

INTRODUCTION TO MODEL ORDINANCES TO CONTROL WOOD SMOKE FROM SOLID FUEL-FIRED HEATING DEVICES

A. NEED

The Clean Air Act sets National Ambient Air Quality Standards (NAAQS) for a variety of “criteria” pollutants which have significant effects on human health. One criteria pollutant is particulate matter. It is produced by burning fuels, such as burning of fossil fuels in vehicles and by burning wood for heat or pleasure. Peer-reviewed scientific studies show smoke containing particulates is hazardous to human health. It can be a health hazard for children, seniors and persons with impaired circulatory or respiratory systems, and is linked to asthma attacks. Because some particulates are so small, they can work through the lungs and into the heart and brain, causing heart attacks and strokes. Information about health impacts of using outdoor wood boilers can be found at: <http://www.dec.ny.gov/chemical/51986.html> and at http://www.ehhi.org/woodsmoke/health_effects.shtml, “The Health Effects of Wood Smoke”.

B. SOLID FUEL-FIRED HEATING DEVICES

The Minnesota Pollution Control Agency (MPCA) developed these model ordinances to address the problem of particulates generated by outdoor wood boilers (OWBs) which burn wood or other materials to heat homes, domestic water supplies, accessory buildings such as barns for animals, pole barns, garages, swimming pools, and commercial buildings.

Outdoor wood boilers are called by a number of different names, including outdoor wood furnaces, water stoves, and more. The U.S. Environmental Protection Agency calls them hydronic heaters because they transfer the heat to the building using water or a similar liquid. They are a type of “appliance” in Minnesota Mechanical and Fire Codes. They are called solid fuel-fired heating devices (SFHDs) in many ordinances, so MPCA’s model ordinances call them SFHDs.

The use of SFHDs often results in smoke being emitted on a continual basis. They are significant fire risks when they are improperly installed, lack safety equipment, or are near other buildings.

C. GOAL OF THE MODEL ORDINANCES

MPCA collaborated with local government representatives to prepare two draft model ordinances to protect the public from the health and safety hazards posed by SFHDs and to protect neighboring properties from the adverse effects of wood smoke. One ordinance is for zoning, the other for nuisances. **Please note these are voluntary ordinances; the MPCA is not proposing a statewide regulation.**

These model ordinances serve to educate citizens and communities affected by wood smoke, and to assist property owners and managers in maintaining compliance. Based on a review of over 60 ordinances from Minnesota cities and townships, these model ordinances provide options for small and large, rural and urban communities located in different parts of the State.

D. HOW THE MODEL ORDINANCES WERE DEVELOPED

The original impetus for developing a model ordinance came from two main sources. The first was the May 2013 report of the Clean Air Dialogues (CAD), comprised of air quality leaders from businesses, local governments and nonprofit organizations. CAD recommended that a model