2010, the FNSB Assembly adopted revisions to the Borough's Code to establish the local PM_{2.5} Air Quality Control Program in Chapter 8.21.¹ A copy of this ordinance, 2010-28, is included in Appendix III.D.5.12. The PM_{2.5} Air Quality Control Program chapter has undergone significant changes beginning in 2015. Ordinances modifying the chapter include 2015-01, 2015-18, 2015-29, 2015-73, 2016-21, 2016-37, 2016-20-1A, and 2017-18.^{2,3,4,5,6,7,8,9,10} Ordinance 2016-30 renumbered and reorganized Borough Code, resulting in the relocation of the PM_{2.5} Air Quality Control Program chapter from Title 8 Chapter 21 to Title 21 Chapter 28.¹¹ The Borough ordinances that have been adopted following the adoption of the Fairbanks moderate plan have been inserted into Appendix III.D.5.12 – Assurance of Adequacy.

Borough code, 21.28.050, requires the Borough to issue daily weekday PM_{2.5} forecasts during the winter months of October through March before 4:30 pm. Air quality staff evaluate hourly and 24-hour average air quality monitoring and meteorological data when making forecasts. If the PM_{2.5} concentration has exceeded or is forecasted to exceed the threshold for an alert and is forecasted to remain at that level for 12 hours or more, then the Borough declares an air alert. Alerts and warnings implement a multi-staged episode program that progressively restricts different classes of devices based on the severity of the forecasted air quality conditions. The episode program does not affect the whole nonattainment area, only the Borough's 'Air Quality Control Zone' which encompasses the State's Fairbanks and North Pole zones but excludes the Goldstream zone. Alerts can apply to the whole 'Air Quality Control Zone' or to one or more sub-

¹ Fairbanks North Star Borough Assembly Ordinance No. 2010-28, June 10, 2010.

² Fairbanks North Star Borough Assembly Ordinance No. 2015-01, February 27, 2015

³ Fairbanks North Star Borough Assembly Ordinance No. 2015-18, April 23, 2015

⁴ Fairbanks North Star Borough Assembly Ordinance No. 2015-29, June 25, 2015

⁵ Fairbanks North Star Borough Assembly Ordinance No. 2015-73, January 14, 2016

⁶ Fairbanks North Star Borough Assembly Ordinance No. 2016-21, May 4, 2016

⁷ Fairbanks North Star Borough Assembly Ordinance No. 2016-37, July 28, 2016

⁸ Fairbanks North Star Borough Assembly Ordinance No. 2016-20-1A, August 11, 2016

⁹ Fairbanks North Star Borough Assembly Ordinance No. 2017-18, March 9, 2017

¹⁰ Fairbanks North Star Borough Assembly Ordinance No. 2017-44, June 19, 2017

¹¹ Fairbanks North Star Borough Assembly Ordinance No. 2016-30, April 28, 2016

areas. When a local air quality alert is issued, the Borough notifies local media to ensure that the declared alert is broadcast to the public. This notification includes the PM_{2.5} forecast, episode curtailment requirements, and additional information on how the public can further reduce PM_{2.5} emissions. Tables 5.11-1 and 5.11-2 detail the advisory and alert requirements in 21.28.050 as amended through June 19, 2017 in Ordinance 2017-44.

Table 5.11-1 Air Quality Episode Thresholds and Exceptions

Episode Feature	Stage 1 Air Alert	Stage 2 Air Alert
PM _{2.5} Threshold, micrograms per cubic meter, (µg/m ³)	25	35
Exceptions During a Power Outage	Yes	Yes

Table 5.11-2 PM_{2.5} Air Quality Episode Appliance-Specific or Waiver-Specific Actions

Appliance Type Or Waiver Type	Stage 1 Air Alert	Stage 2 Air Alert
No other adequate source of heat (NOASH) designation, meets other requirements in 21.28.060	Operation Prohibited except Borough Listed Solid Fuel Burning Appliances (SFBA)	Operation Prohibited except Borough Listed Solid Fuel Burning Appliances (SFBA)
Approved Stage 1 Waiver, meets other requirements in 21.28.060	Operation Prohibited except Borough Listed Solid Fuel Burning Appliances (SFBA)	Operation Prohibited
Wood Stoves	Operation Prohibited	Operation Prohibited
Coal Stoves	Operation Prohibited	Operation Prohibited
Wood-fired hydronic heaters	Operation Prohibited	Operation Prohibited
Wood-fired Furnaces	Operation Prohibited	Operation Prohibited
Coal-fired Hydronic Heaters	Operation Prohibited	Operation Prohibited
Coal-fired Furnaces	Operation Prohibited	Operation Prohibited
Fireplace Inserts	Operation Prohibited	Operation Prohibited
Pellet Fuel Burning Appliances	Operation Prohibited	Operation Prohibited
Masonry Heaters	Operation Prohibited	Operation Prohibited

Cook Stoves	Operation Prohibited	Operation Prohibited
Fireplaces	Operation Prohibited	Operation Prohibited
Waste Oil Burning Appliances	Operation Prohibited	Operation Prohibited
Non-Permitted Outdoor Incinerators, Burn Barrels	Operation Prohibited	Operation Prohibited
Campfires, Bonfires, Ceremonial Fires, Fire pits	Voluntary Curtailment	Operation Prohibited

Ordinance 2015-01 grants the FNSB Air Quality Division the ability to receive, log, and investigate complaints as well as issue warnings and citations for verified violations of FNSB code. In June of 2015 the division added two complaint investigation and response staff members. These two positions utilize a mobile air quality monitoring vehicle (sniffer) to verify compliance with the requirements in 21.28.030 D, PM_{2.5} Emissions Crossing Property Lines. 21.28.030 D states that no person shall cause or permit particulate emissions from a nonmobile source to impact the resident(s) of a neighboring property through creation of an emissions plume that: crosses a property line, is observable using EPA Method 22, and is 25µg/m³ greater than the surrounding immediate vicinity background PM_{2.5}. Additionally, camera based opacity reading service (EPA Method ALT 082) may be used to verify air quality violations. Once verified, the staff members have the ability to engage the resident, discuss emissions reduction strategies, or issue mandatory warnings and citations in accordance with FNSB Code 21.28.030 and 1.20.080. Fines range from \$100 to \$1,000 depending on violation and number of offenses.

Property owners or managers may obtain a “No Other Adequate Source of Heat” (NOASH) waiver to Stage 1 or Stage 2 air alert burn cessation requirements if a property relies on a solid fuel-fired heating device as its sole source of heat. A Stage 1 Waiver is granted to a property owner or manager who verifies that the solid fuel burning appliance (SFBA) being operated during a Stage 1 air alert is a Borough listed appliance.¹² To ensure no new construction occurs that would be eligible for a NOASH waiver, Ordinance 2016-37 limits the waiver eligibility to properties constructed prior to December 31, 2016. NOASH applicants are urged to participate in the Borough change out program to help reduce emissions by installing an eligible wood or pellet-fired device or replace a solid fuel-fired device with a non solid fuel-fired device.

On August 11, 2016, the assembly passed Ordinance 2016-20-1A to allow design and operation of a “low cost” air quality monitoring network in the Air Quality Control Zone. This network will be comprised, initially, of six Thermo Scientific pDR-1500 monitors and 20 MetOne Neighborhood monitors. A pDR-1500 network will monitor air quality throughout the Air Quality Control Zone and supplement regulatory monitor data when issuing advisories and alerts and tracking air quality trends. A network of MetOne Neighborhood monitors will be used to locate and identify high-emitting sources by deploying a small grid of monitors centered around “Hot Spot” areas identified by the “sniffer vehicle” or through complaints. Staff will investigate

¹² Fairbanks North Slope Borough Assembly Ordinance No. 2017-44, June 19, 2017

high-emitting sources and seek compliance with regulations through education and will issue warnings or citations on a case-by-case basis. The MetOne monitors will be relocated to other hot spot areas in the Air Quality Control Zone as needed. Future operation of this air quality monitoring network is contingent on FNSB appropriations. This enforcement strategy will focus limited resources to areas that are most affected by poor air quality as identified through complaints, sniffer vehicle data, and other information. The ability to detect large emitters in nighttime conditions with monitoring equipment will provide for more effective enforcement of the Borough episode program than visual detection of smoke alone, especially when a smoke stack's emissions are obscured or cannot be seen or photographed from a public right-of-way. Locating and engaging high-polluting device operators with enforcement efforts will provide greater emission reductions than traditional program enforcement methods alone.

In 2014, prior to Ordinance 2015-01 which codifies the mandatory episode program described above, the Fairbanks North Star Borough established a voluntary burning curtailment program (VBCP). The VBCP was designed to encourage, incentivize, and facilitate the voluntary cessation of the use of wood burning appliances (i.e., wood stoves, wood-fired hydronic heaters, wood-fired furnaces, fireplaces, fireplace inserts, masonry heaters or pellet fuel burning appliances) in the nonattainment area during air quality episodes. It is recognized that it will be difficult or impossible for some households to participate in this program (e.g., those that heat solely with wood or for which wood is a necessary supplement during periods of cold weather). Therefore, this program was intended for households that were able to use space heating alternatives with significantly lower PM_{2.5} emissions, including those fueled by gas, oil, electricity, propane or district heat. Then in 2017 the Borough repealed the VBCP in order to strengthen its burn cessation program by lowering the concentration where a burn cessation would be called.

The VBCP-consisted of five separate components; an Alert System, Social Media, Public Awareness, Marketing, and Incentive program.

- **Alert System:** Alert Media selected as the notification platform. Alert messages during episodes are sent out through email, text messaging and social media.
- **Social Media:** Alerts, daily forecast, and program signup are available via Facebook.
- **Public Awareness:** 4 updateable reader-boards and 10 static sandwich board signs placed alongside roads in Fairbanks and North Pole displaying VBCP activity.
- **Marketing:** Radio, TV, and Newspaper advertising to create awareness of the VBCP and current air quality.
- **Incentives:** The Borough will recognize all participants of the program at the end of the year through a Fairbanks Daily Newsminer advertisement.

While the VBCP program has ended, the public involvement elements above are still being utilized for outreach for the mandatory curtailment program.

5.11.3. State Episode Program

In addition to the Borough AQI forecast and local episode actions, ADEC has also been implementing actions to address high concentration episodes. ADEC's statewide PM_{2.5} air episode and air advisory requirements are framed in regulation at 18 AAC 50.246. The regulations split the overall emergency episode response approaches into two categories: air episodes and air advisories. PM_{2.5} air episodes rely on air monitoring data and are called when concentrations reach specific thresholds defined in the regulation. Air advisories are not strictly reliant on air monitoring data and may be called when the department finds that, in its judgment, that air quality conditions exist that might threaten public health; the advisory regulation allows for ADEC response to poor air quality in areas where no air monitors may exist. These two categories have differing response features and trigger different supporting requirements within the state regulations. In both cases, like the Borough, ADEC publicizes the air quality episode or advisory and any actions to be taken to protect public health. However, 18 AAC 50.246 also allows ADEC to take action upon a Borough air quality alert. 18 AAC 50.246 provides that "the episode thresholds and actions prescribed for any area that has a local air quality plan included in the *State Air Quality Control Plan* adopted by reference in 18 AAC 50.030 must be consistent with the emergency episode provisions included in that plan. To avoid duplication of effort, ADEC and the Borough clarify their respective roles under 18 AAC 50.246 through the Air Quality Memorandum of Understanding (MOU). As the Borough episode program has evolved to address the PM_{2.5} pollution concerns of the local area, it provides for implementing local air alerts at lower concentration thresholds than the statewide PM_{2.5} episode program presented in this section. As a result, the ADEC implements episodes within the nonattainment area using the local thresholds identified in Section 5.11.2.

State air episodes for PM_{2.5} are defined in 18 AAC 50.246. Formal episodes may be triggered if the concentration of an air pollutant in the ambient air has reached, or is likely in the immediate future to reach, any of the concentrations established in Table 6a of the regulation. However, as noted above, DEC under the provisions of 18 AAC 50.246, will declare episodes in the FNSB nonattainment area based on the local area thresholds identified in Table 5.11-1. Prior to the implementation of more stringent local episode program thresholds, ADEC relied on the statewide formal episode concentrations for PM_{2.5} adopted in 2014, updated in 2016, and adopted in 2017 described in Table 5.11-3 as follows:

Table 5.11-3
State of Alaska PM_{2.5} Episode Levels

Episode Type	24-hour Average PM _{2.5} Concentration (µg/m ³) (micrograms per cubic meter)
Air Alert Episode	35.5
Air Warning Episode	55.5
Air Emergency Episode	150.5

During a formal air episode, in addition to providing information on protecting an individual's health, ADEC will provide information on how an individual may assist in reducing emissions. In some instances, ADEC may prescribe and publicize opacity limits for solid fuel-fired heating devices as described further below. ADEC tailors its response and curtailment actions to address the specific conditions surrounding a specific air pollution event. The following state regulations are also triggered by the declaration of an air episode (in addition to any regulations triggered by the declaration of an air quality advisory as described below):

- 18 AAC 50.075 (d) – (e)

(d) A person may operate a solid fuel-fired heating device in an area for which the department has declared a PM-2.5 air quality episode under 18 AAC 50.246 or under emergency episode provisions included in a local air quality plan incorporated in the *State Air Quality Control Plan*, adopted by reference in 18 AAC 50.030, only if

(1) visible emissions or opacity from the solid fuel-fired heating device is below the opacity limits identified in the episode announcement for that area as defined in the *State Air Quality Control Plan*, adopted by reference in 18 AAC 50.030; or

(2) the owner or operator of the solid fuel-fired heating device obtains a written temporary waiver from the department or local air quality control program from the opacity limits identified in the episode announcement; the department or local air quality program may grant a temporary waiver after considering

(A) financial hardship information provided by the owner or operator;

(B) technical feasibility information provided by the owner or operator;

(C) potential impact to locations with populations sensitive to exposure to PM-2.5; locations under this subparagraph include hospitals, schools, child care facilities, health clinics, long-term care facilities, assisted living homes, and senior centers;

(D) mitigation measures implemented by the owner or operator to prevent adverse health impacts to individuals sensitive to exposure to PM-2.5; and

(E) the contribution of the device to the exceedance of the PM-2.5 concentration triggering the episode announcement.

(3) the department has not prohibited operation under 18 AAC 50.075(e).

(e) The department may prohibit operation of a solid fuel-fired heating device in an area for which the department has declared a PM-2.5 air quality episode under emergency episode provisions included in a local air quality plan incorporated in the *State Air Quality Control Plan*, adopted by reference in 18 AAC 50.030, only if

(1) the announcement identifies the air quality zone(s); and

(2) the announcement identifies exemptions as identified in the *State Air Quality Control Plan*, adopted by reference in 18 AAC 50.030.

Air advisories are established under 18 AAC 50.245 and 18 AAC 50.246(b), which sets forth that “the department will declare an air quality advisory if, in its judgment, air quality or atmospheric dispersion conditions exist that might threaten public health”. If the department declares an air quality advisory it may request voluntary emission curtailment actions. For PM_{2.5}, the department declares air advisories in the FNSB nonattainment area when pollutant concentrations have reached, or are expected to reach, 25 µg/m³ using a 24-hr rolling average of

1-hr BAM or other DEC-approved monitoring equipment data indicating air quality conditions exist that might threaten public health or, alternatively, using meteorological data indicating atmospheric dispersion conditions exist that might threaten public health.

Table 5.11-4
FNSB Nonattainment Area PM_{2.5} Advisory/Alert Level

Type	24-hour Average PM _{2.5} Concentration (µg/m ³)
Advisory/Alert	25

DEC may exclude individual air quality zones from an advisory/alert announcement when air quality conditions in that zone are not expected to exceed 25 µg/m³ based on monitoring or meteorological data. The following specific state regulations are triggered by the declaration of an air quality advisory:

- 18 AAC 50.065(e)

“Open burning is prohibited in an area if the department declares an air quality advisory under 18 AAC 50.245 or 18 AAC 50.246, stating that burning is not permitted in that area for that day. This advisory will be based on a determination that there is or is likely to be inadequate air ventilation to maintain the standards set by 18 AAC 50.010. The department will make reasonable efforts to ensure that the advisory is broadcast on local radio or television.”

- 18 AAC 50.075(a)(2)

“A person may not operate a solid fuel fired heating device in a manner that causes

- (1) black smoke; or
- (2) visible emissions that exceed 20 percent opacity for more than 6 minutes in any one hour, except during the first 15 minutes after initial firing of the unit, in an area for which an air quality advisory is in effect under 18 AAC 50.245 or 18 AAC 50.246. Visible emissions are measured following opacity reading procedures as required by Vol. 3., sec. IV-3, Appendix IV-3, of the state air quality control plan, adopted by reference in 18 AAC 50.030;

Given the history of significant wintertime air quality episodes within the FNSB PM_{2.5} nonattainment area and concerns of local residents related to the implementation of wood heating curtailment during air quality episodes, ADEC defined an approach for allowing solid fuel-fired devices to operate during an episode provided they meet an opacity level during formal air quality episodes inside the nonattainment area under 18 AAC 50.075(d). During 2015, the FNSB established local curtailment requirements. In 2016, ADEC adopted similar curtailment requirements into this SIP. The existing ADEC opacity requirements will remain in effect in any instances when solid fuel-fired heating curtailments are not announced during air episodes.

Solid Fuel-Fired Device Opacity Levels during Air Quality Episodes and Advisories Under 18 AAC 50.075(d)

The visible emission regulations in 18 AAC 50.075(d) apply specific opacity levels during formal air quality episodes and advisories. Properly operated, efficient solid-fueled heating devices using the proper fuels should be able to meet the stated opacity limits during an episode or advisory. Efficient operations not only reduce air pollution but allow for the burning of less wood, an economic or time savings to residents who buy or cut wood.

In the FNSB nonattainment area, solid fuel-fired heating devices are subject to a more stringent requirement; a 20% visible emission or opacity limit must be met during air quality advisories/alerts in addition to episodes. Should ADEC determine that the specific conditions surrounding a specific air pollution event within the FNSB nonattainment area warrant an announcement for opacity restrictions for solid fuel-fired heating devices, ADEC will issue an announcement that identifies the 20% opacity limit that is in effect. For purposes of implementing the opacity regulations, PM_{2.5} episodes and advisories within the FNSB PM_{2.5} nonattainment area are treated equally. The opacity limit for the FNSB non-attainment area during an air episode or advisory are as follows in Table 5.11-5:

**Table 5.11-5
FNSB Nonattainment Area Opacity Limits during Air Pollution Events**

Opacity Limit	PM _{2.5} Concentration (µg/m ³)
20%	> 25 (24-hour average)

For compliance and enforcement purposes, opacity is measured using EPA method 9, as modified by following opacity reading procedures as required by Vol. 3., sec. IV-3, Appendix IV-3, of the state air quality control plan, adopted by reference in 18 AAC 50.030, by a person who has passed and is current in their Method 9 certification. DEC has also adopted into regulation the option to use a camera-based EPA method 9 alternative (EPA Method ALT-082) and may consider using camera based opacity measurements in the future.

Upon observing an opacity limit exceedance during a declared episode, the department will attempt to provide education on the correct maintenance and operation of the solid fuel-fired device. Education could also include the use of proper fuels. If education does not provide a remedy to the opacity exceedances, the department may issue a Notice of Violation, Abatement Order, or may pursue other administrative enforcement remedies.

In July of 2017, 18 AAC 50.077 was amended to add subsection (f) to address opacity during operations for solid fuel-fired devices.

- 18 AAC 50.075(f)

“A solid fuel-fired heating device located in an area identified in 18 AAC 50.015(b)(3) shall be operated so that the visible emissions or opacity shall not exceed 20 percent opacity for more than six minutes in any one hour, except during the first 15 minutes after initial firing of the device when the opacity limit shall be less than 50 percent. Visible emissions are measured as defined in 18 AAC 50.075(a)(2).”

Solid Fuel-Fired Device Curtailment during Air Quality Episodes Under 18 AAC 50.075(e)

In 2016, ADEC expanded its regulations to include a framework that would allow ADEC to institute curtailments during air quality episodes if an episode plan includes specific requirements of the burn curtailment. ADEC also divided the nonattainment areas into three zones to allow for the ability to tailor its response to air pollution events specifically to a more defined area.

For PM_{2.5}, the department declares air episodes in the FNSB nonattainment area when pollutant concentrations have reached, or are expected to reach, the thresholds identified in Table 5.11-1. DEC relies on 24-hr rolling average of 1-hr BAM measurements or 24-hr rolling average data from other DEC-approved monitoring equipment when determining if conditions for an air quality episode have been met.

Under the 18 AAC 50.075(e) framework, the department will declare prohibitions on the operation of solid fuel-fired heating devices during air quality episodes if, at a minimum, the following conditions exist:

- An air quality episode has been declared under 18 AAC 50.246, based on air quality episode thresholds located in Table 5.11-1

ADEC must also issue an episode announcement that identifies the following:

- The Air Quality Control Zone or Zones where the prohibitions are in effect; the boundaries of the Goldstream, Fairbanks, and North Pole Air Quality Control Zones are located in III.D.5.03.
- Exceptions to the prohibition of solid fuel-fired heating device operation.

Given previous community concerns about the reasonableness of requiring residents to cease use of solid fuel-fired heating devices during periods of poor air quality coupled with extreme cold temperatures, ADEC's regulations provide exceptions for continued use of solid fuel-fired

heating devices during air quality episodes if conditions or individual circumstances require the use of solid-fuel heating devices.

Exceptions to the requirement to cease operation of a solid-fuel heating device during an episode must include:

- Cases where electrical power outages prevent the use of alternative heating devices
- Cases where the device owner or operator has obtained a temporary waiver from the Department or local program under 18 AAC 50.075(d)(2)

Exceptions to individual episodes may also include:

- Exceptions based on the class of solid fuel-fired heating device
- Exceptions based on device particulate matter emission rates

However, before declaring a prohibition on the operation of solid fuel-fired heating devices in each air quality zone during an air quality episode, ADEC will review the relevant and available NWS, FNSB, and state meteorological data, weather forecasts, affected area, strength of the inversion, and potential duration of the inversion. It is possible that ADEC will issue air quality episodes that do not include a prohibition of the use of solid fuel-fired heating devices or do not include prohibitions in all three zones, especially if weather conditions indicate a clearing prior to any effect of a curtailment could be realized. ADEC will endeavor to ensure a curtailment is a reasonable approach given the conditions and available data, with the objective of realizing air pollution reduction benefits from the action.

ADEC will use the following approaches to notify the public of requirements and address any compliance issues. The public will be notified of an air quality episode that has specific opacity limits and/or curtailment requirements utilizing several outreach methods. All episode announcements are emailed to ADEC's up-to-date distribution list. This distribution list contains all local media outlets (radio, TV), the FNSB Air Quality Program staff, elected officials, and anyone who signs up for electronic notices. ADEC has online sign-up capabilities for various electronic notices and alerts through its *Air Online Services* accessible through the Division of Air Quality's home page at: <http://dec.alaska.gov/air> . In addition to these electronic emailed announcements, all advisories (alert and episode) are posted to the Division's Air Quality Advisories web page at: <http://dec.alaska.gov/Applications/Air/airtoolsweb/Advisories/>, which includes the actual advisory, the start and end dates, the area, and status (expired, active) of the advisory. ADEC will also post advisories on its Burn Wise Alaska face book page as well as the department's Twitter account.

In addition to providing notification when the opacity limits and/or curtailment requirements are in effect, the department plans to provide on-going public information on the opacity limits and ways that residents can comply. Difficulty meeting opacity limits could be due to wet wood. Under state regulation, residents are required to use dry wood during winter months. Under Borough code, residents are required to use dry wood year round.¹³ Residents will be directed to those wood sellers participating in the *Moisture Disclosure Program* where wood

¹³ Fairbanks North Star Borough Assembly Ordinance No. 2015-01, February 27, 2015

sellers either disclose the moisture content of purchased wood or agree to provide dry wood. The program became a mandatory requirement in the nonattainment area following reclassification of the area as serious. Brochures on proper maintenance and operation of a solid fuel-fired device are also available. To the extent that ADEC resources allow, staff can assist residents who request help in determining in advance of episode conditions whether their typical burning operations meet the opacity limits outlined in this plan.

If a resident is found to be out of compliance with the opacity limits or curtailment requirements identified for a specific episode, ADEC is responsible for taking actions to enforce the state requirements. The FNSB is responsible for taking actions to enforce any local requirements. Where the local and state requirements are substantively similar, the two agencies coordinate to ensure that only one agency takes enforcement action. The department's compliance activities are conducted using the tools and authorities provided under the state statutes. The Division of Air Quality does not have statutory authority to issue administrative penalties for violations of Alaska environmental law. This means that ADEC staff cannot simply write "tickets" to individuals that are found to be violating the opacity limits. All compliance and enforcement activities are case specific, however, ADEC generally initiates compliance activities in response to complaints received that indicate the potential for violations of a state regulation. ADEC staff investigate complaints to verify or corroborate a problem or violation of a state requirement. In most cases, the department finds that compliance can be achieved through assistance to businesses and individuals in understanding the regulatory requirements and how they can comply. In the case of problem burners failing to meet these opacity levels during air quality episodes, it is important to bring a unit into compliance quickly to reduce smoke and assist in bringing levels of PM_{2.5} into compliance in the local area. As a result, if a resident working with or without the assistance of ADEC does not come into compliance, ADEC staff would request that the resident stop burning for the duration of the air quality episode if they have another heating source available. In the event that compliance assistance is not successful in resolving a recurring smoke concern at a specific residence or business, the department staff may use additional administrative enforcement tools, such as nuisance abatement orders or Notices of Violation, to address the concern.

Alaska Department of Environmental Conservation



Amendments to: State Air Quality Control Plan

Vol. III: Appendix III.D.5.12

**{Appendix to Volume II. Analysis of Problems, Control Actions;
Section III. Area-wide Pollutant Control Program; D. Particulate
Matter; 5. Fairbanks North Star Borough PM_{2.5} Control Plan}**

Adopted

December 8, 2017

**Bill Walker
Governor**

**Larry Hartig
Commissioner**

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Appendix III.D.5.12

FNSB Air Quality Ordinances:

2015-01
2015-18
2015-29
2015-73
2016-20-1A
2016-21
2016-30
2016-37
2017-18
2017-44

ADEC & FNSB MOU October 2016

MOA for the Selection & Funding of Projects Funded by CMAQ within the FNSB PM2.5

Nonattainment Area.

(This page serves as a placeholder for two-sided copying)

By: John Davies
Kathryn Dodge
Janice Golub
Introduced: 01/15/2015
Advanced: 01/15/2015
Substituted: 02/12/2015
Amended: 02/12/2015
Amended: 02/26/2015
Amended: 02/27/2015
Adopted: 02/27/2015
Immediate
Reconsideration Failed: 02/27/2015
Adopted: 02/27/2015

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO 2015 - 01

AN ORDINANCE AMENDING CHAPTER 8.21 OF THE FNSB CODE OF
ORDINANCES REGARDING THE PM_{2.5} AIR QUALITY CONTROL PROGRAM,
AMENDING 2.48.120 REGARDING THE AIR POLLUTION CONTROL COMMISSION'S
DUTIES, AND AMENDING 1.04.050 REGARDING THE FINE SCHEDULE TO ADD
VIOLATIONS OF THE PM_{2.5} AIR QUALITY CONTROL PROGRAM

WHEREAS, EPA, on December 22, 2008, declared part of the Fairbanks
North Star Borough a non-attainment area for fine particulate pollution (PM_{2.5}); and

WHEREAS, in the winter, PM_{2.5} concentrations in the non-attainment area
routinely exceed the allowable limit, thereby violating the federal health-based
standards; and

WHEREAS, an excessive level of PM_{2.5} impacts the health and well-being
of borough residents; and

WHEREAS, air quality issues could impact large scale economic
development, including military expansion; and

WHEREAS, studies have identified wood burning as a significant
contributor of PM_{2.5}, particularly wood with high moisture content; and

WHEREAS, the combined effort of an educational program concerning the
importance of burning only dry wood and an increase in the availability of dry wood
could significantly reduce Borough PM_{2.5} levels; and

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be *deleted* is [BRACKETED & CAPITALIZED]

WHEREAS, PM_{2.5} emissions from solid fuel burning appliances can be significantly reduced through the selection and proper use of modern, EPA rated models designed to meet more stringent emissions standards and by operating in accordance with "best practices", including selection of appropriate fuel sources; and

WHEREAS, voluntary, incentive-based programs coupled with comprehensive education programs have been employed in other communities to help reduce PM_{2.5} emissions; and

WHEREAS, voluntary measures may enable the Borough to model attainment, however, it is likely that they would take more than five years to reach this goal and they would not address local neighborhood problems arising from one or two significant polluters, neither of which is acceptable; and

WHEREAS, the State of Alaska, through a Memorandum of Agreement with the Borough, has authorized the Fairbanks North Star Borough to establish and administer an area-wide local PM_{2.5} air quality control program that will operate in lieu of and consistent with the State's air quality program; and

WHEREAS the State of Alaska Department of Environmental Conservation has issued draft regulations intended to be part of the State Implementation Plan (SIP) as required by the EPA; those regulations provide some new restrictions on the sale of solid fuel burning appliances and firewood, and authorize the borough to take on additional regulatory responsibility related to the SIP; and

WHEREAS, at the recent "Town Hall" on the PM_{2.5} problem, more than 50 citizens provided testimony indicating that our air quality was not acceptable and that they expected the Assembly to act to put into place programs that will improve the air quality in the borough.

WHEREAS, it is the intent of the Fairbanks North Star Borough Assembly to respond to calls for regulations that will help improve the air quality within the borough by adopting a program that balances the need for clean air with the needs for economically heating our buildings; and

WHEREAS, in adopting this clean air program, it is the intent of the Assembly that it be enforced by concentrating on the most significant sources of PM_{2.5} pollution first, both for attainment within the Non-Attainment area and for significant local sources of pollution that affect adjacent and nearby properties; and

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be deleted is [BRACKETED & CAPITALIZED]

85 WHEREAS, in enforcing this clean air program, it is the intent of the
86 Assembly that the focus be on assisting violators to come into compliance through the
87 use of warning, education, and assistance provided through programs such as the
88 enhanced solid fuel burning device change-out program.

89
90 NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
91 North Star Borough:

92
93 Section 1. This ordinance is of a general and permanent nature and shall
94 be codified.

95
96 Section 2. The following definitions in FNSBC 8.21.010 Definitions are
97 amended or added as follows:

98 "Advisory" means a notice issued by the FNSB Air Quality division when the
99 division determines, using available data, that a PM_{2.5} concentration of 25 ug/m³ has,
100 or will likely occur.

101 "Air Quality Control Zone" means the area of the Borough currently contained in
102 the EPA designated non-attainment area, which uses the non-attainment area southern,
103 western and eastern boundaries as modified by their respective intersection with the
104 following northern boundary described as; beginning at the intersection of Isberg Road
105 with Chena Ridge Road on the western boundary of the EPA designated non-
106 attainment area, then following Chena Ridge Road back to Chena Pump Road and
107 continuing north on the Parks Highway to Sheep Creek Road, then Sheep Creek Road
108 to Miller Hill Road, then north on Miller Hill Road, then east on Yankovich, then north
109 from Yankovich Road along the east boundary of the Large Animal Research Station to
110 a point just north of its intersection with Nottingham drive and follows the ridge crest
111 across Nottingham Estates to approximately the point where Swallow Drive intersects
112 Dalton Trail to north on Dalton Trail to the crest of the Farmer's Loop Ridge, then follow
113 the geographic crest of Farmer's Loop Ridge to its intersection with the New Steese
114 Highway, then south east on Bennet Road, and along Steel Creek Road to the
115 intersection of Chena Hot Springs Road, and Chena Hot Springs Road to the eastern
116 boundary of the EPA designated non-attainment area.

117 "Alert" means a notice issued by the FNSB air quality division when the division
118 determines, using available data, that a PM_{2.5} violation of the 35 [MICROGRAMS PER
119 CUBIC METER] ug/m³ has, or will likely occur.

120 "Clean wood" means natural wood that has not been painted, varnished, or
121 coated with a similar material, has not been treated with preservatives, and does not
122 contain resins or glues as in plywood or other composite wood products.

123 "Construction and demolition debris" means a conglomeration of materials from
124 construction, repair, remodeling or demolition of buildings and structures containing any
125 prohibited fuels.

126 "Episode" means when conditions reach or are predicted to reach advisory or
127 alert status.

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128 "Forecast" means a description of the current dispersion conditions described as
129 good, fair, or poor and including the expected PM_{2.5} concentrations expressed in
130 micrograms per cubic meter.

131 "Opacity" means the reduction in transmitted light through a column of smoke as
132 measured by an observer certified in using EPA Reference Method 9 as defined by
133 federal law.

134
135 Section 3. Section 8.21.020 Borough listed appliances shall be
136 amended as follows:

137 A[N] solid fuel burning appliance shall be listed by the borough if:

138 A. The solid fuel burning appliance is certified by the U.S. Environmental Protection
139 Agency as meeting the federal emissions [LIMIT STANDARD APPROPRIATE FOR
140 THAT APPLIANCE OR IN THE CASE OF HYDRONIC HEATERS IS AT LEAST
141 PHASE II QUALIFIED] rate of 2.5 grams of PM_{2.5} per hour or less or for hydronic
142 heaters, meets Phase II qualifications and has an annual average emission level rating
143 equal to or less than 2.5 grams of PM_{2.5} per hour. For purposes of this section,
144 "certified" means that the solid fuel burning appliance meets emission performance
145 standards when tested by an accredited independent laboratory and labeled according
146 to procedures specified by the EPA in 40 CFR 60 Subpart AAA; or

147 B. The solid fuel burning appliance is tested, including by use of a handheld or other
148 portable device, by an accredited independent laboratory, or other qualified person or
149 entity approved by the borough, establishing that it meets an [THE EPA] emissions
150 [LIMIT STANDARD APPROPRIATE FOR THAT APPLIANCE OR AN EMISSIONS
151 LIMIT STANDARD EQUIVALENT TO THAT OF A LISTED APPLIANCE IN A SIMILAR
152 CATEGORY] rate of 2.5 grams of PM_{2.5} per hour or less or for hydronic heaters the
153 appliance has an annual average emission level rating equal to or less than 2.5 grams
154 of PM_{2.5} per hour.

155
156 Section 4. Section 8.21.025 Prohibited acts shall be amended as
157 follows:

158 [THE BOROUGH SHALL NOT, IN ANY WAY, REGULATE, PROHIBIT,
159 CURTAIL, NOR ISSUE FINES OR FEES ASSOCIATED WITH THE SALE,
160 DISTRIBUTION, OR OPERATION OF HEATING APPLIANCES OR ANY TYPE OF
161 COMBUSTIBLE FUEL.]

162 A. Installation of certain solid fuel burning appliances in the non-attainment area.
163 Within the non-attainment area no person shall install or allow the installation of a solid
164 fuel burning appliance unless it is listed by the Borough as qualifying under this chapter
165 and the installation complies with all other requirements imposed in this chapter. It is a
166 separate violation to fail to remove a solid fuel burning appliance installed in violation of
167 this chapter.

168 B. All persons owning and selling their property within the Air Quality Control Zone
169 with an unlisted installed solid fuel burning appliance that will not be removed before
170 sale must, if the solid fuel burning appliance was not listed by the Borough as qualifying

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171 at the time of installation, provide a written disclosure to the buyer and to the Division
172 prior to closing.

173 C. Visible Emissions Standard in the Air Quality Control Zone.

174 1. Standard. No person shall cause, permit, or allow the emission from a
175 solid fuel burning appliance in the Air Quality Control Zone to create opacity greater
176 than 20 percent for a period or periods aggregating more than 10 minutes in any hour
177 except during the first 30 minutes after the initial firing of a cold unit when the opacity
178 limit shall be less than 50 percent.

179 2. Procedures and Enforcement. When ambient weather and light conditions
180 permit, methods and procedures specified by the EPA in 40 CFR 60 Appendix A
181 reference method 9 (Visual determination of the Opacity of Emissions From Stationary
182 Sources), or an alternative technology that replaces method 9, when the technology is
183 available and the choice is feasible, upon request of the person being investigated, shall
184 be used to determine compliance with this section. Smoke visible from a chimney, flue
185 or exhaust duct in excess of the opacity standard for a period in excess of 30 minutes
186 shall constitute prima facie evidence of unlawful operation of an applicable solid fuel
187 burning appliance.

188 D. PM_{2.5} Emissions Crossing Property Lines. No person shall cause or permit
189 emissions from a solid fuel burning appliance to impact the resident(s) of a neighboring
190 property through the creation of an emissions plume that:

191 1. crosses a property line
192 2. is observable using EPA method 22 (40 CFR 60 Appendix A), and
193 3. is 25ug/m³ greater than the surrounding immediate vicinity background
194 PM_{2.5} level using methods defined by the Borough Division of Air Quality. For purposes
195 of this subsection, the surrounding "immediate vicinity" means land within an area
196 measured 1,200 feet in all directions from the boundaries of the emitting property.

197 E. Borough-Wide Installation Requirements for Hydronic Heaters.

198 1. Setback. Unless permitted by a variance, installing an approved pellet
199 fuel burning appliance, or replacing an existing hydronic heater with a listed appliance,
200 no person shall install or allow the installation of a hydronic heater located less than:

201 a. 330 feet from the closest property line, or
202 b. 660 feet from a school, clinic, hospital, or senior housing unit.
203 2. Any hydronic heater installed in violation of this section shall be
204 immediately remedied or made inoperable and removed as soon as practicable;
205 however, in no case shall the time of removal be longer than 180 days after notice from
206 the Division of a violation.

207 F. Prohibited Fuels.

208 No person shall burn in the Borough any fuel, except coal in an appliance
209 designed to use coal, which is not listed in the manufacturer's owner's manual as an
210 acceptable fuel for that device or any of the following items in a solid fuel burning
211 appliance:

212 1. Any wood that does not meet the definition of clean wood or has more
213 than 20% moisture content,

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- 214 2. Garbage,
 215 3. Tires,
 216 4. Materials containing plastic or rubber,
 217 5. Waste petroleum products,
 218 6. Paints and paint thinners,
 219 7. Chemicals,
 220 8. Glossy or colored papers,
 221 9. Construction and demolition debris,
 222 10. Plywood,
 223 11. Particleboard,
 224 12. Saltwater driftwood,
 225 13. Manure,
 226 14. Animal carcasses,
 227 15. Asphalt products,
 228 16. Flooring products.
 229 G. Sales or Leasing of Solid Fuel Burning Appliances.
 230 1. No person shall sell or lease a solid fuel burning appliance or barrel stove
 231 kit in the borough that does not meet the emissions limits established in 8.21.020 A.
 232 unless the buyer signs an affidavit, on a form prescribed by the Borough, that the
 233 appliance will not be installed or used in the Air Quality Control Zone. This section does
 234 not apply to appliances or stoves that transfer pursuant to a sale of property.
 235 2. No person shall commercially sell or offer for sale or lease a solid fuel
 236 burning appliance in the borough unless the commercial seller or dealer provides the
 237 prospective buyer or lessee, prior to any sales or lease agreement, with a written notice,
 238 prepared or approved by the Division, that includes, but is not limited to, the following:
 239 a. The fuel restrictions imposed in this chapter;
 240 b. Proper installation, property location, operation, and maintenance
 241 of the appliance;
 242 c. An advisory statement noting that operation of solid fuel burning
 243 appliances may not be appropriate in some areas due to terrain, meteorological
 244 conditions, or other relevant conditions that render the operation of the appliance a
 245 public nuisance or health hazard even though it is otherwise legally installed and
 246 operated, and
 247 3. The written notice required in this section shall be signed and dated by the
 248 prospective buyer or lessee prior to purchase or lease to indicate receipt of the
 249 notification requirements of this section.
 250 4. The commercial dealer or seller shall mail or otherwise provide a copy of
 251 the notice, any required affidavit, to the Division within thirty days of the sale. All
 252 commercial dealers or sellers shall also include with the notice documentation showing
 253 whether the appliance sold or leased meets the Borough's emissions standard.
 254 H. Nuisance. No person within the Fairbanks North Star Borough shall cause or
 255 allow emissions of a solid fuel or waste oil burning appliance that are injurious to human life
 256 or to property or that unreasonably interfere with the comfortable enjoyment of life or

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property. No person within the Fairbanks North Star Borough shall operate a solid fuel or waste oil burning appliance in a manner so as to create a public or private nuisance. A violation of a provision of this chapter is hereby declared to be a nuisance.

I. Other laws. Nothing in this section precludes other local jurisdictions from having more restrictive codes.

J. Penalties. Upon first conviction of an offense in this chapter, the penalty(ies)/fines(s) set forth in FNSBC Title 1 regarding violations of the PM_{2.5} air quality control program may be satisfied by completion within 60 days of a borough approved class covering PM_{2.5} health concerns, non-attainment, importance of dry wood and proper operation of solid fuel burning appliances. The borough may on its own initiative file notice of satisfaction of attendance requirements with the court, or the defendant may file a certificate of completion with the court within the applicable time frame.

Section 5. Section 8.21.040, Forecasting exceedances and voluntary restrictions in the non-attainment area during an alert, shall be amended as follows:

8.21.040 Forecasting exceedances and [VOLUNTARY] restrictions in the Air Quality Control Zone [NON-ATTAINMENT AREA] during an alert

A. During the winter months of October through March, the Borough shall issue a daily PM_{2.5} forecast [at] by 4:30 p.m. [MONDAY THROUGH FRIDAY]. When the PM_{2.5} concentration reaches the onset level for an episode and is expected to remain at that level for 12 hours or more, an alert or advisory will be declared. An alert or advisory may apply to the Air Quality Control Zone as a whole, or to one or more sub-areas designated by the division. Once an alert or advisory is declared, PM_{2.5} control measures set forth in this section shall be implemented and continued until the alert or advisory is cancelled. There are three levels of episodes: Stage 1, 2 and 3. The obligations imposed in this sub-section do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

B. The Division will notify local media to ensure the declared alert or advisory is broadcast. The Division shall also use social media and methods of direct communication such as text messages as feasible. Information within the notification will contain the PM_{2.5} forecast, Stage level for areas, and actions required to reduce sources of PM_{2.5}. The obligations imposed in this sub-section do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

[B]C. Stage 1: Voluntary Restrictions in the Air Quality Control Zone [NON-ATTAINMENT AREA] During an [ALERT] Advisory.

1. A Stage 1 air advisory is implemented when concentrations exceed or are forecasted to exceed 25ug/m³.

[1]2. Residents shall be requested to voluntarily stop operation of solid fuel [BURNING APPLIANCES], pellet [STOVES], and waste oil burning appliances, [AND] as well as masonry heaters and all outdoor burning that includes recreational fires such

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as bonfires, campfires and the use of fire pits, non-permitted incinerators and burn barrels in the Air Quality Control Zone [NON-ATTAINMENT AREA].

[2. THE DIVISION WILL NOTIFY LOCAL MEDIA TO ENSURE THE DECLARED ALERT IS BROADCAST. INFORMATION WITHIN THE NOTIFICATION WILL CONTAIN THE PM FORECAST AND PROCEDURES TO REDUCE SOURCES OF PM.]

D. Stage 2: Required Restrictions in the Air Quality Control Zone During an Alert

1. A Stage 2 air alert is implemented when concentrations exceed or are forecasted to exceed 35ug/m³.

2. Burning is permitted in all borough listed appliances. No fuel source may be added to the combustions chamber or firebox of any non-listed solid fuel burning appliance or waste oil burning appliance. Residents should rely instead on their home's alternate, cleaner source of heat (such as a gas or fuel oil fired furnace or boiler or electric baseboard heaters) until the Stage 2 air alert is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "No Other Adequate Source of Heat" designation, the building owner is exempted from complying with the Stage 2 air alert restrictions for that building.

4. Outdoor burning is prohibited including non-permitted incinerators and burn barrels. This does not include recreational fires such as bonfires, campfires or ceremonial fires and the use of fire pits.

5. These restrictions shall not apply during a power failure.

E. Stage 3: Required Restrictions in the Air Quality Control Zone During an Alert.

1. A Stage 3 air alert is implemented when concentrations exceed or are forecasted to exceed 55ug/m³.

2. No fuel source may be added to the combustions chamber or firebox of any solid fuel burning appliances, masonry heaters, pellet fuel burning appliances, cook stoves, fireplaces, or waste oil burning appliances. No waste oil may be added to a waste oil burning appliance. Residents should rely instead on their home's alternate, cleaner source of heat (such as a furnace, boiler or electric baseboard heaters) the Stage 3 air alert is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "No Other Adequate Source of Heat" designation the building owner is exempted from complying with the Stage 3 air alert restrictions for that building.

4. Outdoor burning is prohibited including non-permitted incinerators and burn barrels. This does not include recreational fires such as bonfires, campfires or ceremonial fires and the use of fire pits.

5. These restrictions shall not apply during a power failure or to listed appliances, masonry heaters or pellet fuel burning appliances when the temperature is below -15 as recorded at the Fairbanks International Airport.

Section 6. FNSB 2.48.120 **Powers and duties** of the Air Pollution Control Commission are amended as follows:

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F. The commission may [SHALL] develop or review comprehensive plans for the prevention, abatement, and control of air pollution in the borough. Such plans may include recommendations on subjects including, but not limited to, transportation control measures, zoning, taxation, research, and public relations.

H. After a public hearing, the commission shall determine whether a person may receive a variance from the installation requirements of FNSB 8.21.020 E allowing them to install a hydronic heater. In determining whether to grant the variance, the commission shall consider the proposed location of the appliance, impact on surrounding neighborhood, emission levels of the appliance, terrain, meteorological conditions, and other relevant conditions that may render the operation of the appliance at that location a nuisance or a health hazard.

Section 7. A new section, Section 8.21.043, **No other adequate source of heat determination**, shall be added as follows:

A. A building-owner or other person with a property or managerial interest in the building may obtain a "No Other Adequate Source of Heat" determination from the Division if:

1. The building-owner(s) or other person with a property or managerial interest in the building applies with the Division on a form developed by the Division.

2. The building-owner(s) or other person with a property or managerial interest in the building files an affidavit with the application that the subject structure must be heated and the structure has no adequate heating source without using a solid fuel or waste oil burning appliance or that economic hardships require the applicant's use of a solid fuel or waste oil burning appliance or complying with a restriction would result in damage to property including damage to the appliance itself and its heating system components.

B. There shall be no fee for applying for or obtaining a determination.

C. It shall be a violation to submit a false affidavit for a "no other adequate source of heat" determination.

D. If the "no other adequate source of heat" appliance does not meet the standards set in this chapter, the Division shall provide the applicant with information concerning the borough's voluntary removal, replacement and repair program.

E. Applications denied by the division may be appealed to the Air Pollution Control Commission.

Section 8. FNSB 1.04.050 **Fine schedule** is amended to add the following:

<u>Code Section</u>	<u>Offense</u>	<u>Penalty/Fine</u>	<u>Mandatory Warning Required</u>
<u>8.21.025(A)</u>	<u>Installation of an unlisted appliance</u>	<u>\$500.00</u>	<u>No</u>

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<u>8.21.025(A)</u>	<u>Failure to remove an unlisted appliance</u>	<u>\$500.00</u>	<u>Yes</u>
<u>8.21.025(B)</u>	<u>Failure to disclose an unlisted appliance before sale</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.025(C)</u>	<u>Violation of visible emissions standard 1st offense</u>	<u>\$100.00</u>	<u>Yes</u>
<u>8.21.025(C)</u>	<u>Violation of visible emissions standard 2nd offense</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.025(D)</u>	<u>Emissions crossing property lines 1st offense</u>	<u>\$500.00</u>	<u>Yes</u>
<u>8.21.025(D)</u>	<u>Emissions crossing property lines 2nd offense</u>	<u>\$1000.00</u>	<u>No</u>
<u>8.21.025(E)</u>	<u>Illegal installation of hydronic heaters</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.025(E)</u>	<u>Failure to remove hydronic heaters</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.025(F)</u>	<u>Use of prohibited fuels--1st offense</u>	<u>\$100.00</u>	<u>Yes</u>
<u>8.21.025(F)</u>	<u>Use of prohibited fuels--2nd offense</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.025(G)</u>	<u>Violation of commercial sale requirements</u>	<u>\$500.00</u>	<u>No</u>
<u>8.21.040(D)</u>	<u>Violation of a stage 2 air alert restriction</u>	<u>\$500.00</u>	<u>Yes</u>
<u>8.21.040(D)</u>	<u>Violation of a stage 3 air alert restriction</u>	<u>\$1000.00</u>	<u>Yes</u>
<u>8.21.043</u>	<u>Filing a false affidavit</u>	<u>\$500.00</u>	<u>No</u>

Section 9. Effective Date. Except for FNSBC 8.21.025 G (Commercial Sales) which shall be effective 30 days after adoption, and FNSBC 8.21.025 B (sale of property) which shall be effective on May 1st, 2015, and FNSBC 8.21.025(F)(1) (requirement wood be 20% moisture content) which shall be effective on October 1, 2015. This ordinance shall be effective at 5:00 pm on the first Borough business day


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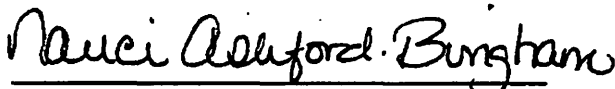
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385 following its adoption and shall have only prospective application, meaning no provision
386 shall apply to any act, including installation or purchase of a solid fuel appliance
387 completed prior to the effective date.
388

389 PASSED AND APPROVED THIS 27TH DAY OF FEBRUARY, 2015.
390
391

392 
393 Karl Kassel
394 Karl Kassel
395 Presiding Officer
396

397 ATTEST:

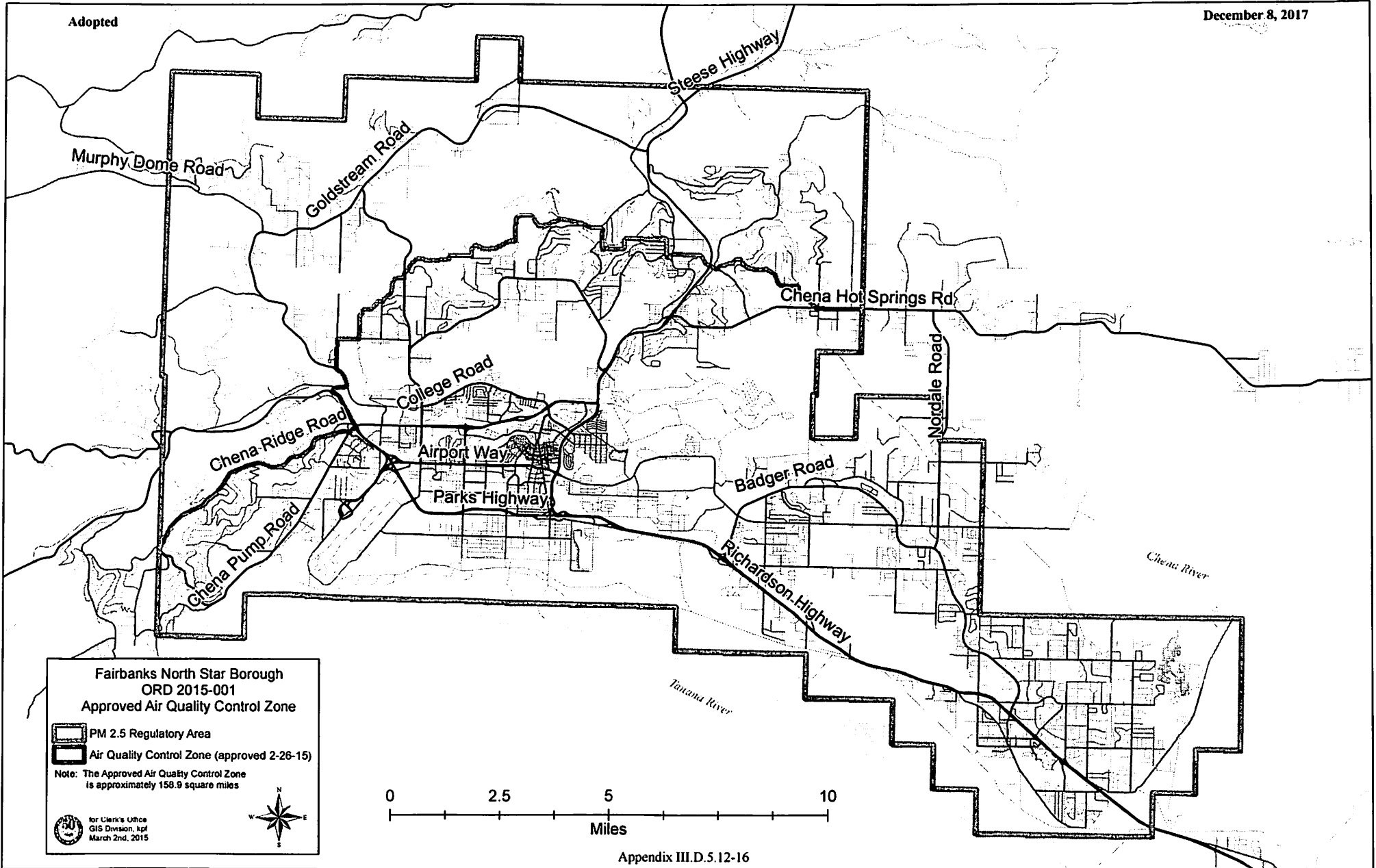
398 
399 Nanci Ashford-Bingham
400 Nanci Ashford-Bingham, MMC
401 Borough Clerk
402
403

404 Ayes: Golub, Hutchison, Lawrence, Dodge, Quist, Davies, Kassel
405 Noes: Sattley, Roberts

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Adopted

December 8, 2017



By: Lance Roberts
 Introduced: 04/09/2015
 Advanced: 04/09/2015
 Amended: 04/23/2015
 Adopted: 04/23/2015

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2015 - 18

AN ORDINANCE AMENDING FNSBC 8.21.035 REGARDING THE ENHANCED VOLUNTARY REMOVAL, REPLACEMENT AND REPAIR PROGRAM, REMOVING THE ADDITIONAL FUEL PAYMENT FROM THE PROGRAM AND AMENDING FNSBC 8.21.045 REGARDING THE VOLUNTARY BURN CESSATION PROGRAM

WHEREAS, the Borough Assembly recently amended FNSBC 8.21.020 regarding borough listed solid fuel burning appliances so that the use of that defined term can now be substituted for the current lengthier description of an acceptable solid fuel burning appliance replacement for the enhanced voluntary removal, replacement and repair program ;and

WHEREAS, in order to maximize the limited funds available for the enhanced voluntary removal, replacement and repair program, it is necessary to remove the additional payment for the purchase of fuel; and

WHEREAS, the recently amended voluntary, removal, replacement and repair program largely replaces the separate voluntary burn cessation program and any funds intended to be spent on the cessation program could be more efficiently spent on the removal, replacement and repair program.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks North Star Borough:

Section 1. This ordinance is of a general and permanent nature and shall be codified.

Section 2. FNSBC 8.21.035, **Enhanced voluntary removal, replacement and repair program**, is hereby amended as follows:
 The Fairbanks North Star Borough shall, to the extent funds are available and appropriated by the assembly, offer an enhanced removal, replacement and repair program to help offset the costs of removing, replacing or repairing a *solid fuel burning appliance* (SFBA) or *fireplace*. This program shall be subject to the following eligibility requirements, conditions, and criteria:

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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A. General Requirements.

1. Application. An application approved by the *division* and signed by all property owner(s) must be submitted along with any documentation required by the *division*. Applicants must fully comply with the *division's* inspection process which shall verify the existence of a qualifying SFBA or *fireplace*.

2. Priority Ranking. Applications may be prioritized and may be limited by the *division* in its discretion based on geographical location, the overall air quality benefit and the type of SFBA or *fireplace* being removed, replaced or repaired.

3. Eligibility. The program is limited to properties within the borough boundary in which a qualifying SFBA or fireplace is installed. If an application is approved for the program, the applicant will be given up to 90 days to meet all of the requirements. Applicants must have no delinquent property tax or penalty or interest owing at the time of application and at completion of the program requirements.

4. Additional Requirements. In addition to the general requirements set forth in this section, applicants must also meet the following requirements:

a. Fully comply with the inspection process required by the *division* that shall ensure that the existence of the qualifying *appliance* to be removed, replaced or repaired is properly documented.

b. Removal of *appliance*.

c. Delivery of *appliance* to an authorized decommission station.

d. Certificate of destruction delivered to the *division*, if applicable.

e. Final installation of a qualified *appliance* visually verified.

f. All aspects of this section may be performed by borough-approved personnel or a borough-approved vendor.

5. Payments. Applicants will be eligible for reimbursements or, at the option of the applicant, payment may be made directly to a borough-approved vendor. Reimbursements and payments shall be available as follows:

a. Replacement of an outdoor *hydronic heater*. With either a borough listed solid fuel burning appliance [N EPA CERTIFIED SFBA WITH AN EMISSION RATE LESS THAN OR EQUAL TO 2.5 GRAMS/HOUR, AN EPA PHASE II QUALIFIED PELLET BURNING *HYDRONIC HEATER* WITH AN EMISSION RATE EQUAL TO OR LESS THAN 0.2 POUNDS/MILLION BTUS], or an *appliance* designed to use pellets, home heating oil (excluding waste oil), natural gas, propane, hot water district heat, electricity or a *masonry heater* (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation).

Appliance + Fuel Payment
Up to \$10,000 for purchase and installation of the <i>appliance</i> plus fuel payment, if applicable.

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b. Replacement of a non-borough listed [EPA certified] SFBA, or fireplace[, OR AN EPA CERTIFIED SFBA THAT HAS AN EMISSION RATE GREATER THAN 2.5 GRAMS/HOUR]: With either a borough listed solid fuel burning appliance [N EPA CERTIFIED SFBA WITH AN EMISSION RATE EQUAL TO OR LESS THAN 2.5 GRAMS/HOUR AND] that has an emission rate 50 percent or less than the replaced heater, or an *appliance* designed to use pellets, home heating oil (excluding waste oil), natural gas, propane, hot water district heat, electricity or a *masonry heater* (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation). Multiple non-borough-listed solid fuel burning appliances or fireplaces, or combinations thereof, may be replaced with a single heating device that meets the requirements above, except for those that are fired by solid fuels. Payment will be based on the number of devices removed, up to a maximum of three, and may not exceed the replacement cost.

Appliance + Fuel Payment

Up to \$4,000 per device for purchase and installation of the *appliance* plus fuel payment, if applicable.

c. Removal of a SFBA (limited to a one-time participation in this program per property).

Cash Payment

\$2,000 – if removing outdoor *hydronic heater*
\$1,000 – if removing other SFBA

d. Fuel Payment. [IF A PELLET FUEL BURNING APPLIANCE OR A PELLET STOVE IS PURCHASED AND INSTALLED UNDER THIS PROGRAM, THE APPLICANT IS ELIGIBLE TO RECEIVE AN ADDITIONAL \$300.00 PAYMENT FOR THE PURCHASE OF PELLETS MANUFACTURED IN THE FAIRBANKS NORTH STAR BOROUGH.] If a wood burning *appliance* is purchased and installed under this program, the applicant is eligible to receive an additional \$300.00 payment for borough-approved pressed wood energy logs manufactured in the Fairbanks North Star Borough.

e. Repair Program.

i. The repair program will pay for the:

(A) Replacement of a wood stove's catalytic converter that has exceeded its life span through the one-time payment of up to \$750.00.

(B) Replacement of any emissions-reducing component of an EPA-certified wood stove up to the maximum amount of \$750.00.

ii. In addition to the general requirements set forth in this section, applicants must fully comply with any inspection process required by the *division*, which may be performed by a borough-approved vendor.

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Text to be *deleted* is [BRACKETED AND CAPITALIZED]

Section 3. FNSBC 8.21.045, Voluntary burn cessation program, is hereby amended:

8.21.045 Voluntary burn cessation program.

The Fairbanks North Star Borough will, to the extent funds are available and appropriated by the assembly, establish a program to encourage, incentivize, and facilitate the voluntary cessation of the use of wood burning *appliances* (i.e., wood stoves, wood-fired *hydronic heaters*, wood-fired furnaces, *fireplaces*, *fireplace inserts*, *masonry heaters* or *pellet fuel burning appliances*) in the [NONATTAINMENT AREA] air quality control zone during *air quality alerts*. It is recognized that it will be difficult or impossible for some households to participate in this program (e.g., those that heat solely with wood or for which wood is a necessary supplement during periods of cold weather). Therefore, this program is intended for households that are able to use space heating alternatives with significantly lower *pm_{2.5}* emissions, including those fueled by gas, oil, electricity, propane or district heat, but not wood or *pellet stoves* or other wood burning *appliances*. This program will at a minimum consist of the following components:

A. The borough may contract with an agency that will provide services to promote the program. This agency must have the standing, experience, and capability to carry out a campaign to advertise, reach out, and attract a large number of participants in the *nonattainment area* who are willing to cease the use of a wood burning *appliance* during *air quality alerts*.

B. [INCENTIVES WILL BE PROVIDED TO HOUSEHOLDS THAT PARTICIPATE IN THE PROGRAM. THESE INCENTIVES MAY INCLUDE THE PROVISION OF (1) A SIGN-UP BONUS SUCH AS CASH, A VOUCHER, OR GOODS AND SERVICES USEFUL TO A HOUSEHOLD THAT HEATS WITH WOOD; (2) A THANK-YOU LETTER, WINDOW OR YARD SIGN; OR, (3) OTHER FORM OF PUBLIC ACKNOWLEDGMENT. THE COST OF THIS INCENTIVE TO THE BOROUGH SHALL NOT EXCEED \$25.00 PER HOUSEHOLD. THESE INCENTIVES MAY BE PROVIDED OR AUGMENTED BY PRIVATE CONTRIBUTIONS.

C.] Facilitation of this program by the borough will include, but not be limited to, the provision of notice of *air quality alerts* to individual households by methods such as electronic mail messages, text messages, automated phone calls, notices to radio and television stations, and information posted on electronic reader or display boards located throughout the borough in locations best suited to notify residents of *air quality alerts*.

[D]C. Private contributions, including goods and/or services, will be sought for all appropriate elements of the program. In general this will focus on the provision of materials, equipment, and certain one-time services, but not to fund borough staff positions.

Section 4. Effective Date. This ordinance shall be effective at 5:00 p.m. of the first Borough business day following its adoption.

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

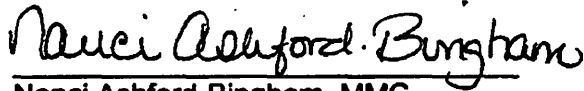
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PASSED AND APPROVED THIS 23RD DAY OF APRIL, 2015.


Karl Kassel
Presiding Officer

ATTEST:


Nanci Ashford-Bingham, MMC
Borough Clerk

Ayes: Golub, Sattley, Hutchison, Roberts, Lawrence, Dodge, Quist, Davies, Kassel
Noes: None

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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Text to be deleted is [BRACKETED AND CAPITALIZED]

By: Kathryn Dodge
John Davies
Introduced: 04/23/2015
Advanced: 04/23/2015
Substituted: 06/25/2015
Amended: 06/25/2015
Adopted: 06/25/2015

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2015 – 29

AN ORDINANCE AMENDING FNSBC 8.21.025.B TO PERMIT FILING OF PROPERTY SALE WRITTEN DISCLOSURES WITH THE AIR QUALITY DIVISION AFTER THE RECORDING OF THE SALE AND AMENDING FNSBC 8.21.040 CONCERNING USE OF APPLIANCES THAT WERE BOROUGH LISTED AT THE TIME OF INSTALLATION DURING A STAGE 2 & 3 AIR ALERT

WHEREAS, As part of the recently adopted PM_{2.5} Air Quality Control Program, borough code requires certain property sellers to provide written disclosures to the buyer and to the borough's Air Quality Division, prior to closing; and

WHEREAS, Although disclosure prior to closing serves to fully inform the buyer prior to purchase, disclosure to the borough can wait until after closing; and

WHEREAS, Because property transactions sometimes fail to close for a variety of reasons, waiting until after closing to provide a copy of the disclosures to the borough will potentially avoid an unnecessary step and ensure that the Borough receives accurate information.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks North Star Borough:

Section 1. Classification. This ordinance is of a general and permanent nature and shall be codified.

Section 2. Section 8.21.025.B, **Prohibited acts**, is amended as follows:

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be *added* is underlined

Text to be *deleted* is [BRACKETED AND CAPITALIZED]

B. All persons owning and selling their property within the Air Quality Control Zone with an [UNLISTED SOLID FUEL BURNING APPLIANCE] installed non EPA certified solid fuel burning appliance, or for hydronic heaters non EPA Phase II qualifications, that will not be removed before sale must[, IF THE SOLID FUEL BURNING APPLIANCE WAS NOT LISTED BY THE BOROUGH AS QUALIFYING AT THE TIME OF INSTALLATION,] provide a written disclosure to the buyer [AND TO THE DIVISION] prior to closing, and a copy to the division no later than 10 days after the recording of the sale.

Section 3. FNSBC 8.21.040, **Forecasting exceedances and restrictions in the air quality control zone during an alert**, is amended as follows:

A. During the winter months of October through March, the borough shall issue a daily $PM_{2.5}$ forecast by 4:30 p.m. When the $PM_{2.5}$ concentration reaches the onset level for an episode and is expected to remain at that level for 12 hours or more, an *alert* or *advisory* will be declared. An *alert* or *advisory* may apply to the *air quality control zone* as a whole, or to one or more sub-areas designated by the *division*. Once an *alert* or *advisory* is declared, $PM_{2.5}$ control measures set forth in this section shall be implemented and continued until the *alert* or *advisory* is cancelled. There are three levels of episodes: Stage 1, 2 and 3. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

B. The *division* will notify local media to ensure the declared *alert* or *advisory* is broadcast. The *division* shall also use social media and methods of direct communication such as text messages as feasible. Information within the notification will contain the $PM_{2.5}$ forecast, stage level for areas, and actions required to reduce sources of $PM_{2.5}$. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

C. Stage 1: Voluntary Restrictions in the *Air Quality Control Zone During an Advisory*.

1. A Stage 1 air *advisory* is implemented when concentrations exceed or are forecasted to exceed $25 \mu\text{g}/\text{m}^3$.

2. Residents shall be requested to voluntarily stop operation of solid fuel, pellet, and waste oil burning *appliances*, as well as *masonry heaters* and all outdoor burning that includes recreational fires such as bonfires, campfires and the use of fire pits, nonpermitted incinerators and burn barrels in the *air quality control zone*.

D. Stage 2: Required Restrictions in the *Air Quality Control Zone During an Alert*.

1. A Stage 2 air *alert* is implemented when concentrations exceed or are forecasted to exceed $35 \mu\text{g}/\text{m}^3$.

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be deleted is [BRACKETED AND CAPITALIZED]

2. Burning is permitted in all [BOROUGH LISTED APPLIANCES] EPA certified solid fuel burning appliances, and EPA Phase II Qualified hydronic heaters with an annual average emission rating of 2.5 grams or less, masonry heaters, pellet fuel burning appliances, cook stoves, and fireplaces. No fuel source may be added to the combustions chamber or firebox of any [NONLISTED] *solid fuel burning appliance* or waste oil burning *appliance not listed above*. Residents should rely instead on their home's alternate, cleaner source of heat (such as a gas or fuel oil fired furnace or boiler or electric baseboard heaters) until the Stage 2 air *alert* is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation, the building owner is exempted from complying with the Stage 2 air *alert* restrictions for that building.

4. Outdoor burning is prohibited including nonpermitted incinerators and burn barrels. This does not include recreational fires such as bonfires, campfires or ceremonial fires and the use of fire pits.

5. These restrictions shall not apply during a power failure.

E. Stage 3: Required Restrictions in the Air Quality Control Zone During an Alert.

1. A Stage 3 air *alert* is implemented when concentrations exceed or are forecasted to exceed 55 µg/m³.

2. No fuel source may be added to the combustions chamber or firebox of any *solid fuel burning appliances, masonry heaters, pellet fuel burning appliances, cook stoves, fireplaces, or waste oil burning appliances.* No waste oil may be added to a waste oil burning *appliance*. Residents should rely instead on their home's alternate, cleaner source of heat (such as a furnace, boiler or electric baseboard heaters) until the Stage 3 air *alert* is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation the building owner is exempted from complying with the Stage 3 air *alert* restrictions for that building.

4. Outdoor burning is prohibited including nonpermitted incinerators and burn barrels. This does not include recreational fires such as bonfires, campfires or ceremonial fires and the use of fire pits.

5. These restrictions shall not apply during a power failure or to [LISTED APPLIANCES] EPA certified solid fuel burning appliances, EPA Phase II Qualified hydronic heaters with an annual average emission rating of 2.5 grams or less, masonry heaters or pellet fuel burning appliances when the temperature is below -15 Fahrenheit as recorded at the Fairbanks International Airport.

Section 4. This ordinance is effective at 5:00 p.m. on the first Borough business day following its adoption except that Section 2 shall apply retroactively with an effective date of May 1st, 2015.

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

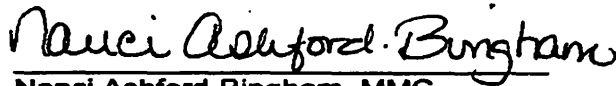
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Text to be *deleted* is [BRACKETED AND CAPITALIZED]

PASSED AND APPROVED THIS 25TH DAY OF JUNE, 2015.


Karl Kassel
Presiding Officer

ATTEST:


Nanci Ashford-Bingham, MMC
Borough Clerk

Ayes: Quist, Sattley, Hutchison, Lawrence, Dodge, Davies, Kassel
Noes: Roberts
Excused: Golub

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be deleted is [BRACKETED AND CAPITALIZED]

By: Karl W. Kassel, Mayor
 Introduced: 12/10/2015
 Advanced: 12/10/2015
 Amended: 01/14/2016
 Adopted: 01/14/2016

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2015-73

AN ORDINANCE AMENDING CHAPTER 8.21 OF THE FAIRBANKS NORTH STAR
 BOROUGH CODE OF ORDINANCES REGARDING THE PM2.5 AIR QUALITY CONTROL
 PROGRAM

WHEREAS, FNSB code of ordinances requires realty disclosures for all
 residences sold where an unlisted solid fuel burning device is installed, a requirement
 that to date has only produced two disclosures with zero solid fuel burning device
 change outs; and

WHEREAS, FNSB code of ordinances limits air quality complaint
 response to emissions from solid fuel burning appliances only; and

WHEREAS, In adopting a clean air program that is enforced by
 concentrating on the most significant sources of PM2.5 pollution, both for attainment
 within the Non-Attainment area and for significant local sources of pollution that affect
 nearby properties, the complaint response program would be better suited to all types of
 high particulate emitting sources; and

WHEREAS, On February 27th, 2015 the assembly adopted ordinance
 2015-01 which created an Air Quality Control Zone, an area designated to refocus the
 FNSB woodsmoke mitigation efforts ; and

WHEREAS, The current code of ordinances dictates that the Enhanced
 Voluntary Removal, Replacement, and Repair Program be made available to all
 residences within the FNSB, an area larger than the non-attainment boundary and the
 Air Quality Control Zone; and

WHEREAS, The FNSB has made \$500,000 of general fund balance
 money available for the woodstove change out program and the greatest air quality
 improvement can be achieved by applying it within designated hot spot areas; and

WHEREAS, The FNSB assembly and the State of Alaska has adopted a
 20% moisture content requirement for cordwood as part of ordinance 2015-01; and

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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WHEREAS, Dirigo Laboratories conducted a series of tests detailing the benefits and limitations of mixing Superior Pellet Fuels energy logs with local cordwood, the largest benefits to stove emissions reductions were with wet wood which is now illegal within the borough; and

WHEREAS, The price of heating fuel has dropped to a 8 year low making it a more economical and cleaner to heat with oil instead of energy logs; and

WHEREAS, FNSB code allows a one-time cash payment for the removal of a solid fuel burning appliance, a benefit which could see larger participation with a higher incentive.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks North Star Borough:

Section 1. Classification. This ordinance is of a general and permanent nature and shall be codified.

Section 2. FNSB 8.21.020, **Borough listed appliances**, is amended as follows:

A solid fuel burning appliance shall be listed by the borough if:

A. The solid fuel burning appliance is certified by the U.S. Environmental Protection Agency as meeting the federal emissions rate of 2.5 grams of PM2.5 per hour or less or for hydronic heaters, meets Phase II qualifications and has [AN ANNUAL AVERAGE EMISSION LEVEL RATING EQUAL TO OR LESS THAN 2.5 GRAMS OF PM2.5 PER HOUR] an emission rating of 0.10 pounds per million BTU or less. For purposes of this section, "certified" means that the solid fuel burning appliance meets emission performance standards when tested by an accredited independent laboratory and labeled according to procedures specified by the EPA in 40 CFR 60 Subpart AAA; or

B. The solid fuel burning appliance is tested, including by use of a handheld or other portable device, by an accredited independent laboratory, or other qualified person or entity approved by the borough, establishing that it meets an emissions rate of 2.5 grams of PM2.5 per hour or less or for hydronic heaters the appliance has [AN ANNUAL AVERAGE EMISSION LEVEL RATING EQUAL TO OR LESS THAN 2.5 GRAMS OF PM2.5 PER HOUR] an emission rating of 0.10 pounds per million BTU or less.

Section 3. FNSB 8.21.025 C. 1. regarding the visible emissions standard is amended as follows:

1. Standard. No person shall cause, permit, or allow [THE] particulate emissions [FROM A SOLID FUEL BURNING APPLIANCE] from a non-mobile source in the air quality control zone to create opacity greater than 20 percent for a period or periods aggregating more than 10 minutes in any hour except during the first 30

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minutes after the initial firing [OF A COLD UNIT] when the opacity limit shall be less than 50 percent.

Section 4. FNSB 8.21.025 D. is amended as follows:

D. PM2.5 Emissions Crossing Property Lines. No person shall cause or permit particulate emissions [FROM A SOLID FUEL BURNING APPLIANCE] from a non-mobile source to impact the resident(s) of a neighboring property through the creation of an emissions plume that:

1. Crosses a property line;
2. Is observable using EPA Method 22 (40 CFR 60 Appendix A); and
3. Is 25 µg/m³ greater than the surrounding immediate vicinity background PM2.5 level using methods defined by the borough division of air quality. For purposes of this subsection, the surrounding "immediate vicinity" means land within an area measured 1,200 feet in all directions from the boundaries of the emitting property.

Section 5. FNSB 8.21.025 H. is amended as follows:

H. Nuisance. No person within the Fairbanks North Star Borough shall cause or allow particulate emissions [OF A SOLID FUEL OR WASTE OIL BURNING APPLIANCE] from a non-mobile source that are injurious to human life or to property or that unreasonably interfere with the comfortable enjoyment of life or property. No person within the Fairbanks North Star Borough shall operate a solid fuel or waste oil burning appliance in a manner so as to create a public or private nuisance. A violation of a provision of this chapter is hereby declared to be a nuisance.

Section 6. FNSB 8.21.035 A. 1. Regarding applications for the enhanced voluntary removal, replacement and repair program is amended as follows:

1. Application. An application approved by the *division* and signed by all property owner(s) must be submitted along with any documentation required by the *division*. Applications for either the removal of a solid fuel burning appliance or replacement with an appliance designed to use natural gas, propane or home heating oil shall include a signed recordable document restricting future installations of solid fuel burning appliances and requiring appropriate notice to purchasers in the seller's disclosure statement. Applicants must fully comply with the *division's* inspection process which shall verify the existence of a qualifying SFBA or fireplace.

Section 7. FNSB 8.21.035 A. 3., regarding eligibility for the enhanced voluntary removal, replacement and repair program is amended as follows:

3. Eligibility. The program is limited to properties within the [BOROUGH] air quality control zone boundary in which a qualifying SFBA or fireplace is installed. If an application is approved for the program, the applicant will be given up to 90 days to meet all of the requirements. Applicants must have no delinquent property tax or penalty or interest owing at the time of application and at completion of the program requirements.

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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Section 8. FNSB 8.21.035 A. 5., regarding payments for the enhanced voluntary removal, replacement and repair program is amended as follows:

5. Payments. Applicants will be eligible for reimbursements or, at the option of the applicant, payment may be made directly to a borough-approved vendor. Reimbursements and payments shall be available as follows:

a. Replacement of an [OUTDOOR] *hydronic heater*.
i. With either an [BOROUGH LISTED SOLID FUEL BURNING APPLIANCE, OR AN APPLIANCE DESIGNED TO USE PELLETS] EPA certified wood or pellet stove with an emission rate less than or equal to 2.0 grams of PM2.5 per hour, or an EPA phase II certified pellet burning hydronic heater with an emission rate equal to or less than 0.1 pounds per million BTU, up to \$10,000 for purchase and installation of the appliance.

ii. With an appliance designed to use home heating oil (excluding waste oil) or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation), up to \$12,000 for purchase and installation of the appliance.

iii. With an appliance designed to use natural gas, propane, hot water district heat, or electricity up to \$14,000 for purchase and installation of the appliance. [OR A MASONRY HEATER (INCLUDING PARTS, LABOR AND ANY COSTS ASSOCIATED WITH UPGRADING THE CHIMNEY TO THE EXTENT REQUIRED BY THE MANUFACTURER OF THE APPLIANCE FOR PROPER INSTALLATION).

<p>APPLIANCE + FUEL PAYMENT</p> <p>UP TO \$10,000 FOR PURCHASE AND INSTALLATION OF THE APPLIANCE PLUS FUEL PAYMENT, IF APPLICABLE</p>

b. Replacement of a non-borough-listed SFBA or *fireplace*:
i. With either an [BOROUGH LISTED SOLID FUEL BURNING APPLIANCE] EPA certified wood stove, or fireplace insert that has an emission rate less than or equal to 2.0 grams of PM2.5 per hour, or in the case of an EPA certified wood stove, PM2.5 emissions must be reduced by 50 percent and emit 2.0 grams of PM2.5 per hour or less [THAN THE REPLACED HEATER], up to \$4,000 for purchase and installation of the appliance.

ii. With [or]an appliance designed to use pellets, - up to \$5,000 for purchase and installation of the appliance.

iii. With an appliance designed to use home heating oil (excluding waste oil), hot water district heat, electricity, or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation) up to \$6,000 for the purchase and installation of the appliance.

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iv. With an appliance designed to use natural gas[,] or propane up to \$10,000 per purchase and installation of the appliance. [, HOT WATER DISTRICT HEAT, ELECTRICITY OR A MASONRY HEATER (INCLUDING PARTS, LABOR AND ANY COSTS ASSOCIATED WITH UPGRADING THE CHIMNEY TO THE EXTENT REQUIRED BY THE MANUFACTURER OF THE APPLIANCE FOR PROPER INSTALLATION).] Multiple non-borough-listed *solid fuel burning appliances or fireplaces*, or combinations thereof, may be replaced with a single heating device that meets the requirements above, except for those that are fired by solid fuels. Payment will be based on the number of devices removed, up to a maximum of three, and may not exceed the replacement cost.

[APPLIANCE + FUEL PAYMENT

UP TO \$4,000 PER DEVICE FOR PURCHASE AND INSTALLATION OF THE *APPLIANCE* PLUS FUEL PAYMENT, IF APPLICABLE.]

c. Removal of a SFBA (limited to a one-time participation in this program per property).

Cash Payment

\$5,000 [\$2,000] – if removing [OUTDOOR] *hydronic heater*
\$2,000 [\$1,000]– if removing other SFBAs

[D. FUEL PAYMENT. IF A WOOD BURNING APPLIANCE IS PURCHASED AND INSTALLED UNDER THIS PROGRAM, THE APPLICANT IS ELIGIBLE TO RECEIVE AN ADDITIONAL \$300.00 PAYMENT FOR BOROUGH APPROVED PRESSED WOOD ENERGY LOGS MANUFACTURED IN THE FAIRBANKS NORTH STAR BOROUGH.]

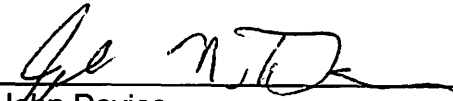
Section 9. Effective Date. This ordinance is effective at 5:00 p.m. on the first Borough business day following its adoption.

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

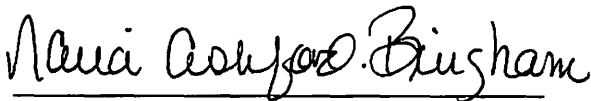
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PASSED AND APPROVED THIS 14TH DAY OF JANUARY, 2016.


John Davies
Presiding Officer

ATTEST:



Nanci Ashford-Bingham, MMC
Borough Clerk

Ayes: Cooper, Golub, Lawrence, Dodge, Quist, Davies

Noes: Roberts

Excused: Sattley, Hutchison

CODE AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be deleted is [BRACKETED AND CAPITALIZED]

By: Karl W. Kassel, Mayor
Kathryn Dodge
John Davies
Introduced: 07/28/2016
Advanced: 07/28/2016
Adopted: 08/11/2016

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2016-20-1A

AN ORDINANCE AMENDING THE FY 2016-17 BUDGET BY APPROPRIATING
\$290,400 FROM THE GENERAL FUND FUND BALANCE TO THE TRANSIT
ENTERPRISE PROJECTS FUND TO DESIGN AND OPERATE AN AIR QUALITY
MONITORING NETWORK

WHEREAS, In 2009 the Environmental Protection Agency (EPA)
designated Fairbanks a "PM2.5 Non-Attainment" area; and

WHEREAS, The Fairbanks North Star Borough (FNSB) returned
regulatory air quality monitoring responsibilities to the State of Alaska in FY 2017; and

WHEREAS, The FNSB has designed a community based Air Quality
Monitoring Plan that will enhance real-time decision making and provide actionable
inputs for improved air quality; and

WHEREAS, The FNSB Air Quality Division will integrate several different
monitor types to identify, in real-time, high PM2.5 emissions sources, resulting in
targeted and increased community engagement actions; and

WHEREAS, The last comprehensive Air Quality speciation study was
conducted by the FNSB in 2013; and

WHEREAS, This funding will be used for, but not limited to, the purchase
of a variety of monitor types, a maintenance and deployment contract, equipment
hosting contracts, equipment operating supplies, and a speciation study; and

WHEREAS, This Community-Based Air Quality Monitoring Program is
estimated to last three years and funding in subsequent fiscal years for operating the
program (FY18 and FY19) are intended to be included in the Mayor's recommended
budgets for those years.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
North Star Borough:

Section 1. Classification. This ordinance is not of a general and permanent nature and shall not be codified.


Section 2. General Fund Appropriation. The FY 2016-17 budget is hereby amended by appropriating \$290,400 to the General Fund budgetary guideline entitled "Contribution to Transit Enterprise Projects Fund" and by increasing Contribution from Fund Balance by a like amount.

Section 3. Transit Enterprise Projects Fund Appropriation. The FY 2016-17 budget is hereby amended by appropriating \$290,400 to the Transit Enterprise Projects Fund budgetary guideline entitled "Community-Based Air Quality Monitoring Program" and increasing Contribution from General Fund by a like amount.

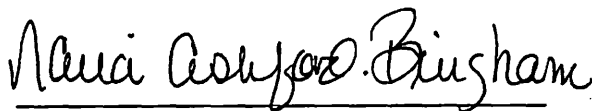
Section 4. Lapse of Funds. Upon completion or abandonment of the project, any unexpended, unencumbered funds will lapse to the General Fund fund balance.

Section 5. Effective Date. This ordinance is effective at 5:00 p.m. on the first Borough business day following its adoption.

PASSED AND APPROVED THIS 11TH DAY OF AUGUST, 2016.


John Davies
Presiding Officer

ATTEST:


Nanci Ashford-Bingham, MMC
Borough Clerk

Yeses: Cooper, Sattley, Hutchison, Westlind, Lawrence, Quist, Davies
Noes: Roberts
Other: Dodge (Excused)

By:	Van Lawrence
	Matthew Cooper
Introduced:	03/24/2016
Advanced:	03/24/2016
Substituted:	05/04/2016
Amended:	05/04/2016
Adopted:	05/04/2016

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2016-21

AN ORDINANCE AMENDING FNSB 8.21.025 TO REQUIRE THE REMOVAL OF CERTAIN UNLISTED HYDRONIC HEATERS IN THE AIR QUALITY CONTROL ZONE, AMENDING THE FY 2015-16 BUDGET BY APPROPRIATING \$500,000 FROM THE GENERAL FUND FUND BALANCE TO THE TRANSIT ENTERPRISE PROJECTS FUND TO PAY FOR THE REMOVAL OF THE UNLISTED HYDRONIC HEATERS AND SUSPEND ALL OTHER PAYMENTS FROM THE VOLUNTARY REMOVAL AND REPLACEMENT PROGRAM UNTIL MAY 1, 2017

WHEREAS, Hydronic heaters that do not have an emissions rating of 0.10 pounds per million BTU or less cannot, under existing code, be legally installed in the borough's nonattainment area; and

WHEREAS, Certain hydronic heaters significantly contribute to the borough's air quality problem; and

WHEREAS, The Borough has offered in past years and continues to offer a removal program that pays homeowners to remove or replace these hydronic heaters; and

WHEREAS, The Borough needs to increase funding of the removal program and temporarily preclude other program spending in order to ensure funds are available to pay owners who are required to remove these unlisted hydronic heaters; and

WHEREAS, The imminent reclassification by the EPA of the Fairbanks North Star Borough from a Moderate to a Serious non-attainment area will result in the imposition of control measures, including expensive technology upgrades for power plants and other stationary sources, which will lead to insignificant improvement to air quality but will significantly increase utility rates; and

WHEREAS, The Borough's continued failure to significantly reduce PM2.5 pollution will further result in offset sanctions which will strangle economic development in the non-attainment area and highway sanctions eliminating federal funding of road projects within the non-attainment area; and

WHEREAS, These sanctions will be lifted if and when air quality violations cease.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks North Star Borough:

Section 1. Sections 2, 3 and 4 are of a general and permanent nature and shall be codified. Sections 5, 6 and 7 shall not be codified.

Section 2. FNSBC 8.21.025 B. is hereby amended as follows:

B. No person who has been convicted of or pled no contest to two or more violations of this chapter involving visible emissions or emissions crossing property lines shall, in the air quality control zone, operate, use or keep installed a hydronic heater unless the hydronic heater is:

1. Borough listed or was listed at the time of installation,
2. A closed combustion system with automatic components that feed solid fuel, including wood pellets, into a firebox where the combustion is enhanced by an active airflow system, or
3. Connected to a thermal mass system that is certified by the contractor or installer as sufficient to allow the hydronic heater to burn at maximum capacity minimizing on/off cycling. The division may require an owner to provide documentation supporting the certification.

This prohibition shall be effective 90 days after the 2nd conviction or entry or a no contest plea.

All persons owning and selling their property within the *air quality control zone* with an installed non-EPA-certified *solid fuel burning appliance*[, OR FOR HYDRONIC HEATERS NON-EPA PHASE II QUALIFICATIONS,]that will not be removed before sale must provide a written disclosure to the buyer prior to closing, and a copy to the division no later than 10 days after the recording of the sale.

Section 3. FNSBC 1.04.050, fine schedule, is amended to add the following:

Code Section	<u>Offense</u>	Penalty/Fine	Mandatory Warning Required
<u>8.21.025(B)</u>	<u>Failure to remove, using or operating a prohibited hydronic heater.</u> <u>1st offense.</u>	<u>\$500</u>	<u>Yes, with removal as soon as practicable.</u>
<u>8.21.025(B)</u>	<u>Failure to remove, using or operating a prohibited hydronic heater.</u> <u>2nd offense.</u>	<u>\$1,000</u>	<u>No.</u>

Section 4. General Fund Appropriation. The FY 2015-16 budget is hereby amended by appropriating \$500,000 to the General Fund budgetary guideline entitled "Contribution to Transit Enterprise Projects Fund" and by increasing Contribution from Fund Balance by a like amount.

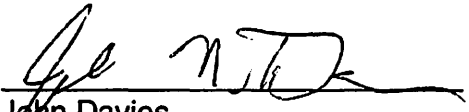
Section 5. Transit Enterprise Projects Fund Appropriation. The FY 2015-16 budget is hereby amended by appropriating \$500,000 to the Transit Enterprise Projects Fund budgetary guideline entitled "Enhanced Voluntary Removal, Replacement, and Repair Program" and by increasing Contribution from General Fund by a like amount.

Section 6. Limited Use of Funds. All unencumbered funds remaining in the removal, replacement and repair program on the effective date of this ordinance may be spent only on payments to applicants within the air quality zone who are (1) removing or replacing an unlisted hydronic heater or (2) removing or replacing a woodstove that has been the subject of more than one substantiated neighborhood complaint and meeting additional criteria established by the Mayor. This restriction shall continue until May 1, 2017 or until the assembly appropriates additional funds to pay for the other removal, replacement or repairs authorized under the program, whichever occurs first.

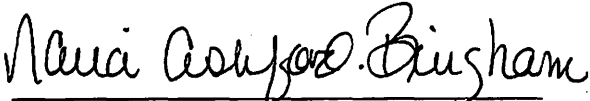
Section 7. Lapse of Funds for the "Enhance Voluntary Removal, Replacement, and Repair Program". Upon completion or abandonment of the program, any unexpended and unencumbered funds will lapse to the General Fund fund balance.

Section 8. Effective Date. Sections 2, 3 and 4 of this ordinance shall be effective on October 1, 2016. The remaining sections shall be effective at 5:00 pm. on the first Borough business day following its adoption.

PASSED AND APPROVED THIS 4TH DAY OF MAY, 2016.


John Davies
Presiding Officer

ATTEST:


Nanci Ashford-Bingham, MMC
Borough Clerk

Ayes: Sattley, Hutchison, Cooper, Westlind, Lawrence, Dodge, Quist, Davies
Noes: Roberts

By: John Davies
Introduced: 04/14/2016
Advanced: 04/14/2016
Adopted: 04/28/2016

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2016-30

AN ORDINANCE AMENDING THE FAIRBANKS NORTH STAR BOROUGH CODE OF
ORDINANCES TO ADOPT THE PROPOSED RENUMBERING AND
REORGANIZATION

WHEREAS, Codification is a process of organizing and arranging all
legislation of a permanent and general nature into Code and a recodification is any new
replacement of the original Code; and

WHEREAS, The Fairbanks North Star Borough Code of Ordinances was
first codified in 1975 and has since undergone two recodifications, the most recent in
2004; and

WHEREAS, It is necessary to routinely update a Code to ensure
maximum usability, flexibility, amendability and economy resulting in a Code that is easy
to access, easy to understand, has room to grow and is simple and inexpensive to
maintain; and

WHEREAS, The proposed recodification is a product of an extensive legal
review by Code Publishing, Co. and the FNSB Legal Department to eliminate expired
provisions, outdated references to state law, and conflicts with other code provisions or
laws; and

WHEREAS, Following recodification, the Fairbanks North Star Borough
Code of Ordinances will present an updated, orderly and logical composition of all
permanent Borough legislation.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
North Star Borough:

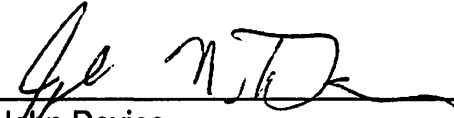
Section 1. This ordinance is not of a general and permanent nature and
shall not be codified.

Section 2. The Clerk is authorized to approve the attached Fairbanks
North Star Borough Code proposed renumbering and reorganization plan prepared by
Code Publishing Company and to take all other action necessary to implement the plan.

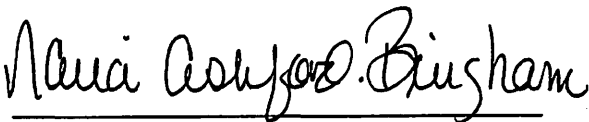
47 Section 3. The attached proposed renumbering and reorganization is
48 adopted.
49

50 Section 4. Effective Date. Section 2 of this ordinance shall be effective at
51 5:00 p.m. of the first Borough business day following its adoption. Section 3 of the
52 ordinance is effective July 15th, 2016.
53

54 PASSED AND APPROVED THIS 28TH DAY OF APRIL, 2016.
55
56

57 
58
59 John Davies
60 Presiding Officer
61
62

63 ATTEST:
64

65 
66

67 Nanci Ashford-Bingham, MMC
68 Borough Clerk
69
70

71 Ayes: Sattley, Hutchison, Cooper, Westlind, Roberts, Lawrence, Dodge, Quist, Davies
72 Noes: None

**Fairbanks North Star Borough Code
Proposed Renumbering**
Prepared by Code Publishing Company

2004 Code	New Code	New Name
TITLE 1		GENERAL PROVISIONS
1.03.010 – 1.03.040, 1.03.110 – 1.03.160	1.04	Code Adoption – General Provisions
1.01	1.08	Borough Incorporation
1.02, 8.01.010, 8.01.020, 8.02.010	1.12	Borough Powers
2.60	1.16	Public Records and Privacy
1.04	1.20	Penalty Provisions
TITLE 2		ADMINISTRATION AND PERSONNEL
2.04	2.04	Borough Mayor
2.16	2.08	Borough Administration Departments
2.19	2.12	Borough Attorney
2.28, 9.04	2.16	Emergency Management
2.05 (except 2.05.050)	2.20	Risk Management
2.32.042, 2.32.052	2.24	Library Director
2.36.070 – 2.36.100	2.28	Parks and Recreation
2.24	2.32	Personnel System
TITLE 3		ASSEMBLY
2.08, 2.09.010(A) – (D) and (H), 2.09.020, 2.09.200	3.04	Borough Assembly
2.09.070, 2.20	3.08	Borough Clerk
1.03.050 – 1.03.100	3.12	Ordinances
2.09.030, 2.09.050, 2.09.060, 2.09.080, 2.09.090	3.16	Meetings
2.09.035	3.20	Agendas
2.09.010(E) – (G) and (I), 2.09.040, 3.01.200(C), 14.02.040(A)	3.24	Committees
TITLE 4		BOARDS AND COMMISSIONS
2.21 (except 2.21.190)	4.04	General Provisions
2.63	4.08	Agricultural Commission
2.48	4.12	Air Pollution Control Commission
2.38, 6.14.020, 6.14.030	4.16	Animal Control Commission
2.10.040 – 2.10.110	4.20	Assembly Board of Ethics

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
18.52.030, last three sentences of 18.56.025(C)	4.24	Board of Adjustment
3.24.002	4.28	Board of Equalization
2.37	4.32	Chena Riverfront Commission
2.100	4.36	Early Childhood Development Commission
2.75	4.40	Economic Development Commission
8.01.030, 8.01.050 – 8.01.070	4.44	Emergency Medical Services (EMS) Boards
2.67	4.48	Health and Social Services Commission
2.64	4.52	Historic Preservation Commission
3.04.130	4.56	Investment Advisory Committee
2.65	4.60	John A. Carlson Community Center Advisory Board
2.80	4.64	Land Management Advisory Commission
2.105	4.68	Landscape Review Board
2.32.012, 2.32.022	4.72	Library Commission
2.36.010 – 2.36.060	4.76	Parks and Recreation Commission
2.40, 18.52.020	4.80	Planning Commission
2.39	4.84	Platting Board
2.56	4.88	Public Transportation Advisory Commission
2.110	4.92	Recycling Commission
2.95	4.96	Road Service Revolving Loan Fund Board
2.70	4.100	Senior Citizens Advisory Commission
2.22	4.104	Salaries and Emoluments Commission
2.45	4.108	Sister City Commission
2.62	4.112	Trails Advisory Commission
2.90	4.116	Youth Commission
TITLE 5		ELECTIONS
2.12.010 – 2.12.120, 2.12.780, 14.01.071	5.04	General Provisions
2.12.130 – 2.12.170	5.08	Voter Qualifications
2.12.180 – 2.12.270	5.12	Candidate Qualifications
2.12.280 – 2.12.315	5.16	Ballots

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
2.12.320 – 2.12.455	5.20	Operation of Polls
2.12.460 – 2.12.510	5.24	Ballot Counting Procedures
2.12.520 – 2.12.620	5.28	Absentee Voting
2.12.630 – 2.12.680	5.32	Canvass Board and Certification of Election Results
2.12.690 – 2.12.730	5.36	Election Recount
2.12.740	5.40	Appeal or Judicial Review
TITLE 6		CODE OF ETHICS
	Division 1.	Assembly Code of Ethics
2.10.330	6.04	Definitions
2.10.010 – 2.10.030	6.08	Purpose and Applicability
2.10.120	6.12	Violations
2.10.130	6.16	Gifts and Required Disclosure
2.10.150 – 2.10.300	6.20	Procedures
2.10.310, 2.10.320	6.24	Penalties and Remedies
	Division 2.	Code of Ethics for Boards and Commissions, Mayor and Borough Employees
2.21.190	6.28	Code of Ethics for Boards and Commissions
2.25	6.32	Code of Ethics for Mayor and Borough Employees
TITLE 7		FINANCE
3.01 (except 3.01.200(C))	7.04	Fiscal Management
3.02	7.08	Grant Management
3.03	7.12	Budget Management
3.04 (except 3.04.130, 3.04.140)	7.16	Investment of Borough Funds
TITLE 8		REVENUE AND TAXATION
	Division 1.	Property Taxes
3.08, 3.11.070, 3.12	8.04	General Provisions
3.10	8.08	Exemptions and Deferrals
3.11.010 – 3.11.060, 3.11.080	8.12	Criteria for Real Property Exemptions and Deferrals

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
3.24.001, 3.28	8.16	Appeal – Remedies Available to Property Taxpayers Seeking Relief From Taxes Assessed or Paid
3.32	8.20	Delinquency and Foreclosure
3.36	8.24	Redemption, Sale and Repurchase
3.40	8.28	Statute of Limitations
	Division 2.	Other Assessments, Taxes and Fees
3.05	8.32	Special Assessment Procedures
3.46	8.36	Oil and Gas Property Tax
3.55	8.40	Borough Debt and Bonds
3.57	8.44	Tobacco Distribution Excise Tax
3.58	8.48	Hotel-Motel Room Tax
3.59	8.52	Alcoholic Beverage Tax
8.10	8.56	Solid Waste Collection District
3.50	8.60	User Fees
TITLE 9		PUBLIC PEACE, MORALS AND WELFARE
9.12	9.04	Offenses Against Public Property
9.16	9.08	Liquor Licenses
9.17	9.12	Marijuana Regulation
9.20	9.16	Compulsory Attendance
8.07	9.20	Curfew for Minors
TITLE 10		TRAFFIC AND VEHICLES
	Division 1.	Abandoned Vehicles – Vehicle Impoundment
8.14	10.04	Abandoned Vehicles
10.01	10.08	Vehicle Impoundment
	Division 2.	Permanent Motor Vehicle and Noncommercial Trailer Registration
10.02	10.12	Permanent Motor Vehicle and Noncommercial Trailer Registration
TITLE 11		NATURAL GAS UTILITY
11.01.010, 11.01.030	11.04	Establishment of Utility and Management
TITLE 12		STREETS AND SIDEWALKS
12.01	12.04	Protection of Public Roads and Areas

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
12.02	12.08	Traffic Regulations
12.03	12.12	Street and Road Maintenance
14.03	12.16	Excavation and Construction on Public Roads Within Road Service Areas
TITLE 13		STORM WATER DISCHARGE
21.20	13.04	Definitions
21.10	13.08	General Provisions
21.30	13.12	Illicit Discharge Detection and Elimination
21.40	13.16	Construction Site Storm Water Runoff Control
21.50	13.20	Post-Construction Storm Water Management
TITLE 14		SERVICE AREAS AND COMMISSIONS
	Division 1.	General Provisions
14.01.011 – 14.01.061, 14.01.091 – 14.01.181 (except last sentence of 14.01.151(C))	14.04	General Provisions
14.01.081, 14.01.160, 17.60.200	14.08	Annexation and Boundaries
	Division 2.	Service Area District Councils
14.02.010, 14.02.020, 14.02.030, 14.02.040(B), 14.02.050	14.12	Service Area District Councils
	Division 3.	Service Area Creation, Powers and Commissions
14.08 (except 14.08.030, 14.08.110, 14.08.150, 14.08.155, 14.08.180, 14.08.230, 14.08.270, 14.08.275, 14.08.290, 14.08.300, 14.08.900)	14.16	Road Construction, Maintenance, and Improvement
14.08.110, 14.08.150, 14.08.155, 14.08.180, 14.08.290, 14.08.300, 14.08.900	14.20	Fire Protection

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
14.08.030, 14.08.230, 14.08.270, 14.08.275	14.24	Utilities – Parks and Recreation
TITLE 15		BUILDINGS AND CONSTRUCTION
15.04	15.04	Floodplain Management Regulations
TITLE 16		PUBLIC PROCUREMENT AND SURPLUS
2.05.050, 3.04.140, 11.01.020, 16.21	16.04	Procurement Generally
16.25	16.08	Office of the Chief Procurement Officer
14.01.151(C) last sentence, 16.30	16.12	Source Selection and Contract Formation
16.35	16.16	Specifications
16.40	16.20	Construction Contract Management and Contract Administration
16.45	16.24	Bonds and Bid Security
16.50	16.28	Contract Clauses and Their Administration
16.55	16.32	Professional Services
16.60	16.36	Debarment or Suspension
16.65	16.40	Appeals and Remedies
16.70	16.44	Ethics in Public Contracting
TITLE 17		SUBDIVISIONS
	Division 1.	General Provisions
17.20	17.04	Definitions
17.10	17.08	General Provisions
	Division 2.	Subdivision Applications and Approval Processes
17.30.010 – 17.30.030	17.12	Major Plats
17.30.040 – 17.30.060	17.16	Quick Plats
17.30.070 – 17.30.100	17.20	Waiver of a Plat
17.30.110, 17.30.120	17.24	Amendments
17.30.130 – 17.30.160	17.28	Right-of-Way Acquisition Plats
	Division 3.	Other Related Applications and Approval Processes
17.40.010 – 17.40.040	17.32	Vacations
17.40.050 – 17.40.080	17.36	Street Naming of Public Roads

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
17.40.090 – 17.40.120	17.40	Street Naming of Private Roads
17.50	17.44	Assurances for Completion
	Division 4.	Subdivision Requirements
17.60.010	17.48	Preliminary Plats
17.60.020 – 17.60.055	17.52	Final Plats
17.60.060 – 17.60.180	17.56	Design and Public Improvement Requirements
17.60.190, 17.60.210, 17.60.220, 17.60.230	17.60	Other Miscellaneous Requirements
	Division 5.	Variances – Appeals
17.70	17.64	Variances
17.80	17.68	Appeals
TITLE 18		ZONING
18.06	18.04	Definitions
18.02	18.08	Comprehensive Plan
18.04	18.12	General Provisions
18.08	18.16	Zoning District Designations
18.10	18.20	OR Outdoor Recreational District
18.11	18.24	OSB Open Space Buffer District
18.14	18.28	RA-40, RA-20, RA-10 and RA-5 Rural and Agricultural Districts
18.16	18.32	RF-4 and RF-2 Rural Farmstead Districts
18.18	18.36	RE-4 and RE-2 Rural Estate Districts
18.20	18.40	RR Rural Residential District
18.22	18.44	SF-20, SF-10 and SF-5 Single-Family Residential Districts
18.24	18.48	TF Two-Family Residential District
18.26	18.52	MF Multiple-Family Residential District
18.28	18.56	MFO Multiple-Family Residential/ Professional Office District
18.32	18.60	LC Light Commercial District
18.34	18.64	GC General Commercial District
18.36	18.68	CBD Central Business District
18.38	18.72	LI Light Industrial District
18.40	18.76	HI Heavy Industrial District

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
18.42	18.80	ML Mineral Lands District
18.44	18.84	GU-1 General Use District
18.45	18.88	GU-5 General Use District
18.48	18.92	Overlay Designations
18.50	18.96	Supplementary Regulations
18.52.010	18.100	Department of Community Planning
18.54	18.104	Amendments, Changes and Procedures
18.56 (except last three sentences of 18.56.025(C))	18.108	Nonconforming (Grandfathered) Uses and Lots
18.58	18.112	Enforcement and Penalties
Title 18 Appendix A	18.116	Geometric Standards
TITLE 19		MOBILE HOMES
19.20	19.04	Definitions
3.16	19.08	Mobile Home Registration
19.10	19.12	Mobile Home Parks
3.44	19.16	Mobile Home Sales
TITLE 20		LAND ACQUISITION, MANAGEMENT AND SALE
25.25.030	20.04	Definitions
25.25.010	20.08	Purpose
25.05	20.12	Land Acquisition
25.10	20.16	Land Management
25.15	20.20	Land Sale
25.20	20.24	Determining Which Borough Lands May Be Sold or Retained
TITLE 21		HEALTH AND SAFETY
3.60, 8.03	21.04	Emergency Communication Services
8.05	21.08	Carbon Monoxide Emergency Episode Prevention Plan
8.06	21.12	Oxygenated Fuel
8.08	21.16	Fireworks
8.12	21.20	Garbage and Solid Waste
8.20	21.24	Vehicle Plug-In Program
8.21	21.28	PM _{2.5} Air Quality Control Program

Fairbanks North Star Borough Code
Proposed Renumbering
Prepared by Code Publishing Company

2004 Code	New Code	New Name
TITLE 22		ANIMALS
6.04.010	22.04	Definitions
6.04.020	22.08	Animal Control Management
6.06	22.12	Fees and Deposits
6.12	22.16	Impoundment
6.14.010	22.20	Animal Bite Incidents
6.16	22.24	Rabies Control
6.24	22.28	Unlawful Acts
6.04.030, 6.28	22.32	Enforcement – Penalties

Approved by borough:	<u>Nanci Askegaard Bingham</u>	<u>4.29.16</u>
	Name	Date
	<u>Borough Clerk</u>	
	Position	

By: Karl Kassel, Mayor
 Introduced: 06/23/2016
 Advanced: 06/23/2016
 Amended: 07/28/2016
 Adopted: 07/28/2016

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2016-37

AN ORDINANCE AMENDING TITLE 21 REGARDING NO OTHER ADEQUATE
 SOURCE OF HEAT DETERMINATIONS

WHEREAS, Borough code exempts qualifying buildings with no other
 adequate source of heat from compliance with certain air quality regulations; and

WHEREAS, Granting these exemptions only to buildings constructed prior
 to December 31, 2016 will encourage property owners to include an alternative source
 of heat in new construction for use during times of exceedances; and

WHEREAS, Because borough codes imposing restrictions on the use of
 solid fuel and other appliances during air alerts apply only to the air quality zone, only
 owners within the air quality zone need to apply for a "no other adequate source of heat"
 determination.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
 North Star Borough:

Section 1. This ordinance is of a general and permanent nature and shall
 be codified.

Section 2. FNSBC 21.28.060 **No other adequate source of heat
 determination** is amended to read as follows:

A. A building owner or other person with a property or managerial interest in [THE] a
 building located within the air quality control zone may obtain a "no other adequate
 source of heat" determination from the division if:

1. The building owner(s) or other person with a property or managerial
 interest in the building applies with the division on a form developed by the division[.];

2. The building owner(s) or other person with a property or managerial
 interest in the building files an affidavit with the application that the subject structure
 must be heated and the structure has no adequate heating source without using a solid
 fuel or waste oil burning appliance or that economic hardships require the applicant's
 use of a solid fuel or waste oil burning appliance or complying with a restriction would

result in damage to property including damage to the appliance itself and its heating system components[.]; and

3. The building was constructed on or before December 31, 2016.

B. There shall be no fee for applying for or obtaining a determination.

C. It shall be a violation to submit a false affidavit for a "no other adequate source of heat" determination.

D. If the "no other adequate source of heat" appliance does not meet the standards set in this chapter, the division shall provide the applicant with information concerning the borough's voluntary removal, replacement and repair program.

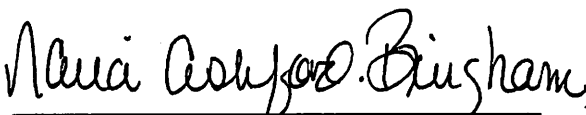
E. Applications denied by the division may be appealed to the air pollution control commission.

Section 3. Effective Date. This ordinance shall be effective at 5:00 p.m. of the first Borough business day following its adoption.

PASSED AND APPROVED THIS 28TH DAY OF JULY, 2016.


John Davies
Presiding Officer

ATTEST:


Nanci Ashford-Bingham, MMC
Borough Clerk

Yeses: Cooper, Sattley, Hutchison, Westlind, Lawrence, Dodge, Davies

Noes: Roberts

Other: Quist (Excused)

By: Karl Kassel, Mayor
 Introduced: 02/23/2017
 Advanced: 02/23/2017
 Amended: 03/09/2017
 Adopted: 03/09/2017
 Immediate
 Reconsideration Failed: 03/09/2017
 Adopted: 03/09/2017

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2017-18

AN ORDINANCE AMENDING CHAPTER 21.28 FNSBC
 REGARDING THE PM_{2.5} AIR QUALITY CONTROL PROGRAM AND AMENDING
 FNSBC 1.20.080, FINE SCHEDULE

WHEREAS, The United States Environmental Protection Agency (EPA),
 on December 22, 2008, declared part of the Fairbanks North Star Borough a non-
 attainment area for fine particulate pollution (PM_{2.5}); and

WHEREAS, On December 16, 2016 the EPA published public notice in
 the Federal Register of its intent to reclassify the Fairbanks North Star Borough's non-
 attainment area from Moderate to Serious status; and

WHEREAS, Reclassification to Serious non-attainment status triggers the
 mandate that Best Available Control Measures be implemented as mitigation measures
 within the non-attainment area; and

WHEREAS, The State of Alaska, through a Memorandum of Agreement
 with the Borough, has authorized the Fairbanks North Star Borough to establish and
 administer an area-wide local PM_{2.5} air quality control program that will operate in lieu of
 and consistent with the State's air quality program; and

WHEREAS, In the winter, PM_{2.5} concentrations in the non-attainment area
 routinely exceed the allowable limit, thereby violating the federal health-based
 standards; and

WHEREAS, An excessive level of PM_{2.5} impacts the health and well being
 of borough residents; and

WHEREAS, Air quality issues could negatively impact large scale
 economic development, including military expansion, in the Fairbanks North Star
 Borough.

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

Text to be added is underlined

Text to be deleted is [BRACKETED, CAPITALIZED]

45
46 NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
47 North Star Borough:

48
49 Section 1. This ordinance is of a general and permanent nature and shall
50 be codified.

51
52 Section 2. FNSBC 21.28.010, **Definitions**, shall be amended as follows:

53
54 ["ADVISORY" MEANS A NOTICE ISSUED BY THE FNSB AIR QUALITY
55 DIVISION WHEN THE DIVISION DETERMINES, USING AVAILABLE DATA, THAT A
56 $PM_{2.5}$ CONCENTRATION OF 25 $\mu\text{G}/\text{M}^3$ HAS OCCURRED, OR WILL LIKELY OCCUR.]

57
58 ["AIR QUALITY ALERT" MEANS AN ADVISORY, ALERT OR EPISODE
59 CONCERNING AIR QUALITY WHETHER ISSUED BY THE FAIRBANKS NORTH
60 STAR BOROUGH OR THE STATE OF ALASKA.]

61
62 "Air quality control zone" means the area of the borough currently contained in
63 the EPA designated nonattainment area, which uses the nonattainment area southern,
64 western and eastern boundaries as modified by their respective intersection with the
65 following northern boundary described as: beginning at the intersection of Isberg Road
66 with Chena Ridge Road on the western boundary of the EPA designated nonattainment
67 area, then following Chena Ridge Road back to Chena Pump Road and continuing
68 north on the Parks Highway to Sheep Creek Road, then Sheep Creek Road to Miller Hill
69 Road, then north on Miller Hill Road, then east on Yankovich, then north from
70 Yankovich Road along the east boundary of the Large Animal Research Station to a
71 point just north of its intersection with Nottingham Drive and follows the ridge crest
72 across Nottingham Estates to approximately the point where Swallow Drive intersects
73 Dalton Trail to north on Dalton Trail to the crest of the Farmer's Loop Ridge, then follow
74 the geographic crest of Farmer's Loop Ridge to its intersection with the New Steese
75 Highway, then southeast on Bennet Road, and along Steel Creek Road to the
76 intersection of Chena Hot Springs Road, and Chena Hot Springs Road to the eastern
77 boundary of the EPA designated nonattainment area.

78
79 "Air Quality Index" (AQI) is an index for reporting daily air quality, which indicates
80 how polluted the air currently is or how polluted it is forecast to become. The higher the
81 AQI value, the greater the level of air pollution and the greater the health concern. AQI
82 is divided into six categories with correspondingly higher levels of health concern as
83 outlined in the table below:

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AQI (Air Quality Index)	AQI Category	Cautionary Statement	Health Statement
0-50	Good	None	None
51-100	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion.	None
101-150	Unhealthy for Sensitive Groups	People with respiratory or heart disease, the elderly, and children should limit prolonged exertion.	Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.
151-200	Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.	Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
201-300	Very Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid outdoor activity; everyone else should avoid prolonged exertion.	Significant aggravation of the heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in the general population.
301-500	Hazardous	Everyone should avoid any outdoor exertion; people with respiratory or heart disease; the elderly and children should remain indoors.	Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in the general population.

"Alert" means a notice issued by the [FNSB AIR QUALITY] division when the division determines, using available data or modeling, that [A] PM_{2.5} [VIOLATION OF THE 35 µg/m³ HAS OCCURED OR WILL LIKELY OCCUR] concentration levels have reached or are forecasted to reach 25µg/m³ or higher for at least 12 consecutive hours.

"Appliance" means a device or apparatus that is manufactured and designed to utilize energy and which does not require a stationary source air quality permit from the state of Alaska under 18 AAC 50.

"Clean wood" means natural wood that has not been painted, varnished, or coated with a similar material, has not been treated with preservatives, and does not contain resins or glues as in plywood or other composite wood products.

"Construction and demolition debris" means a conglomeration of materials from construction, repair, remodeling or demolition of buildings and structures containing any prohibited fuels.

"Cook stove" means a wood burning appliance that is designed primarily for cooking food and that has the following characteristics:

1. An oven, with a volume of 0.028 cubic meters (one cubic foot) or greater, and an oven rack;
2. A device for measuring oven temperatures;
3. A flame path that is routed around the oven;
4. A shaker grate;
5. An ash pan;

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- 111 6. An ash clean-out door below the oven; and
112 7. The absence of a fan or heat channels to dissipate heat from the device.
113

114 "Division" means the Fairbanks North Star Borough air quality division.
115

116 "Emergency Power System" is an independent source of electrical power that
117 supports important electrical systems on loss of normal power supply. An emergency
118 power system may include a standby generator, batteries, and other apparatus.
119 Emergency power systems are installed to protect life and property from the
120 consequences of loss of normal electric power supply.
121

122 "EPA" means the United States Environmental Protection Agency.
123

124 "EPA certified" means that the solid fuel burning appliance meets emission
125 performance standards when tested by an accredited independent laboratory and is
126 labeled according to procedures specified by the EPA in 40 CFR Part 60 Subpart AAA
127 or QQQQ.
128

129 ["EPISODE" MEANS WHEN CONDITIONS REACH OR ARE PREDICTED TO
130 REACH ADVISORY OR ALERT STATUS.]
131

132 "Fireplace" means an assembly consisting of a hearth and open fire chamber of
133 noncombustible factory-built or masonry materials and provided with a chimney, for use
134 with solid fuels, which cannot be operated with an air to fuel ratio of less than 35 to one.
135

136 "Fireplace insert" means a solid fuel burning appliance similar in function and
137 performance to a freestanding wood burning stove, which is made from cast iron or
138 steel designed to be installed in an existing masonry or prefabricated fireplace.
139

140 "Forecast" means a description of the current dispersion conditions described as
141 good, fair, or poor and including the expected PM_{2.5} [CONCENTRATIONS
142 EXPRESSING IN MICROGRAMS PER CUBIC METER] NowCast AQI categorized as
143 good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, or
144 hazardous.
145

146 "Heating appliances" means, but is not limited to: [OIL FURNACES, GAS
147 FURNACES, WOOD STOVES, COAL STOVES, WOOD-FIRED HYDRONIC
148 HEATERS, WOOD-FIRED FURNACES, COAL-FIRED HYDRONIC HEATERS, COAL-
149 FIRED FURNACES] wood, coal, or pellet fired hydronic heaters, stoves, and furnaces;
150 oil or gas fired boilers and furnaces; and masonry heaters, pellet stoves, cook stoves,
151 and fireplaces.
152

153 "Hydronic" means having to do with a system moving heat from one location to
154 another by means of the circulation of a heat transfer liquid through piping or tubing.

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155
156 "Hydronic heater" means a fuel burning appliance designed to (1) burn wood or
157 other solid fuels and (2) heat building space and/or domestic hot water via the
158 distribution, typically through pipes, of a fluid heated in the appliance.
159

160 "Masonry heater" means a wood burning appliance that complies with the
161 guidelines of ASTM E1602-08, Standard Guide for Construction of Masonry Heaters,
162 and:

- 163 1. Is designed and intended for operation only in a closed combustion chamber
164 configuration; and
165 2. Has enough thermal storage capacity to maintain no less than 50.0 percent of the
166 maximum masonry-mass temperature for at least four hours after the maximum
167 masonry-mass temperature has been reached; and
168 3. The masonry heater design and installation has been confirmed and documented
169 by a qualified person or entity approved by the borough.
170

171 "Nonattainment area" is the area depicted on the map attached to the ordinance
172 codified in this chapter and is further defined as follows:

173 Township Range Delineated Boundary for the Fairbanks
174 Nonattainment Area

175 MTRS F001N001 – All Sections, MTRS F001N001E – Sections 2-11, 14-
176 23, 26-34, MTRS F001N002 – Sections 1-5, 8-17, 20-29, 32-36, MTRS
177 F001S001E – Sections 1, 3-30, 32-36, MTRS F001S001W – Sections 1-
178 30, MTRS F001S002E – Sections 6-8, 17-20, 29-36, MTRS F001S002W
179 – Sections 1-5, 8-17, 20-29, 32-33, MTRS F001S003E – Sections 31-32,
180 MTRS F002N001E – Sections 31-35, MTRS F002N001 – Sections 28, 31-
181 36, MTRS F002N002 – Sections 32-33, 36, MTRS F002S001E – Sections
182 1-2, MTRS F002S002E – Sections 1-17, 21-24, MTRS F002S003E –
183 Sections 5-8, 18.
184

185 "NowCast" means a weighted average of hourly air monitoring data used by
186 the EPA for real-time reporting of the AQI for PM.
187

188 "Opacity" means the reduction in transmitted light through a column of smoke as
189 measured by an observer certified in using EPA Reference Method 9 as defined by
190 federal law or EPA approved Alternative Method 82 which is defined as American
191 Society for Testing and Materials (ASTM) D 7520-09.
192

193 "Particulate matter" or "PM" means total particulate matter including PM₁₀ and
194 PM_{2.5} (condensable and noncondensable fraction) and is a complex airborne mixture of
195 extremely small particles and liquid droplets that are made up of a number of
196 components, including acids, organic chemicals, metals, soil, or dust.
197

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"Pellet fuel burning appliance" or "pellet stove" means a closed combustion, vented pellet burning appliance with automatic components creating an active air flow system, sold with the hopper and auger combination as integral parts, and designed, warranted, safety listed, and advertised by the manufacturer specifically to be fueled by pellets of sawdust, wood products and other biomass materials while prohibiting the use of cordwood.

"PM_{2.5}" means particulate matter comprised of particles that have diameters of two and one-half microns or less.

"Sale" means the transfer of ownership or control.

"Solid fuel burning appliance" (SFBA) means any appliance[, UNLESS SPECIFICALLY EXCLUDED FROM THIS DEFINITION,] designed to produce heat by burning nongaseous and nonliquid fuels. This definition includes, but is not limited to:

1. Wood stoves;
2. Coal stoves;
3. Wood-fired *hydronic heaters*;
4. Wood-fired furnaces;
5. Coal-fired *hydronic heaters*;
6. Coal-fired furnaces; [AND]
7. *Fireplace inserts*[.];
8. Pellet fuel burning appliances;
9. Masonry Heaters;
10. Cook Stoves; and
11. Fireplaces.

[THE FOLLOWING APPLIANCES ARE SPECIFICALLY EXCLUDED FROM THIS DEFINITION:

1. MASONRY HEATERS;
2. PELLET FUEL BURNING APPLIANCES;
3. COOK STOVES; AND
4. FIREPLACES.]

"Waste oil burning appliance" means an appliance that burns used or waste oil.

Section 3. FNSBC 21.28.020, **Borough listed appliances**, shall be amended as follows:

A solid fuel burning appliance shall be listed by the borough if:

A. The solid fuel burning appliance is EPA certified [CERTIFIED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)] as meeting the federal emissions rate of 2.5 grams of PM_{2.5} per hour or less, or for hydronic heaters, [MEETS PHASE II

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QUALIFICATIONS] is EPA certified and has an emission rating of 0.10 pounds per million BTU or less[. FOR PURPOSES OF THIS SECTION, "CERTIFIED" MEANS THAT THE SOLID FUEL BURNING APPLIANCE MEETS EMISSION PERFORMANCE STANDARDS WHEN TESTED BY AN ACCREDITED INDEPENDENT LABORATORY AND LABELED ACCORDING TO PROCEDURES SPECIFIED BY THE EPA IN 40 CFR 60 SUBPART AAA]; or

B. The solid fuel burning appliance is a masonry heater, cook stove, or fireplace; or

C. The solid fuel burning appliance is tested, including by use of a handheld or other portable device, by an accredited independent laboratory, or other qualified person or entity approved by the borough, establishing that it meets the emissions rate of 2.5 grams per hour or less. [OR FOR HYDRONIC HEATERS THE APPLIANCE HAS AN EMISSION RATING OF 0.1 POUNDS PER MILLION BTU OR LESS.]

Section 4. FNSBC 21.28.030, **Prohibited acts**, shall be amended as follows:

A. Installation of Certain Solid Fuel Burning Appliances in the Nonattainment Area. Within the nonattainment area no person shall install or allow the installation of a solid fuel burning appliance unless it is listed by the borough as qualifying under this chapter and the installation complies with all other requirements imposed in this chapter. It is a separate violation to fail to remove a solid fuel burning appliance installed in violation of this chapter.

B. No person who has been convicted of or pled no contest to two or more violations of this chapter involving visible emissions or emissions crossing property lines shall, in the air quality control zone, operate, use or keep installed a hydronic heater unless the hydronic heater is:

1. Borough listed or was listed at the time of installation,
2. A closed combustion system with automatic components that feed solid fuel, including wood pellets, into a firebox where the combustion is enhanced by an active airflow system, or
3. Connected to a thermal mass system that is certified by the contractor or installer as sufficient to allow the hydronic heater to burn at maximum capacity minimizing on/off cycling. The division may require an owner to provide documentation supporting the certification.

This prohibition shall be effective 90 days after the second conviction or entry [OR] of a no contest plea.

[ALL PERSONS OWNING AND SELLING THEIR PROPERTY WITHIN THE AIR QUALITY CONTROL ZONE WITH AN INSTALLED NON-EPA-CERTIFIED SOLID FUEL BURNING APPLIANCE THAT WILL NOT BE REMOVED BEFORE SALE MUST PROVIDE A WRITTEN DISCLOSURE TO THE BUYER PRIOR TO CLOSING, AND A

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COPY TO THE DIVISION NO LATER THAN 10 DAYS AFTER THE RECORDING OF THE SALE.]

C. Visible Emissions Standard in the Air Quality Control Zone.

1. Standard. No person shall cause, permit, or allow particulate emissions from a nonmobile source in the air quality control zone to create opacity greater than 20 percent for a period or periods aggregating more than 10 minutes in any hour except during the first 40[30] minutes after the initial firing when the opacity limit shall be less than 50 percent.

2. Procedures and Enforcement. When ambient weather and light conditions permit, methods and procedures specified by the EPA in 40 CFR 60 Appendix A Reference Method 9 (Visual determination of the Opacity of Emissions From Stationary Sources), or an alternative technology that replaces Method 9, when the technology is available and the choice is feasible, upon request of the person being investigated, shall be used to determine compliance with this section. Smoke visible from a chimney, flue or exhaust duct in excess of the opacity standard for a period in excess of 30 minutes shall constitute prima facie evidence of unlawful operation of an applicable solid fuel burning appliance.

D. PM_{2.5} Emissions Crossing Property Lines. No person shall cause or permit particulate emissions from a nonmobile source to impact the resident(s) of a neighboring property through the creation of an emissions plume that:

1. Crosses a property line;
2. Is observable using EPA Method 22 (40 CFR 60 Appendix A); and
3. Is 25 g/m³ greater than the surrounding immediate vicinity background PM_{2.5} level using methods defined by the borough division of air quality. For purposes of this subsection, the surrounding "immediate vicinity" means land within an area measured 1,200 feet in all directions from the boundaries of the emitting property.

E. Borough-Wide Installation Requirements for Hydronic Heaters.

1. Setback. Unless permitted by a variance, [INSTALLING AN APPROVED PELLET FUEL BURNING APPLIANCE]or if replacing an existing hydronic heater with a listed appliance, no person shall install or allow the installation of a hydronic heater located less than:

- a. Three hundred thirty feet from the closest property line; or
- b. Six hundred sixty feet from a school, clinic, hospital, or senior housing unit.

2. Any hydronic heater installed in violation of this section shall be immediately remedied or made inoperable and removed as soon as practicable; however, in no case shall the time of removal be longer than 180 days after notice from the *division* of a violation.

F. Prohibited Fuels. No person shall burn in the borough any fuel, except coal in an appliance designed to use coal, which is not listed in the manufacturer's owner's

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329 manual as an acceptable fuel for that device or any of the following items in a solid fuel
330 burning appliance:

- 331 1. Any wood that does not meet the definition of clean wood or has more
332 than 20 percent moisture content;
- 333 2. Garbage;
- 334 3. Tires;
- 335 4. Materials containing plastic or rubber;
- 336 5. Waste petroleum products;
- 337 6. Paints and paint thinners;
- 338 7. Chemicals;
- 339 8. Glossy or colored papers;
- 340 9. Construction and demolition debris;
- 341 10. Plywood;
- 342 11. Particleboard;
- 343 12. Saltwater driftwood;
- 344 13. Manure;
- 345 14. Animal carcasses;
- 346 15. Asphalt products;
- 347 16. Flooring products.

348
349 G. Sales or Leasing of Solid Fuel Burning Appliances.

350 1. No person shall sell or lease an unlisted solid fuel burning appliance or
351 barrel stove kit in the borough [THAT DOES NOT MEET THE EMISSIONS LIMITS
352 ESTABLISHED IN FNSBC 21.28.020(A)] unless the buyer signs an affidavit, on a form
353 prescribed by the borough, attesting that the appliance will not be installed or used in
354 the air quality control zone. This section does not apply to appliances or stoves that
355 transfer pursuant to a sale of property;

356 2. No person shall commercially sell or offer for sale or lease a solid fuel
357 burning appliance in the borough unless the commercial seller or dealer provides the
358 prospective buyer or lessee, prior to any sales or lease agreement, with a written notice,
359 prepared or approved by the division, that includes, but is not limited to, the following:

360 a. The fuel restrictions imposed in this chapter;
361 b. Proper installation, property location, operation, and maintenance
362 of the appliance;

363 c. An advisory statement noting that operation of solid fuel burning
364 appliances may not be appropriate in some areas due to terrain, meteorological
365 conditions, or other relevant conditions that render the operation of the appliance a
366 public nuisance or health hazard even though it is otherwise legally installed and
367 operated;

368 3. The written notice required in this section shall be signed and dated by the
369 prospective buyer or lessee prior to purchase or lease to indicate receipt of the
370 notification requirements of this section;

371 4. The commercial dealer or seller shall mail or otherwise provide a copy of
372 the notice[,] and any required affidavit[,] to the division within 30 days of the sale. All

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commercial dealers or sellers shall also include with the notice documentation showing whether the appliance sold or leased meets the borough's emissions standard.

H. Nuisance. No person within the Fairbanks North Star Borough shall cause or allow particulate emissions from a nonmobile source that are injurious to human life or to property or that unreasonably interfere with the comfortable enjoyment of life or property. No person within the Fairbanks North Star Borough shall operate a solid fuel or waste oil burning appliance in a manner so as to create a public or private nuisance. A violation of a provision of this chapter is hereby declared to be a nuisance.

I. Other Laws. Nothing in this section precludes other local jurisdictions from having more restrictive codes.

J. Penalties. Upon first conviction of an offense in this chapter, the penalty(ies)/fine(s) set forth in FNSBC Title 1 regarding violations of the PM2.5 air quality control program may be satisfied by completion within 60 days of a borough-approved class covering PM2.5 health concerns, nonattainment, importance of dry wood and proper operation of solid fuel burning appliances. The borough may on its own initiative file notice of satisfaction of attendance requirements with the court, or the defendant may file a certificate of completion with the court within the applicable time frame.

Section 5. FNSBC 21.28.040, **Enhanced voluntary removal, replacement and repair program**, shall be amended as follows:

The Fairbanks North Star Borough shall, to the extent funds are available and appropriated by the assembly, offer an enhanced removal, replacement and repair program to help offset the costs of removing, replacing or repairing a solid fuel burning appliance (SFBA) or fireplace. This program shall be subject to the following eligibility requirements, conditions, and criteria:

A. General Requirements.

1. Application. An application approved by the division and signed by all property owner(s) must be submitted along with any documentation required by the division. Applications for either the removal of a solid fuel burning appliance (SFBA), or replacement of a SFBA with an emergency power system, or an appliance designed to use natural gas, propane, or home heating oil shall include a signed recordable document restricting future installations of SFBAs[SOLID FUEL BURNING APPLIANCES] and requiring appropriate notice to purchasers in the seller's disclosure statement. Applicants must fully comply with the division's inspection process which shall verify the existence of a qualifying SFBA [OR FIREPLACE].

2. Priority Ranking. Applications may be prioritized and may be limited by the division in its discretion based on geographical location, the overall air quality benefit and the type of SFBA or fireplace being removed, replaced or repaired.

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3. Eligibility. The program is limited to properties within the air quality control zone boundary in which a qualifying SFBA or fireplace is installed. If an application is approved for the program, the applicant will be given up to 90 days to meet all of the requirements. Applicants must have no delinquent property tax or penalty or interest owing at the time of application and at completion of the program requirements.

4. Additional Requirements. In addition to the general requirements set forth in this section, applicants must also meet the following requirements:

a. Fully comply with the inspection process required by the division that shall ensure that the existence of the qualifying appliance to be removed, replaced or repaired is properly documented.

b. Removal of appliance.

c. Delivery of appliance to an authorized decommission station.

d. Certificate of destruction delivered to the division, if applicable.

e. Final installation of a qualified appliance visually verified.

f. All aspects of this section may be performed by borough-approved personnel or a borough-approved vendor.

5. Payments. Applicants will be eligible for reimbursements or, at the option of the applicant, payment may be made directly to a borough-approved vendor. Reimbursements and payments shall be available as follows:

a. Replacement of a hydronic heater:

i. With either an EPA-certified wood or pellet stove with an emission rate less than or equal to two grams of PM_{2.5} per hour, or an EPA phase II certified pellet burning hydronic heater with an emission rate equal to or less than 0.1 pounds per million BTU, or an emergency power system, up to \$10,000 for purchase and installation [OF THE APPLIANCE].

ii. With an appliance designed to use home heating oil (excluding waste or used oil) or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation), up to \$12,000 for purchase and installation of the appliance.

iii. With an appliance designed to use natural gas, propane, hot water district heat, or electricity, up to \$14,000 for purchase and installation of the appliance.

b. Replacement of a non-borough-listed SFBA [OR FIREPLACE]:

i. With either an EPA-certified wood stove, or fireplace insert that has an emission rate less than or equal to two grams of PM_{2.5} per hour, or in the case of an EPA-certified wood stove, PM_{2.5} emissions must be reduced by 50 percent and emit two grams of PM_{2.5} per hour or less, up to \$4,000 for purchase and installation of the *appliance*.

ii. With an EPA certified pellet stove that has an emission rate less than or equal to two grams of PM_{2.5} per hour [APPLIANCE DESIGNED TO USE PELLETS], up to \$5,000 for purchase and installation of the *appliance*.

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iii. With an appliance designed to use home heating oil (excluding waste oil), hot water district heat, electricity, or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation), or an emergency power system, up to \$6,000 for the purchase and installation [OF THE APPLIANCE].

iv. With an appliance designed to use natural gas or propane, up to \$10,000 per purchase and installation of the appliance. Multiple non-borough-listed solid fuel burning appliances or fireplaces, or combinations thereof, may be replaced with a single heating device that meets the requirements above, except for those that are fired by solid fuels. Payment will be based on the number of devices removed, up to a maximum of three, and may not exceed the replacement cost.

c. Removal of a SFBA (limited to a one-time participation in this program per property).

i. Removal of a hydronic heater through a one-time payment of \$5,000.

ii. Removal of other SFBAs through a one-time payment of \$2,000.

[CASH PAYMENT
\$5,000 – IF REMOVING HYDRONIC HEATER
\$2,000 – IF REMOVING OTHER SFBAS]

d. Repair Program.

i. The repair program will pay for the:

(A) Replacement of a wood stove's catalytic converter that has exceeded its life span through the one-time payment of up to \$750.00.

(B) Replacement of any emissions-reducing component of an EPA-certified wood stove up to the maximum amount of \$750.00.

ii. In addition to the general requirements set forth in this section, applicants must fully comply with any inspection process required by the division, which may be performed by a borough-approved vendor.

Section 6. FNSBC 21.28.050, **Forecasting exceedances and restrictions in the air quality control zone during an alert**, shall be amended as follows:

A. During the winter months of October through March, the borough shall issue a daily PM_{2.5} forecast by 4:30 p.m. When the PM_{2.5} concentration reaches the onset level for an alert [EPISODE] and is expected to remain at that level for 12 hours or more, an alert [OR ADVISORY] will be declared. An alert [OR ADVISORY] may apply to the air quality control zone as a whole, or to one or more sub-areas designated by the division. Once an alert [OR ADVISORY] is declared, PM_{2.5} control measures set forth in this section shall be implemented and continued until the alert [OR ADVISORY] is cancelled. There are [THREE] two levels of [EPISODES] alerts: Stage 1[,] and Stage 2 [AND 3]. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal

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business days and hours of operation. These restrictions shall not apply during a power failure. When an alert is in effect, outdoor burning is prohibited, including nonpermitted incinerators and burn barrels. This outdoor burning prohibition does not include recreational fires such as bonfires, campfires, or ceremonial fires and the use of fire pits.

B. The division will notify local media to ensure the declared alert [OR ADVISORY] is broadcast. The division shall also use social media and methods of direct communication such as text messages as feasible. Information within the notification will contain the PM_{2.5} forecast, stage level for areas, and actions required to reduce sources of PM_{2.5}. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

C. Stage 1: [VOLUNTARY] Restrictions in the Air Quality Control Zone during an [ADVISORY] Alert.

[1. A STAGE 1 AIR ADVISORY IS IMPLEMENTED WHEN CONCENTRATIONS EXCEED OR ARE FORECASTED TO EXCEED 25 µG/M³.

2. RESIDENTS SHALL BE REQUESTED TO VOLUNTARILY STOP OPERATION OF SOLID FUEL, PELLET, AND WASTE OIL BURNING APPLIANCES, AS WELL AS MASONRY HEATERS AND ALL OUTDOOR BURNING THAT INCLUDES RECREATIONAL FIRES SUCH AS BONFIRES, CAMPFIRES AND THE USE OF FIRE PITS, NONPERMITTED INCINERATORS AND BURN BARRELS IN THE AIR QUALITY CONTROL ZONE.

D. STAGE 2: REQUIRED RESTRICTIONS IN THE AIR QUALITY CONTROL ZONE DURING AN ALERT.]

1. A Stage 1 [2] air alert is implemented when concentrations exceed or are forecasted to exceed 25 [35] µg/m³.

2. Burning is permitted in all EPA-certified solid fuel burning appliances, and EPA [PHASE II QUALIFIED] certified hydronic heaters, [WITH AN ANNUAL AVERAGE EMISSION RATING OF 2.5 GRAMS OR LESS] masonry heaters,[PELLET FUEL BURNING APPLIANCES,] and cook stoves[, AND FIREPLACES]. No fuel source may be added to the combustion[S] chamber or firebox of any solid fuel burning appliance or waste oil burning appliance not listed above. Residents should rely instead on their home's alternate, cleaner source of heat (such as a gas or fuel oil fired furnace or boiler or electric baseboard heaters) until the Stage 1 [2] air alert is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation, the building owner is exempted from complying with the Stage 1 [2] air alert restrictions for that building.

[4. OUTDOOR BURNING IS PROHIBITED INCLUDING NONPERMITTED INCINERATORS AND BURN BARRELS. THIS DOES NOT INCLUDE

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RECREATIONAL FIRES SUCH AS BONFIRES, CAMPFIRE OR CEREMONIAL FIRES AND THE USE OF FIRE PITS.

5. THESE RESTRICTIONS SHALL NOT APPLY DURING A POWER FAILURE.]

D[E]. Stage 2 [3]: Required Restrictions in the Air Quality Control Zone during an Alert.

1. A Stage 2 [3] air alert is implemented when concentrations exceed or are forecasted to exceed 35[55] µG/M³.

2. No fuel source may be added to the combustion[S] chamber or firebox of any solid fuel burning appliance[S, MASONRY HEATERS, PELLET FUEL BURNING APPLIANCES, COOK STOVES, FIREPLACES,] or waste oil burning appliance[S. NO WASTE OIL MAY BE ADDED TO A WASTE OIL BURNING APPLIANCE]. Residents should rely instead on their home's alternate, cleaner source of heat (such as a furnace, boiler or electric baseboard heaters) until the Stage 2 [3] air alert is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation the building owner is exempted from complying with the Stage 2 [3] air alert restrictions for that building.

[4. OUTDOOR BURNING IS PROHIBITED INCLUDING NONPERMITTED INCINERATORS AND BURN BARRELS. THIS DOES NOT INCLUDE RECREATIONAL FIRES SUCH AS BONFIRES, CAMPFIRE OR CEREMONIAL FIRES AND THE USE OF FIRE PITS.

5. THESE RESTRICTIONS SHALL NOT APPLY DURING A POWER FAILURE. OR TO EPA-CERTIFIED SOLID FUEL BURNING APPLIANCES, EPA PHASE II QUALIFIED HYDRONIC HEATERS WITH AN ANNUAL AVERAGE EMISSION RATING OF 2.5 GRAMS OR LESS, MASONRY HEATERS OR PELLET FUEL BURNING APPLIANCES WHEN THE TEMPERATURE IS BELOW -15 FAHRENHEIT AS RECORDED AT THE FAIRBANKS INTERNATIONAL AIRPORT.]

Section 7. FNSBC 21.28.060, **No other adequate source of heat determination**, shall be amended as follows:

A. A building owner or other person with a property or managerial interest in a building located within the air quality control zone may obtain a "no other adequate source of heat" determination from the division if:

1. The SFBA being used to heat the structure is EPA certified, unless an application has been made to the Enhanced Voluntary Removal, Replacement and Repair Program (FNSBC 21.28.040) to remove or replace the non-certified SFBA and it has been denied, a pellet fuel burning appliance installed prior to April 1, 2017, a masonry heater, or a cook stove;

[1]2. The building owner(s) or other person with a property or managerial interest in the building applies with the division on a form developed by the division;

[2]3. The building owner(s) or other person with a property or managerial interest in the building files an affidavit with the application that the subject structure must be heated and the structure has no adequate heating source without using a solid

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fuel or waste oil burning appliance or that economic hardships require the applicant's use of a solid fuel or waste oil burning appliance or complying with a restriction would result in damage to property including damage to the appliance itself and its heating system components; and

[3]4. The building was constructed on or before December 31, 2016.

B. There shall be no fee for applying for or obtaining a determination.

C. It shall be a violation to submit a false affidavit for a "no other adequate source of heat" determination.

D. If the "no other adequate source of heat" appliance does not meet the standards set in this chapter, the division shall provide the applicant with information concerning the borough's voluntary removal, replacement and repair program.

E. Applications denied by the division may be appealed to the air pollution control commission within 30 days of the decision.

F. An applicant that has been denied a "no alternative source of heat determination" by the division because the appliance does not meet the criteria of this section may apply to the air pollution control commission for a variance within 10 days of this decision. A temporary "no alternative source of heat" determination shall be granted pending the decision of the commission. In determining whether to grant a variance, the commission shall consider the location of the appliance, impact on surrounding neighborhood, emission levels of the appliance, the financial investment and ability of the applicant to replace the appliance and any other relevant conditions that indicate the operation of the appliance at that location is not a nuisance or health-hazard. If the commission denies a variance, the "no alternative source of heat" determination shall expire 60 days from the date of denial.

Section 8. FNSBC 21.28.070, Voluntary burn cessation program, is repealed as follows:

[THE FAIRBANKS NORTH STAR BOROUGH WILL, TO THE EXTENT FUNDS ARE AVAILABLE AND APPROPRIATED BY THE ASSEMBLY, ESTABLISH A PROGRAM TO ENCOURAGE, INCENTIVIZE, AND FACILITATE THE VOLUNTARY CESSATION OF THE USE OF WOOD BURNING APPLIANCES (I.E., WOOD STOVES, WOOD-FIRED HYDRONIC HEATERS, WOOD-FIRED FURNACES, FIREPLACES, FIREPLACE INSERTS, MASONRY HEATERS OR PELLET FUEL BURNING APPLIANCES) IN THE AIR QUALITY CONTROL ZONE DURING AIR QUALITY ALERTS. IT IS RECOGNIZED THAT IT WILL BE DIFFICULT OR IMPOSSIBLE FOR SOME HOUSEHOLDS TO PARTICIPATE IN THIS PROGRAM (E.G., THOSE THAT HEAT SOLELY WITH WOOD OR FOR WHICH WOOD IS A NECESSARY SUPPLEMENT DURING PERIODS OF COLD WEATHER).

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THEREFORE, THIS PROGRAM IS INTENDED FOR HOUSEHOLDS THAT ARE ABLE TO USE SPACE HEATING ALTERNATIVES WITH SIGNIFICANTLY LOWER PM_{2.5} EMISSIONS, INCLUDING THOSE FUELED BY GAS, OIL, ELECTRICITY, PROPANE OR DISTRICT HEAT, BUT NOT WOOD OR PELLET STOVES OR OTHER WOOD BURNING APPLIANCES. THIS PROGRAM WILL AT A MINIMUM CONSIST OF THE FOLLOWING COMPONENTS:

A. THE BOROUGH MAY CONTRACT WITH AN AGENCY THAT WILL PROVIDE SERVICES TO PROMOTE THE PROGRAM. THIS AGENCY MUST HAVE THE STANDING, EXPERIENCE, AND CAPABILITY TO CARRY OUT A CAMPAIGN TO ADVERTISE, REACH OUT, AND ATTRACT A LARGE NUMBER OF PARTICIPANTS IN THE NONATTAINMENT AREA WHO ARE WILLING TO CEASE THE USE OF A WOOD BURNING APPLIANCE DURING AIR QUALITY ALERTS.

B. FACILITATION OF THIS PROGRAM BY THE BOROUGH WILL INCLUDE, BUT NOT BE LIMITED TO, THE PROVISION OF NOTICE OF AIR QUALITY ALERTS TO INDIVIDUAL HOUSEHOLDS BY METHODS SUCH AS ELECTRONIC MAIL MESSAGES, TEXT MESSAGES, AUTOMATED PHONE CALLS, NOTICES TO RADIO AND TELEVISION STATIONS, AND INFORMATION POSTED ON ELECTRONIC READER OR DISPLAY BOARDS LOCATED THROUGHOUT THE BOROUGH IN LOCATIONS BEST SUITED TO NOTIFY RESIDENTS OF AIR QUALITY ALERTS.

C. PRIVATE CONTRIBUTIONS, INCLUDING GOODS AND/OR SERVICES, WILL BE SOUGHT FOR ALL APPROPRIATE ELEMENTS OF THE PROGRAM. IN GENERAL THIS WILL FOCUS ON THE PROVISION OF MATERIALS, EQUIPMENT, AND CERTAIN ONE-TIME SERVICES, BUT NOT TO FUND BOROUGH STAFF POSITIONS.]

Section 9. FNSBC 1.20.080, **Fine Schedule**, is hereby amended as follows:

Code Section	Offense	Penalty/Fine	Mandatory Warning Required
[21.28.030(B)]	FAILURE TO DISCLOSE AN UNLISTED APPLIANCE BEFORE SALE	\$500.00	NO]
21.28.050[(D)](C)	Violation of a Stage [2]1 air alert restriction.	\$500	Yes
21.28.050[(E)](D)	Violation of a Stage [3]2 air alert restriction.	\$1,000	Yes

Section 10. Effective Date. This ordinance shall be effective thirty days following its adoption.

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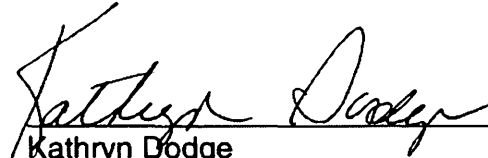
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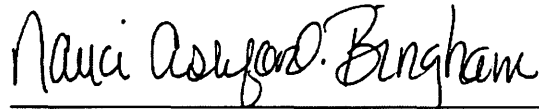
Adopted

December 8, 2017

PASSED AND APPROVED THIS 9TH DAY OF MARCH, 2017.


Kathryn Dodge
Presiding Officer

ATTEST:



Nanci Ashford-Bingham, MMC
Borough Clerk

Yeses: Cooper, Quist, Gray, Lawrence, Dodge, Davies

Noes: Roberts, Sattley

Other: Tacke (Excused)

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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By: Karl Kassel, Mayor
Introduced: 05/18/2017
Advanced: 05/18/2017
Amended: 06/19/2017
Adopted: 06/19/2017
Immediate Reconsideration
Failed: 06/19/2017
Adopted: 06/19/2017

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2017-44

AN ORDINANCE AMENDING CHAPTER 21.28 FNSBC
REGARDING THE PM2.5 AIR QUALITY CONTROL PROGRAM, AMENDING
TITLE 4 REGARDING AIR POLLUTION CONTROL COMMISSION DUTIES,
AMENDING FNSBC 1.20.080, FINE SCHEDULE, AND AMENDING APPENDIX E—
USER FEE SCHEDULE/TRANSPORTATION OF ORDINANCE NO. 2017-20 (FY 2017-
18) TO ADD PERMIT APPLICATION FEES FOR SOLID FUEL BURNING
APPLIANCES IN NEW CONSTRUCTION

WHEREAS, The United States Environmental Protection Agency (EPA) in
December 2009, declared part of the Fairbanks North Star Borough (Borough) a non-
attainment area for fine particulate pollution (PM2.5); and

WHEREAS, On December 16, 2016 the EPA published public notice in
the Federal Register of its intent to reclassify the Borough non-attainment area from
Moderate to Serious status, and the Final Rule was signed on April 28, 2017; and

WHEREAS, The serious non-attainment designation requires a new
serious State Implementation Plan (SIP) to be submitted to the EPA by December 31,
2017 which must include implementation of all Best Available Control Measures
(BACM); and

WHEREAS, The Borough should consider implementing some of the
control measures by June 2017 so goodwill for these control measures can be
recognized in the Serious SIP.

NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks
North Star Borough:

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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Section 1. Sections 2, 3, 4, 5, 6, 7, and 8 of this ordinance are of a general and permanent nature and shall be codified. Sections 9 and 10 of this ordinance are not of a general and permanent nature and shall not be codified.

Section 2. FNSBC 21.28.010, Definitions, shall be amended as follows:
 "Air quality control zone" means the area of the borough currently contained in the EPA designated nonattainment area, which uses the nonattainment area southern, western and eastern boundaries as modified by their respective intersection with the following northern boundary described as: beginning at the intersection of Isberg Road with Chena Ridge Road on the western boundary of the EPA designated nonattainment area, then following Chena Ridge Road back to Chena Pump Road and continuing north on the Parks Highway to Sheep Creek Road, then Sheep Creek Road to Miller Hill Road, then north on Miller Hill Road, then east on Yankovich, then north from Yankovich Road along the east boundary of the Large Animal Research Station to a point just north of its intersection with Nottingham Drive and follows the ridge crest across Nottingham Estates to approximately the point where Swallow Drive intersects Dalton Trail to north on Dalton Trail to the crest of the Farmer's Loop Ridge, then follow the geographic crest of Farmer's Loop Ridge to its intersection with the New Steese Highway, then southeast on Bennett Road, and along Steele Creek Road to the intersection of Chena Hot Springs Road, and Chena Hot Springs Road to the eastern boundary of the EPA designated nonattainment area.

"Air quality index" (AQI) is an index for reporting daily air quality, which indicates how polluted the air currently is or how polluted it is forecast to become. The higher the AQI value, the greater the level of air pollution and the greater the health concern. AQI is divided into six categories with correspondingly higher levels of health concern as outlined in the table below:

AQI (Air Quality Index)	AQI Category	Cautionary Statement	Health Statement
0 – 50	Good	None	None
51 – 100	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion.	None
101 – 150	Unhealthy for Sensitive Groups	People with respiratory or heart disease, the elderly, and children should limit prolonged exertion.	Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and

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AQI (Air Quality Index)	AQI Category	Cautionary Statement	Health Statement
			the elderly.
151 – 200	Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.	Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
201 – 300	Very Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid outdoor activity; everyone else should avoid prolonged exertion.	Significant aggravation of the heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in the general population.
301 – 500	Hazardous	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly and children should remain indoors.	Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in the general population.

“Alert” means a notice issued by the division when the division determines, using available data or modeling, that PM_{2.5} concentration levels have reached or are forecasted to reach 25 µg/m³ or higher for at least 12 consecutive hours.

“Appliance” means a device or apparatus that is manufactured and designed to utilize energy and which does not require a stationary source air quality permit from the state of Alaska under 18 AAC 50.

“Clean wood” means natural wood that has not been painted, varnished, or coated with a similar material, has not been treated with preservatives, and does not contain resins or glues as in plywood or other composite wood products.

“Commence” means (i) begin, or cause to begin, actual on-site construction or (ii) enter into binding agreements or contractual obligations to begin construction, which cannot be cancelled or modified without substantial loss to the owner.

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88 "Construction and demolition debris" means a conglomeration of materials from
89 construction, repair, remodeling or demolition of buildings and structures containing any
90 prohibited fuels.

92 "Cook stove" means a wood burning appliance that is designed primarily for cooking
93 food and that has the following characteristics:

- 94 1. An oven, with a volume of 0.028 cubic meters (one cubic foot) or greater,
95 and an oven rack;
- 96 2. A device for measuring oven temperatures;
- 97 3. A flame path that is routed around the oven;
- 98 4. A shaker grate;
- 99 5. An ash pan;
- 100 6. An ash clean-out door below the oven; and
- 101 7. The absence of a fan or heat channels to dissipate heat from the device.

103 "Division" means the Fairbanks North Star Borough air quality division.

105 "Emergency power system" is an independent source of electrical power that supports
106 important electrical systems on loss of normal power supply. An emergency power
107 system may include a standby generator, batteries, and other apparatus. Emergency
108 power systems are installed to protect life and property from the consequences of loss
109 of normal electric power supply.

111 "EPA" means the United States Environmental Protection Agency.

113 "EPA certified" means that the solid fuel burning appliance meets emission performance
114 standards when tested by an accredited independent laboratory and is labeled
115 according to procedures specified by the EPA in 40 CFR Part 60 Subpart AAA or
116 QQQQ.

118 "Fireplace" means an assembly consisting of a hearth and open fire chamber of
119 noncombustible factory-built or masonry materials and provided with a chimney, for use
120 with solid fuels, which cannot be operated with an air to fuel ratio of less than 35 to one.

122 "Fireplace insert" means a solid fuel burning appliance similar in function and
123 performance to a freestanding wood burning stove, which is made from cast iron or
124 steel designed to be installed in an existing masonry or prefabricated fireplace.

126 "Forecast" means a description of the current dispersion conditions described as good,
127 fair, or poor and including the expected PM2.5 NowCast AQI categorized as good,
128 moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, or hazardous.

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“Heating appliances” means, but is not limited to: wood, coal, or pellet fired hydronic heaters, stoves, and furnaces; oil or gas fired boilers and furnaces; and masonry heaters, pellet stoves, cook stoves, and fireplaces.

“Hydronic” means having to do with a system moving heat from one location to another by means of the circulation of a heat transfer liquid through piping or tubing.

“Hydronic heater” means a fuel burning appliance designed to (1) burn wood or other solid fuels and (2) heat building space and/or domestic hot water via the distribution, typically through pipes, of a fluid heated in the appliance.

“Masonry heater” means a wood burning appliance that complies with the guidelines of ASTM E1602-08, Standard Guide for Construction of Masonry Heaters, and:

1. Is designed and intended for operation only in a closed combustion chamber configuration; and
2. Has enough thermal storage capacity to maintain no less than 50.0 percent of the maximum masonry-mass temperature for at least four hours after the maximum masonry-mass temperature has been reached; and
3. The masonry heater design and installation has been confirmed and documented by a qualified person or entity approved by the borough.

“New Construction” means construction of entirely new structures designed for heated occupancy and any structural alteration that adds heated square footage to an existing structure whether or not the structure was previously occupied.

“Nonattainment area” is the area depicted on the map attached to the ordinance codified in this chapter and is further defined as follows:

Township Range Delineated Boundary for the Fairbanks
Nonattainment Area

MTRS F001N001 – All Sections, MTRS F001N001E – Sections 2-11, 14-23, 26-34, MTRS F001N002 – Sections 1-5, 8-17, 20-29, 32-36, MTRS F001S001E – Sections 1, 3-30, 32-36, MTRS F001S001W – Sections 1-30, MTRS F001S002E – Sections 6-8, 17-20, 29-36, MTRS F001S002W – Sections 1-5, 8-17, 20-29, 32-33, MTRS F001S003E – Sections 31-32, MTRS F002N001E – Sections 31-35, MTRS F002N001 – Sections 28, 31-36, MTRS F002N002 – Sections 32-33, 36, MTRS F002S001E – Sections 1-2, MTRS F002S002E – Sections 1-17, 21-24, MTRS F002S003E – Sections 5-8, 18.

“NowCast” means a weighted average of hourly air monitoring data used by the EPA for real-time reporting of the AQI for PM.

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“Opacity” means the reduction in transmitted light through a column of smoke as measured by an observer certified in using EPA Reference Method 9 as defined by federal law or EPA approved Alternative Method 82 which is defined as American Society for Testing and Materials (ASTM) D 7520-09.

“Particulate matter” or “PM” means total particulate matter including PM10 and PM2.5 (condensable and noncondensable fraction) and is a complex airborne mixture of extremely small particles and liquid droplets that are made up of a number of components, including acids, organic chemicals, metals, soil, or dust.

“Pellet fuel burning appliance” or “pellet stove” means a closed combustion, vented pellet burning appliance with automatic components creating an active air flow system, sold with the hopper and auger combination as integral parts, and designed, warranted, safety listed, and advertised by the manufacturer specifically to be fueled by pellets of sawdust, wood products and other biomass materials while prohibiting the use of cordwood.

“PM2.5” means particulate matter comprised of particles that have diameters of two and one-half microns or less.

“Proper Wood Storage” means specific and dedicated space to store clean wood in such a manner that the clean wood is not in contact with soil, the top of the clean wood is adequately protected from precipitation, and with airflow available to the clean wood.

“Sale” means the transfer of ownership or control.

“Solid fuel burning appliance” (SFBA) means any appliance designed to produce heat by burning nongaseous and nonliquid fuels. This definition includes, but is not limited to:

1. Wood stoves;
2. Coal stoves;
3. Wood-fired hydronic heaters;
4. Wood-fired furnaces;
5. Coal-fired hydronic heaters;
6. Coal-fired furnaces;
7. Fireplace inserts;
8. Pellet fuel burning appliances;
9. Masonry heaters;
10. Cook stoves; and
11. Fireplaces.

“Waste oil burning appliance” means an appliance that burns used or waste oil.

Section 3. FNSBC 21.28.030 **Prohibited acts**, shall be amended as follows:

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A. Installation of Certain Solid Fuel Burning Appliances in the Nonattainment Area. Within the nonattainment area no person shall install or allow the installation of a solid fuel burning appliance unless it is listed by the borough as qualifying under this chapter and the installation complies with all other requirements imposed in this chapter. It is a separate violation to fail to remove a solid fuel burning appliance installed in violation of this chapter.

B. No person who has been convicted of or pled no contest to two or more violations of this chapter involving visible emissions or emissions crossing property lines shall, in the air quality control zone, operate, use or keep installed a hydronic heater unless the hydronic heater is:

1. Borough listed or was listed at the time of installation,
2. A closed combustion system with automatic components that feed solid fuel, including wood pellets, into a firebox where the combustion is enhanced by an active airflow system, or
3. Connected to a thermal mass system that is certified by the contractor or installer as sufficient to allow the hydronic heater to burn at maximum capacity minimizing on/off cycling. The division may require an owner to provide documentation supporting the certification.

This prohibition shall be effective 90 days after the second conviction or entry of a no contest plea.

C. Visible Emissions Standard in the Air Quality Control Zone.

1. Standard. No person shall cause, permit, or allow particulate emissions from a nonmobile source in the air quality control zone to create opacity greater than 20 percent for a period or periods aggregating more than 10 minutes in any hour except during the first 40 minutes after the initial firing when the opacity limit shall be less than 50 percent.

2. Procedures and Enforcement. When ambient weather and light conditions permit, methods and procedures specified by the EPA in 40 CFR 60 Appendix A Reference Method 9 (Visual determination of the Opacity of Emissions From Stationary Sources), or an alternative technology that replaces Method 9, when the technology is available and the choice is feasible, upon request of the person being investigated, shall be used to determine compliance with this section. Smoke visible from a chimney, flue or exhaust duct in excess of the opacity standard for a period in excess of 30 minutes shall constitute prima facie evidence of unlawful operation of an applicable solid fuel burning appliance.

D. PM_{2.5} Emissions Crossing Property Lines. No person shall cause or permit particulate emissions from a nonmobile source to impact the resident(s) of a neighboring property through the creation of an emissions plume that:

1. Crosses a property line;

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2. Is observable using EPA Method 22 (40 CFR 60 Appendix A); and
 3. Is 25 $\mu\text{g}/\text{m}^3$ greater than the surrounding immediate vicinity background $\text{PM}_{2.5}$ level using methods defined by the borough division of air quality. For purposes of this subsection, the surrounding "immediate vicinity" means land within an area measured 1,200 feet in all directions from the boundaries of the emitting property.

E. Requirements for Installation of Solid Fuel Burning Appliances in New Construction.

1. For all new construction that commences on or after January 1, 2018 and is located within the air quality control zone the following will apply:

a. Installation of a solid fuel burning appliance is prohibited unless a permit has been issued by the division. A permit must be obtained for any solid fuel burning appliance installed in new construction prior to installation of the appliance.

b. Application. The permit application will require the owner(s) to certify they will meet the following requirements:

i. The proposed solid fuel burning appliance meets all federal, state, and borough air quality regulations;

ii. The proposed solid fuel burning appliance meets the requirements of this chapter;

iii. The proposed solid fuel burning appliance is properly sized for the structure in the opinion of a Borough listed vendor/installer;

iv. The proposed solid fuel burning appliance will be installed by a Borough listed vendor/installer attesting to proper installation of the device based on the manufacturer's installation manual;

v. Proper wood storage will be available; and

vi. Training will be provided to the occupants on proper wood burning techniques.

c. Permit. An installation permit will be issued upon receipt of an application meeting the requirements of subsection (b) and payment of any required fee. Within 24 months of issuance, the owner must verify with supporting documentation that the requirements of subsection (b) have been completed, upon which an operating permit will be issued. If verification has not been submitted or approved within 24 months the permit application will automatically expire.

d. After a public hearing, and prior to installation of the solid fuel burning appliance, the air pollution control commission may grant a variance, the commission shall consider any alternate proposal that the applicant submits, the location of the appliance, impact on surrounding neighborhood of the requested variance, emission levels of the appliance, and any other relevant conditions that indicate the operation of the appliance at that location or the requirement that is being varied will not result in a nuisance or health-hazard.

F[E]. Borough-Wide Installation Requirements for Hydronic Heaters.

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1. Setback. Unless permitted by a variance, or if replacing an existing hydronic heater with a listed appliance, no person shall install or allow the installation of a hydronic heater located less than:

- a. Three hundred thirty feet from the closest property line; or
- b. Six hundred sixty feet from a school, clinic, hospital, or senior housing unit.

2. Any hydronic heater installed in violation of this section shall be immediately remedied or made inoperable and removed as soon as practicable; however, in no case shall the time of removal be longer than 180 days after notice from the division of a violation.

3. Variance. After a public hearing, the commission shall determine whether a person may receive a variance from the installation requirements of this subsection allowing them to install a hydronic heater. In determining whether to grant the variance, the commission shall consider the proposed location of the appliance, impact on surrounding neighborhood, emission levels of the appliance, terrain, meteorological conditions, and other relevant conditions that may render the operation of the appliance at that location a nuisance or a health hazard.

G[F]. Prohibited Fuels. No person shall burn in the borough any fuel, except coal in an appliance designed to use coal, which is not listed in the manufacturer's owner's manual as an acceptable fuel for that device or any of the following items in a solid fuel burning appliance:

1. Any wood that does not meet the definition of clean wood or has more than 20 percent moisture content;
2. Garbage;
3. Tires;
4. Materials containing plastic or rubber;
5. Waste petroleum products;
6. Paints and paint thinners;
7. Chemicals;
8. Glossy or colored papers;
9. Construction and demolition debris;
10. Plywood;
11. Particleboard;
12. Saltwater driftwood;
13. Manure;
14. Animal carcasses;
15. Asphalt products;
16. Flooring products.

H[G]. Sales or Leasing of Solid Fuel Burning Appliances.

1. No person shall sell or lease an unlisted solid fuel burning appliance or barrel stove kit in the borough unless the buyer signs an affidavit, on a form prescribed by the borough, attesting that the appliance will not be installed or used in the air quality

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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control zone. This section does not apply to appliances or stoves that transfer pursuant to a sale of property;

2. No person shall commercially sell or offer for sale or lease a solid fuel burning appliance in the borough unless the commercial seller or dealer provides the prospective buyer or lessee, prior to any sales or lease agreement, with a written notice, prepared or approved by the division, that includes, but is not limited to, the following:

a. The fuel restrictions imposed in this chapter;
b. Proper installation, property location, operation, and maintenance of the appliance;

c. An advisory statement noting that operation of solid fuel burning appliances may not be appropriate in some areas due to terrain, meteorological conditions, or other relevant conditions that render the operation of the appliance a public nuisance or health hazard even though it is otherwise legally installed and operated;

3. The written notice required in this section shall be signed and dated by the prospective buyer or lessee prior to purchase or lease to indicate receipt of the notification requirements of this section;

4. The commercial dealer or seller shall mail or otherwise provide a copy of the notice and any required affidavit to the division within 30 days of the sale. All commercial dealers or sellers shall also include with the notice documentation showing whether the appliance sold or leased meets the borough's emissions standard.

I[H]. Nuisance. No person within the Fairbanks North Star Borough shall cause or allow particulate emissions from a nonmobile source that are injurious to human life or to property or that unreasonably interfere with the comfortable enjoyment of life or property. No person within the Fairbanks North Star Borough shall operate a solid fuel or waste oil burning appliance in a manner so as to create a public or private nuisance. A violation of a provision of this chapter is hereby declared to be a nuisance.

J[I]. Other Laws. Nothing in this section precludes other local jurisdictions from having more restrictive codes.

K[J]. Penalties. Upon first conviction of an offense in this chapter, the penalty(ies)/fine(s) set forth in FNSBC Title 1 regarding violations of the PM2.5 air quality control program may be satisfied by completion within 60 days of a borough-approved class covering PM2.5 health concerns, nonattainment, importance of dry wood and proper operation of solid fuel burning appliances. The borough may on its own initiative file notice of satisfaction of attendance requirements with the court, or the defendant may file a certificate of completion with the court within the applicable time frame.

Section 4. 21.28.040 **Enhanced voluntary removal, replacement and repair program**, shall be amended as follows:

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT

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The Fairbanks North Star Borough shall, to the extent funds are available and appropriated by the assembly, offer an enhanced removal, replacement and repair program to help offset the costs of removing, replacing or repairing a solid fuel burning appliance (SFBA) or fireplace. This program shall be subject to the following eligibility requirements, conditions, and criteria:

A. General Requirements.

1. Application. An application approved by the division and signed by all property owner(s) must be submitted along with any documentation required by the division. Applications for either the removal of a solid fuel burning appliance (SFBA), or replacement of a SFBA with an emergency power system, or an appliance designed to use natural gas, propane, or home heating oil shall include a signed recordable document restricting future installations of SFBA's and requiring appropriate notice to purchasers in the seller's disclosure statement. Applicants must fully comply with the division's inspection process which shall verify the existence of a qualifying SFBA.

2. Priority Ranking. Applications may be prioritized and may be limited by the division in its discretion based on geographical location, the overall air quality benefit and the type of SFBA or fireplace being removed, replaced or repaired.

3. Eligibility. The program is limited to properties within the air quality control zone boundary in which a qualifying SFBA or fireplace is installed. If an application is approved for the program, the applicant will be given up to 90 days to meet all of the requirements. Applicants must have no delinquent property tax or penalty or interest owing at the time of application and at completion of the program requirements.

4. Additional Requirements. In addition to the general requirements set forth in this section, applicants must also meet the following requirements:

a. Fully comply with the inspection process required by the division that shall ensure that the existence of the qualifying appliance to be removed, replaced or repaired is properly documented.

b. Removal of appliance.

c. Delivery of appliance to an authorized decommission station.

d. Certificate of destruction delivered to the division, if applicable.

e. Final installation of a qualified appliance visually verified.

f. The qualified appliance must be properly installed by a Borough listed vendor/installer attesting to proper installation of the device based on manufacturer's installation manual, compliance with any building code requirements, and that the device is properly sized for the building in question.

g. The applicant will be required to demonstrate proper wood storage.

h. The applicant will be required to complete training with the vendor, ensuring that they understand how their particular device operates, including education on proper wood burning techniques.

i.[F] All aspects of this section may be performed by borough-approved personnel or a borough-approved vendor.

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5. Payments. Applicants will be eligible for reimbursements or, at the option of the applicant, payment may be made directly to a borough-approved vendor. Reimbursements and payments shall be available as follows:

a. Replacement of a hydronic heater:

i. With either an EPA certified wood or pellet stove with an emission rate less than or equal to two grams of PM2.5 per hour, or an EPA phase II certified pellet burning hydronic heater with an emission rate equal to or less than 0.1 pounds per million BTU, or an emergency power system, up to \$10,000 for purchase and installation.

ii. With an appliance designed to use home heating oil (excluding waste or used oil) or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation), up to \$12,000 for purchase and installation of the appliance.

iii. With an appliance designed to use natural gas, propane, hot water district heat, or electricity, up to \$14,000 for purchase and installation of the appliance.

b. Replacement of a non-borough-listed SFBA:

i. With either an EPA certified wood stove, or fireplace insert that has an emission rate less than or equal to two grams of PM2.5 per hour, or in the case of an EPA certified wood stove, PM2.5 emissions must be reduced by 50 percent and emit two grams of PM2.5 per hour or less, up to \$4,000 for purchase and installation of the appliance.

ii. With an EPA certified pellet stove that has an emission rate less than or equal to two grams of PM2.5 per hour, up to \$5,000 for purchase and installation of the appliance.

iii. With an appliance designed to use home heating oil (excluding waste oil), hot water district heat, electricity, or a masonry heater (including parts, labor and any costs associated with upgrading the chimney to the extent required by the manufacturer of the appliance for proper installation), or an emergency power system, up to \$6,000 for the purchase and installation.

iv. With an appliance designed to use natural gas or propane, up to \$10,000 per purchase and installation of the appliance. Multiple non-borough-listed solid fuel burning appliances or fireplaces, or combinations thereof, may be replaced with a single heating device that meets the requirements above, except for those that are fired by solid fuels. Payment will be based on the number of devices removed, up to a maximum of three, and may not exceed the replacement cost.

c. Removal of a SFBA (limited to a one-time participation in this program per property).

i. Removal of a hydronic heater through a one-time payment of \$5,000.

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ii. Removal of other SFBAs through a one-time payment of \$2,000.

d. Repair Program.

i. The repair program will pay for the:

(A) Replacement of a wood stove's catalytic converter that has exceeded its life span through the one-time payment of up to \$750.00.

(B) Replacement of any emissions-reducing component of an EPA certified wood stove up to the maximum amount of \$750.00.

ii. In addition to the general requirements set forth in this section, applicants must fully comply with any inspection process required by the division, which may be performed by a borough-approved vendor.

Section 5. FNSBC 21.28.050, **Forecasting exceedances and restrictions in the air quality control zone during an alert**, shall be amended as follows:

A. During the winter months of October through March, the borough shall issue a daily PM2.5 forecast by 4:30 p.m. When the PM2.5 concentration reaches the onset level for an alert and is expected to remain at that level for 12 hours or more, an alert will be declared. An alert may apply to the air quality control zone as a whole, or to one or more sub-areas designated by the division. Once an alert is declared, PM2.5 control measures set forth in this section shall be implemented and continued until the alert is cancelled. There are two levels of alerts: Stage 1 and Stage 2. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation. These restrictions shall not apply during a power failure. When an alert is in effect, outdoor burning is prohibited, including nonpermitted incinerators and burn barrels. This outdoor burning prohibition does not include recreational fires such as bonfires, campfires, or ceremonial fires and the use of fire pits.

B. The division will notify local media to ensure the declared alert is broadcast. The division shall also use social media and methods of direct communication such as text messages as feasible. Information within the notification will contain the PM2.5 forecast, stage level for areas, and actions required to reduce sources of PM2.5. The obligations imposed in this subsection do not require, absent specific funding for that purpose, any actions to be taken outside of the borough's normal business days and hours of operation.

C. Stage 1: Restrictions in the Air Quality Control Zone during an Alert.

1. A Stage 1 air alert is implemented when concentrations exceed or are forecasted to exceed 25 $\mu\text{g}/\text{m}^3$.

2. No fuel source may be added to the combustion chamber of a firebox of any solid fuel burning appliance or waste oil burning appliance. Residents should rely

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instead on their home's alternate, cleaner source of heat (such as a furnace, boiler or electric baseboard heaters) until the Stage 1 air alert is cancelled.[BURNING IS PERMITTED IN ALL EPA CERTIFIED SOLID FUEL BURNING APPLIANCES, AND EPA CERTIFIED HYDRONIC HEATERS, MASONRY HEATERS, AND COOK STOVES. NO FUEL SOURCE MAY BE ADDED TO THE COMBUSTION CHAMBER OR FIREBOX OF ANY SOLID FUEL BURNING APPLIANCE OR WASTE OIL BURNING APPLIANCE NOT LISTED ABOVE. RESIDENTS SHOULD RELY INSTEAD ON THEIR HOME'S ALTERNATE, CLEANER SOURCE OF HEAT (SUCH AS A GAS OR FUEL OIL FIRED FURNACE OR BOILER OR ELECTRIC BASEBOARD HEATERS) UNTIL THE STAGE 1 AIR ALERT IS CANCELLED.]

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation, the building owner is exempted from complying with the Stage 1 air alert restrictions for that building.

4. If a building owner or other person with a property or managerial interest in the building has an approved Stage 1 Waiver the building owner is exempted from complying with the Stage 1 air alert restrictions for that building. A Stage 1 Waiver will be granted if the person with property or managerial interest verifies that the SFBA being operated during a Stage 1 air alert is a Borough listed appliance. A Stage 1 Waiver may be obtained by completing an application on a form developed by the division, that includes the following information:

a. Documentation of approved appliance must be submitted, including pictures, make and model.

b. Documentation of the applicant's ability to properly store wood.

c. Documentation the applicant has taken a class or training in proper wood burning techniques.

D. Stage 2: Required Restrictions in the Air Quality Control Zone during an Alert.

1. A Stage 2 air alert is implemented when concentrations exceed or are forecasted to exceed 35 $\mu\text{g}/\text{m}^3$.

2. No fuel source may be added to the combustion chamber or firebox of any solid fuel burning appliance or waste oil burning appliance. Residents should rely instead on their home's alternate, cleaner source of heat (such as a furnace, boiler or electric baseboard heaters) until the Stage 2 air alert is cancelled.

3. If a building owner or other person with a property or managerial interest in the building has an approved "no other adequate source of heat" designation the building owner is exempted from complying with the Stage 2 air alert restrictions for that building.

Section 6. FNSBC 21.28.060 **No other adequate source of heat determination**, shall be amended as follows:

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A. A building owner or other person with a property or managerial interest in a building located within the air quality control zone may obtain a "no other adequate source of heat" determination from the division if:

1. The SFBA being used to heat the structure is a Borough listed appliance;[EPA CERTIFIED UNLESS AN APPLICATION HAS BEEN MADE TO THE ENHANCED VOLUNTARY REMOVAL, REPLACEMENT AND REPAIR PROGRAM TO REMOVE OR REPLACE THE NONCERTIFIED SFBA AND HAS BEEN DENIED, A PELLET FUEL BURNING APPLIANCE INSTALLED PRIOR TO APRIL 1, 2017, A MASONRY HEATER, OR A COOK STOVE.]

a.
2. The building owner(s) or other person with a property or managerial interest in the building applies with the division on a form developed by the division, including the following:

a. Documentation of approved appliance must be submitted, including pictures, make, model, and serial number.

b. Documentation of the applicant's ability to properly store wood.

c. Documentation the applicant has taken a class or training in proper wood burning techniques;

3. The building owner(s) or other person with a property or managerial interest in the building files an affidavit with the application that the subject structure must be heated and the structure has no adequate heating source without using a solid fuel [OR WASTE OIL] burning appliance or that economic hardships require the applicant's use of a solid fuel [OR WASTE OIL] burning appliance or complying with a restriction would result in damage to property including damage to the appliance itself and its heating system components. If economic hardship is the reason the applicant has no other adequate source of heat, validating documentation is required. Validating documentation may be established by showing approval for assistance from a list of agencies or programs that provide economic assistance (e.g., programs based on HHS poverty guidelines, unemployment insurance, nutrition assistance) to be made available by the division;

4. The building was constructed on or before December 31, 2016.

B. There shall be no fee for applying for or obtaining a determination.

C. It shall be a violation to submit a false affidavit for a "no other adequate source of heat" determination.

D. If the "no other adequate source of heat" appliance does not meet the standards set in this chapter, the division shall provide the applicant with information concerning the borough's voluntary removal, replacement and repair program.

E. Applications denied by the division may be appealed to the air pollution control commission within 30 days of the decision.

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F. An applicant that has been denied a "no alternative source of heat determination" by the division because the appliance does not meet the criteria of this section may apply to the air pollution control commission for a variance within 10 days of this decision. A temporary "no alternative source of heat" determination shall be granted pending the decision of the commission. In determining whether to grant a variance, the commission shall consider the location of the appliance, impact on surrounding neighborhood, emission levels of the appliance, the financial investment and ability of the applicant to replace the appliance and any other relevant conditions that indicate the operation of the appliance at that location is not a nuisance or health hazard. If the commission denies a variance, the "no alternative source of heat" determination shall expire 60 days from the date of denial.

Section 7. FNSBC 1.20.080, **Fine Schedule**, is hereby amended as follows:

21.28.030(E)	<u>Failure to obtain, submit and execute a permit for installing a SFBA in new construction.</u>	\$1,000	No
21.28.030(F[E])	Illegal installation of hydronic heaters.	\$500.00	No
21.28.030(F[E])	Failure to remove hydronic heaters.	\$500.00	No
21.28.030(G[F])	Use of prohibited fuels. 1st offense	\$100.00	Yes
21.28.030(G[F])	Use of prohibited fuels. 2nd offense	\$500.00	No
21.28.030(H[G])	Violation of commercial sale requirements.	\$500.00	No

Section 8. Subsection G of FNSBC 4.12.110 shall be amended as follows:

G. The commission shall hear variance requests as set forth in FNSBC Title 21. [AFTER A PUBLIC HEARING, THE COMMISSION SHALL DETERMINE WHETHER A PERSON MAY RECEIVE A VARIANCE FROM THE INSTALLATION REQUIREMENTS OF FNSBC 21.28.030(E) ALLOWING THEM TO INSTALL A HYDRONIC HEATER. IN DETERMINING WHETHER TO GRANT THE VARIANCE, THE COMMISSION SHALL CONSIDER THE PROPOSED LOCATION OF THE APPLIANCE, IMPACT ON SURROUNDING NEIGHBORHOOD, EMISSION LEVELS OF THE APPLIANCE, TERRAIN, METEOROLOGICAL CONDITIONS, AND OTHER RELEVANT CONDITIONS THAT MAY RENDER THE OPERATION OF THE APPLIANCE AT THAT LOCATION A NUISANCE OR A HEALTH HAZARD.]

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Section 9. Appendix E- User Fee Schedule of the FY 2017-18 budget is hereby amended to add the following to the Transportation User Fee Schedule:

Air Quality

Permit application fee for SFBA in new construction \$375.00

Section 10. Effective Date. This ordinance shall be effective at 5:00 p.m. of the first Borough business day following its adoption.

PASSED AND APPROVED THIS 19th DAY OF JUNE, 2017.



Kathryn Dodge
Kathryn Dodge
Presiding Officer

ATTEST:

Nanci Ashford-Bingham
Nanci Ashford-Bingham, MMC
Borough Clerk

Yeses: Tacke, Davies, Cooper, Quist, Gray, Lawrence, Dodge
Noes: Roberts, Sattley

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**MEMORANDUM OF UNDERSTANDING
BETWEEN
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND
FAIRBANKS NORTH STAR BOROUGH
FOR
AIR POLLUTION CONTROL**

I. Purpose

The purpose of this Memorandum of Understanding (MOU) is to clarify the joint responsibilities for air pollution control and monitoring within the Fairbanks North Star Borough with an emphasis on fine particulate matter (PM_{2.5}) and carbon monoxide (CO). The Alaska Department of Environmental Conservation (DEC) and the Fairbanks North Star Borough (Borough) have joint responsibility for air pollution control in the Fairbanks North Star Borough. The parties to this MOU recognize that clear lines of responsibility must be established and maintained to maximize the efficient utilization of available resources and to provide the greatest protection to the public's health and safety. It is with this recognition that these two parties hereby enter into this agreement.

II. Major Stationary Sources

DEC will retain responsibility for permitting, inspection, surveillance, and enforcement of all currently permitted facilities under DEC authority, and for any new sources that require DEC permit approval under AS 46.14.

DEC will:

notify the Borough upon receipt of any permit applications or renewals for State Air Quality Permits for stationary sources located within the Borough, to allow sufficient time for Borough comment on such permitting activities;

respond to Borough requests during the Department permit review, for additional information from a permit applicant pursuant to 18 AAC 50 or the State Implementation Plan for Air Quality Control; and

provide information in a reasonable time period to the Borough in response to requests for information on permitted facilities.

The Borough will:

Maintain its registration to DEC's online system for public notice announcements; and

notify DEC when it desires information on a permitted facility, permit

application or renewal.

III. Open Burning

DEC will be responsible for issuing approvals for open burning of materials from Fire Service training, land clearing operations of 40 acres or greater per year and for the open burning of petroleum-based materials or other materials in a way that produces black smoke.

DEC will:

provide the Borough with copies of all open burning approvals issued by DEC for sites within the Borough;

notify applicants to contact the Borough regarding any Borough Codes pertaining to open burning; and

include open burning prohibitions in its air quality advisories if determined to be appropriate to the air pollution event.

The Borough will:

advise DEC and the Division of Forestry if the Borough re-establishes any open burning regulations and permit procedures

IV. Area Source Control Programs

The Borough and DEC recognize that many small stationary pollution emission sources have the potential to collectively impact air quality. These small sources are categorized as area sources by EPA and DEC and may be regulated by local, state, or federal rules, but are not typically permitted by the DEC Air Permit program. They include, but are not limited to, the following types of sources: solid fuel-fired heating devices, commercial and residential space heating, small sources that fall below permitting thresholds, and fugitive dust sources including, but not limited to construction and demolition activities, sand blasting, land clearing and farming activities.

The Borough will:

implement solid fuel-fired heating device repair, retrofit, and replacement programs as resources allow;

implement voluntary programs related to fuel burning that assist in mitigating PM_{2.5} air pollution as resources allow;

Air Pollution Control MOU-DEC/FNSB

conduct public outreach and education on air quality health effects and the mitigation and impacts of air pollution from home heating devices, and other local area sources as resources allow;

take the lead in developing and implementing local control programs to address pollution from area sources consistent with the Borough Assembly's approval/authorization and will notify and consult with DEC regarding local control programs being considered for implementation to insure coordination with any existing state programs or regulations.

DEC will:

implement state regulations designed to mitigate area source impacts in the area;

assist and coordinate with the Borough on public outreach and education activities;

notify and consult with the Borough regarding any proposed state area source programs or regulations that could impact a local control program or activities within the Borough; and

provide technical assistance related to state and federal requirements that could impact development and implementation of a local control program.

The Borough and DEC will:

look for opportunities to share data related to area sources that can further technical efforts in assessing air quality impacts;

jointly determine whether, and when, the two agencies will need to coordinate on implementation of an area source program;

jointly determine the roles and responsibilities for each agency in implementing any coordinated area source program;

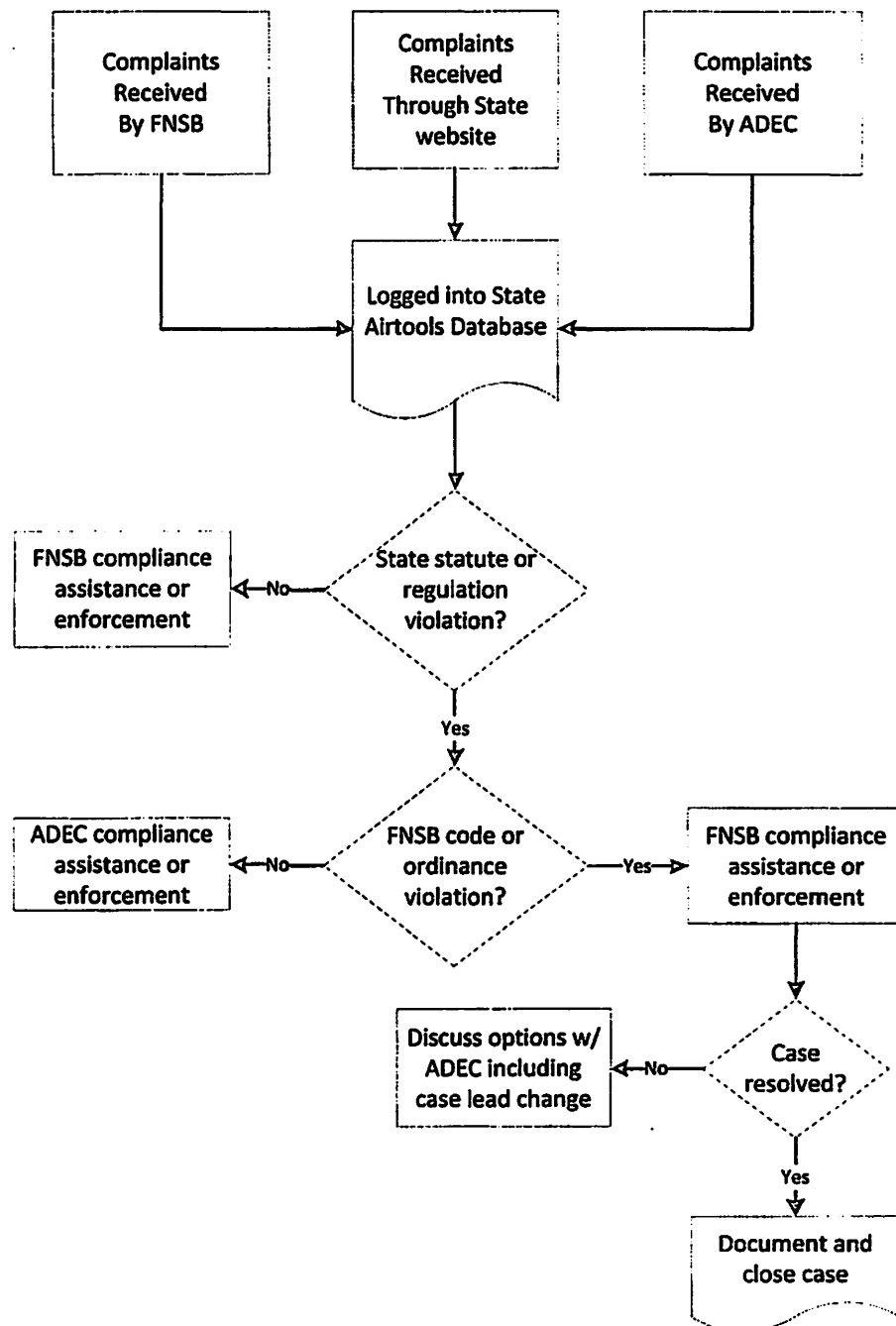
upon agreement by both agencies as to the roles, responsibilities, funding, and any other essential details of a coordinated area source program, work cooperatively to implement the program; and

amend this agreement, as soon as practical, to incorporate the relevant details related to an approved area source program so that clear lines of responsibility are delineated.

V. Complaint Response

DEC and the Borough will collaborate in the response, investigation, compliance

assistance and enforcement stemming from public complaints regarding air pollution within the Borough. The flow chart delineates the course of action and agency lead in assessing appropriate enforcement actions.



Each agency will be responsible for assessing whether an air quality complaint is

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based upon a violation of the Borough Air Quality Ordinances or of the State Air Quality Control Regulations. If the complaint alleges a Borough ordinance violation, then the Borough may respond, investigate and address the violation. If the complaint alleges a violation of both the Borough Ordinances and the State regulations, and the Borough is unable to resolve the violation, then the Borough will discuss options with the State, such as a change in agency lead. Case coordination necessitates close communication between the agencies regarding respective agency approach and goals, based on the agency ordinances or regulations.

For DEC permitted stationary sources, DEC will investigate public Air Quality Complaints. If the Borough is interested in public complaints regarding permitted facilities, the Borough will, in its discretion, contact DEC. DEC agrees to share information regarding the complaint investigation and closure with the Borough.

VI. Ambient Air Monitoring/Air Quality Forecasting

As of July 1, 2016, DEC began maintenance and operation of the federally required air quality monitoring network consisting of three sampling sites in the Fairbanks North Star Borough: The Fairbanks State Office Building (SOB), the multi-pollutant National Core site (NCore) and the North Pole Fire Station #3 (NPF3) sampling site. The SOB and NPF3 sites are used to monitor fine particulate matter (PM_{2.5}) and the Ncore site monitors PM_{2.5} and carbon monoxide, along with a suite of other criteria pollutants and meteorological parameters. The Borough will review monitoring needs with DEC and EPA in consideration of resources available for the purpose of assigning monitoring priorities. The Borough will continue to provide recorded daily ambient air quality forecasts during the period of October 1 through March 31 each winter and will issue air quality advisories and alerts as needed. DEC will provide technical and back-up support for issuing air quality advisories and will assist with posting the Borough advisories to the state advisory website.

Close communication and cooperation between the agencies is necessary to share information on ambient air conditions including any results from any special purpose monitoring efforts to determine the need for issuing an air quality advisory, or declaring an air episode due to anthropogenic or natural events.

DEC will:

operate and maintain the NCore, CO, PM_{2.5} ambient air and meteorological monitoring network as required in accordance with state and federal regulations, guidelines, and the yearly DEC/EPA and Borough Air Programs work plan;

assume payment for utilities and internet access for the monitoring sites on Borough property and previously covered by the Borough, specifically for the

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NCore and North Pole Fire Station #3 monitoring sites;

operate and maintain the PM_{2.5} speciation monitor in accordance with state and federal regulations, guidelines, and the yearly DEC/EPA and Borough Air Programs work plan;

continue to provide technical assistance to the Borough in the areas of ambient air monitoring science, instrument operation, and quality assurance;

send the Borough copies of correspondence and applicable materials associated with air quality monitoring work performed by DEC within the Borough and air monitoring information received from EPA or other sources which may be of interest to the Borough;

notify the Borough as to reporting requirements, due dates, etc.;

review and approve in writing special purpose monitoring site locations using Federal Equivalence Method (FEM) monitors as required and notify EPA of SPM monitoring locations;

provide, or facilitate in-state, technical assistance and training as time and funding allows;

provide filter weighing operations for the analysis of particulate filters;

conduct an annual monitoring network assessment and develop recommendations for any changes which may be necessary in coordination with the Borough and EPA;

coordinate with and assist the Borough on developing air quality advisories and forecasts, provide assistance by posting the Borough's advisories to the State's Air Advisory web site, and assist in the distribution of information to the public and interested parties; and

provide and maintain a data acquisition system including a website for near real-time data access and a database for data storage, review and submission of required monitoring data to EPA.

The Borough will:

house the NCore, North Pole Fire Station #3 air quality monitoring sites, and the Peger Road meteorological tower on Borough property and grant DEC access to these sites year round;

notify DEC regarding any special air monitoring studies using non-regulatory monitors to identify/better define air quality problem areas, as funding and staff allow;

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submit to DEC in writing for approval any desired/required changes to the special purpose monitoring sites monitoring network for any sites using FEM monitors;

assist DEC staff with field monitoring during short-term periods when DEC has staffing problems (as time and funding allows);

continue to implement, as needed, the Borough's emergency episode prevention and response plan for CO;

provide a recorded daily CO forecast during periods of poor air quality, when CO concentrations are of concern. The daily CO forecast will also be provided on the Borough web page and phone system for media and the general public; and

develop and provide PM_{2.5} forecasts to address potential impacts during the summer wildfire season and the winter PM_{2.5} season. A daily forecast will be provided during periods of poor air quality. The PM_{2.5} forecast will be posted on the Borough web page and the Borough's phone system for media and the general public. The Borough will notify DEC of any air quality advisory as soon as possible and provide said advisory to DEC for posting to the State's web site. As part of that forecast, provide a description of the air dispersion (poor, fair, or good) forecast for each day, with weekend and holiday projections made the previous Friday.

VII. Air Quality Planning

The Borough will continue its efforts to maintain the National Ambient Air Quality Standard (NAAQS) for carbon monoxide and work towards meeting attainment for fine particulate matter (PM_{2.5}). This will include the study and possible implementation of reasonable, cost-effective strategies designed to reduce ambient air pollutant concentrations which will allow the Borough to maintain the carbon monoxide standard and attain the PM_{2.5} standard.

DEC will:

provide technical and administrative assistance to the Borough;

- in the area of maintenance of the NAAQS for carbon monoxide; and
- In the area of development of the attainment plan for PM_{2.5}

work with the Borough to develop additional programs that will;

- aid the Borough in maintaining the health based NAAQS for carbon monoxide in the Borough maintenance area, subject to available funding;

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- aid the Borough in attaining the health based NAAQS standard for PM_{2.5} in the Borough nonattainment area, subject to available funding; and
- assist the Borough in its dealings with EPA, particularly in the development of additional strategies to reduce ambient air pollutant levels in the Borough.

The Borough will:

continue its efforts to maintain the NAAQS for carbon monoxide;

update the CO maintenance plan per the Clean Air Act requirements or as needed to address local objectives;

continue its efforts to attain the NAAQS for PM_{2.5};

implement PM_{2.5} strategies to attain the standard that are shown to be necessary, reasonable and cost effective;

assist DEC to study PM_{2.5} concentrations at cold temperatures, and the resultant impact of PM_{2.5} on the prospects for attaining and maintaining the PM_{2.5} standard in the Borough nonattainment area, including potential use of new and innovative programs;

develop emission inventories as needed to support or implement PM_{2.5} SIPs; and

take the lead in collaboratively developing and updating with DEC a PM_{2.5} attainment plan to bring the Borough nonattainment area into attainment with the NAAQS.

VIII. Mobile Source Control Programs

The Borough and DEC recognize that air pollution emissions from motor vehicles and other mobile sources have the potential to collectively impact air quality. Mobile sources are typically regulated by federal and state rules, but local programs can be beneficial in reducing emissions.

The Borough will:

take the lead in developing and implementing local control programs to address pollution from mobile sources and will notify and consult with DEC regarding local control programs being considered for implementation to insure coordination with any existing state programs or regulations; and

implement projects to expand parking lot electrical plug-in infrastructure to

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reduce cold start emissions at Borough owned facilities, when included in the State Implementation Plan as resources allow.

DEC will:

maintain state regulations that allow a vehicle inspection & maintenance program to remain as a CO contingency measure in the Fairbanks CO maintenance plan as required by EPA;

coordinate with the state DOT on any diesel emission reduction projects being implemented to reduce PM_{2.5} emissions from the state fleet as part of the State Implementation Plan;

notify and consult with the Borough regarding any proposed state mobile source programs or regulations that could impact a local control program or activities within the Borough; and

provide technical assistance related to state and federal requirements that could impact development and implementation of a local control program.

The Borough and DEC will:

look for opportunities to share data related to mobile sources that can further technical efforts in assessing air quality impacts;

jointly determine whether, and when, the two agencies will need to coordinate on implementation of any mobile source program;

jointly determine the roles and responsibilities for each agency in implementing any coordinated mobile source program;

upon agreement by both agencies as to the roles, responsibilities, funding, and any other essential details of a coordinated mobile source program, work cooperatively to implement the program; and

amend this agreement, as soon as practical, to incorporate the relevant details related to any approved mobile source program so that clear lines of responsibility are delineated.

IX. Congestion Mitigation & Air Quality (CMAQ) Projects

The Borough will:

Conduct a call for project nominations to address PM_{2.5} in the donut area (the area outside of the metropolitan planning area but within the PM_{2.5} non-attainment area) if funding is available, on behalf of the CMAQ Project Evaluation Board;

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Coordinate with the DEC regarding the development of CMAQ projects to address the PM_{2.5} within the non-attainment area;

Consult with the metropolitan planning organization (MPO) and the State of Alaska DOT&PF Northern Region regarding priority CMAQ projects within the metropolitan planning area.

DEC will:

Coordinate with the Borough regarding the development of CMAQ projects to address PM_{2.5} within the non-attainment area;

Consult with the MPO and the State of Alaska DOT&PF Northern Region regarding priority CMAQ projects within the metropolitan planning area.

DEC and the Borough will:

jointly determine roles and responsibilities for implementing CMAQ projects at the time that the projects are submitted to the metropolitan planning organization or Department of Transportation for funding.

X. Notice/Project Contacts

For purposes of this agreement each agency will identify a project manager who will have overall responsibility for management of the agreement. The project managers may designate and identify in writing to the other agency, other staff with responsibility for implementing specific activities under the agreement.

For purposes of this agreement DEC's project manager is,
Denise Koch, Director, Division of Air Quality

For purposes of this agreement, the Borough's project manager is,
Ron Lovell, Manager, Air Quality Division

All project work plans and approvals shall be submitted through the project managers designated in this section.

Parties agree to notify each other in writing of changes in project manager or activity managers within 10 days of change.

XI. Budgetary

DEC and the Borough shall negotiate any funding agreements for the coming year as an amendment to this MOU. Any annual funding agreements will be negotiated between the DEC Air Quality Director and the FNSB Air Quality Manager. Future

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year appropriations shall be discussed and operational costs agreed upon no later than May 31st of each year. The annual funding agreements shall be documented in writing and make specific reference to this MOU.

This MOU has no financial consideration at this point in time. If future services are needed by either party requiring funding, an amendment to this MOU will be issued.

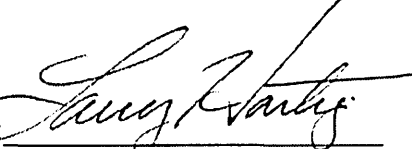
XII. It is mutually agreed:

1. that the Borough and DEC shall employ and maintain staff to carry out the activities necessary to administer the air quality programs outlined in this agreement;
2. that nothing in this agreement shall be construed as obligating DEC or the Borough to the expenditure of funds, or for the future payment of funds; and
3. that amendments to this agreement may be proposed by either party and shall become effective upon approval of both parties.

XIII. Execution/Modification and Duration of Agreement

This agreement will be in effect upon signature by both parties until amended or revoked. The agreement may be terminated upon 90 days' written notice by either party. In addition, all notes, data collected, equipment and any draft reports shall be submitted to DEC within 30 days of termination of this agreement by either party.

Alaska Department of
Environmental Conservation

By: 

Larry Hartig
Commissioner

Date: 10/25/16

Fairbanks North Star Borough

By: 

Karl Kassel
Mayor

Date: 10/14/16

Adopted

December 8, 2017

Air Pollution Control MOU-DEC/FNSB

By: _____


Nikolay Barkov
DEC Finance Officer

Date: _____

10/19/16

FINAL

MEMORANDUM OF AGREEMENT
FOR THE SELECTION AND FUNDING OF PROJECTS
FUNDED BY CMAQ WITHIN THE
FAIRBANKS NONATTAINMENT AREA FOR PM 2.5

Among the Alaska Department of Transportation and Public Facilities (ADOT&PF), the Fairbanks Metropolitan Area Transportation System (FMATS), the Fairbanks North Star Borough (FNSB) and the Alaska Department of Environmental Conservation (ADEC)

I. PURPOSE

A. This Memorandum of Agreement (MOA) is a written agreement among the Fairbanks area MPO (FMATS), state agencies (ADEC, ADOT&PF), and the designated air quality planning agency (Fairbanks North Star Borough, FNSB) describing their respective roles and responsibilities including project selection and CMAQ fund management necessary for air quality related transportation planning.

II. BACKGROUND

A. The U.S. Environmental Protection Agency (EPA) has designated the following townships and ranges of the Fairbanks North Star Borough as a non-attainment area for PM 2.5: -MTRS F001N001 - All sections; -MTRS F001N001E - Sections 2 - 11, 14 - 23, 26 - 34; -MTRS F001N002 - Sections 1 - 5, 8 - 17, 20 - 29, 32 - 36; -MTRS F001S001E - Sections 1, 3 - 30, 32 - 36; -MTRS F001S001W - Sections 1 - 30; -MTRS F001S002E - Sections 6 - 8, 17 - 20, 29 - 36; -MTRS F001S002W - Sections 1 - 5, 8 - 17, 20 - 29, 32 - 33; -MTRS F001S003E - Sections 31 - 32; -MTRS F002N001E - Sections 31 - 35; -MTRS F002N001 - Sections 28, 31 - 36; -MTRS F002N002 - Sections 32 - 33, 36; -MTRS F002S001E - Sections 1 - 2; -MTRS F002S002E - Sections 1 - 17, 21 - 24; -MTRS F002S003E - Sections 5 - 8, 18. A map of the non-attainment area is attached as Appendix A.

B. This PM 2.5 nonattainment designation became effective on December 14, 2009.

C. The above non-attainment area is larger than the FMATS Metropolitan Planning Area (MPA) illustrated in Appendix A as the MPO boundary.

D. 23 CFR 450.104(b) states that if the metropolitan planning area does not include the entire nonattainment or maintenance area, there shall be an agreement among the state department of transportation, state air quality agency, affected local agencies and the metropolitan planning organizations describing the process for cooperative planning and administration of the nonattainment area but within the

the nonattainment area or maintenance area. Under the Clean Air Act (42 U.S.C. 174), there shall be a written agreement between the MPO and the designated air quality planning agency describing their respective roles and responsibilities for air quality related transportation planning.

TERMS

1. ADEC and the FNSB have joint responsibility for air pollution control in the FNSB.
2. ADEC will provide technical assistance in the development of the Fairbanks PM2.5 nonattainment area CMAQ transportation project listing.

MOA Regarding Use of CMAQ Funds in Fairbanks

3. ADEC will participate and be a member on the Fairbanks CMAQ Project Evaluation Board.
- B. ADOT&PF Northern Region (NR)**
1. NR will provide technical assistance in the development of the Fairbanks CMAQ transportation project listing.
 2. NR will prepare and submit the PDAs to fund the selected projects, administer project funds to the appropriate implementing agency, and will assist in the development of the environmental documentation, design, right-of-way, utility and construction of selected projects as required.
 3. NR will participate and be a member on the Fairbanks CMAQ Project Evaluation Board.
 4. NR will issue an annual thirty-day Call for Nominations prior to January 31.
- C. ADOT&PF Division of Program Development (HQ)**
1. HQ will make Federal CMAQ funding available for eligible air quality projects in Fairbanks.
 2. HQ will provide CMAQ funding for the purposes of travel demand modeling and conformity determination for the updates of the plans and programs and to include projects outside of the MPA in the nonattainment area. No local match is currently required. Should local match be required in the future, agreements will be developed through interagency consultation.
 3. HQ will participate and be a member on the Fairbanks CMAQ Project Evaluation Board.
 4. HQ will (subject to available CMAQ funding) include in the STIP all projects agreed to by the Fairbanks CMAQ Project Evaluation Board and submitted by the FNSB.
- D. FMATS**
1. FMATS will work with local agencies in developing and submitting projects to the Fairbanks CMAQ Project Evaluation Board.
 2. FMATS will include all projects approved by the Fairbanks CMAQ Project Evaluation Board and submitted by the FNSB in the informational section of the TIP.
 3. FMATS will participate and be a member on the Fairbanks CMAQ Project Evaluation Board.
- E. FNSB**
1. FNSB and the ADEC have joint responsibility for air pollution control in the FNSB.
 2. FNSB is the lead air quality agency for the Fairbanks area and will determine the priorities for the CMAQ funding provided to the PM2.5 nonattainment area.

MOA Regarding Use of CMAQ Funds in Fairbanks

3. FNSB will provide to the NR a list of PM 2.5 CMAQ transportation projects for the PM2.5 nonattainment area for inclusion in the STIP.
4. FNSB will participate and be a member on the Fairbanks CMAQ Project Evaluation Board.

IV. CMAQ PROJECT EVALUATION BOARD**A. Board membership**

1. The Fairbanks CMAQ Project Evaluation Board (hereinafter Board) will have 7 members representing the following entities: ADEC, FMATS, City of Fairbanks, City of North Pole, FNSB, ADOT&PF (NR) and ADOT&PF (HQ). The Board may select a chair to facilitate evaluation discussions.

B. Project Evaluation Criteria

1. The Board will develop criteria to use in evaluating projects submitted to the Board.
2. The developed criteria will take into account eligible uses of CMAQ funding and consider the projects efficacy in addressing PM2.5 attainment.
3. Evaluation criteria will be provided to agencies for use in developing CMAQ project proposals for submittal to the Board.

C. Project Submission

1. Any member of the Board may submit a project for evaluation and possible inclusion in the STIP.
2. Board Members will notify their respective agencies of the time window for the Call for Nominations.

D. Project Evaluation

1. The Board will use the developed evaluation criteria to score the projects.
2. Projects evaluated will be ranked by their total score.
3. Based upon the project ranking and scheduling, projects will be submitted to the FNSB mayor for approval and then to NR for inclusion in the STIP subject to CMAQ funding available to the Fairbanks PM2.5 nonattainment area.
4. In compiling the proposed list for inclusion in the STIP, if the next ranked project is too costly to be included due to fiscal constraint, the next project below it may be included instead.
5. The Board will meet as necessary to allow FNSB to submit its slate of proposed projects in time for inclusion in a draft STIP or draft STIP amendment. It is anticipated that the Board will meet at a minimum once per year, preferably no later than March 31, to solicit, rank, and recommend projects.

MOA Regarding Use of CMAQ Funds in Fairbanks

E. Conflict Resolution Process

1. Conflicts regarding the submission of a project listing to NR, including the inclusion or absence of a project, will be resolved according to the following process:
 - a) The conflict resolution process is initiated in writing, via email, from any signatory who has a conflict or grievance to all other signatories in the MOA who are affected by the conflict or grievance.
 - b) Within fifteen (15) working days after receipt of such notice, each affected party, along with its director or designee, will meet and determine reasonable measures to resolve the conflict.
 - c) If the conflict has not been resolved at the expiration of sixty (60) days after receipt of the initial notice, the conflict shall be referred to the Office of the Governor for final resolution.
2. All parties understand and agree that the timeline above, while ambitious, may not suffice in getting the matter resolved in time for inclusion in the draft STIP or draft STIP amendment.

V. AGREEMENT TERMS

A. This agreement shall be effective upon signature of all parties and binding until amended or revoked. The anticipated duration of the agreement is tied to the PM 2.5 non-attainment designation and is required until the area has achieved attainment status and maintained such status for a period of at least twenty years. The undersigned agencies may revise or replace this MOA via unanimous written agreement. The agreement may be terminated by a signing agency upon 90 days' written notice to all the signatory parties.

B. An interagency consultation process shall be used for revision of the MOA as necessary.

VI. SIGNATORIES

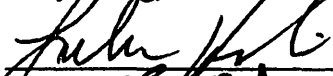
The undersigned hereby agree to comply with the provisions and terms of this MOA as described above.


Steve Titus, P.E., Chair, FMATS

9/15/10
Date


Larry Hartig, Commissioner, ADEC

10/4/10
Date


Mayor Luke Hopkins, Fairbanks North Star Borough

9/15/10
Date


Leo von Scheben, P.E., L.S., M.B.A., Commissioner, ADOT&PF

9/29/10
Date

Abbreviations Guide

ADOT & PF – Alaska Department of Transportation and Public Facilities
ADEC – Alaska Department of Environmental Conservation
CMAQ – Congestion Mitigation/Air Quality Program
EPA – United States Environmental Protection Agency
FHWA – Federal Highway Administration
FMATS – Fairbanks Metropolitan Area Transportation System
FNSB – Fairbanks North Star Borough
FTA – Federal Transit Administration
HQ - Alaska Department of Transportation and Public Facilities, Headquarters
PDA – Project Development Authorization
PM2.5 – Fine Particulate Matter Less Than 2.5 Micrometers
MOA – Memorandum of Agreement
MPA – Metropolitan Planning Area
MPO – Metropolitan Planning Organization
MTP – Metropolitan Transportation Plan
NR - Alaska Department of Transportation and Public Facilities, Northern Region
RLRTP – Regional Long Range Transportation Plan
SIP – State Implementation Plan
STIP – Statewide Transportation Improvement Program
TIP – Transportation Improvement Program
USDOT – United States Department of Transportation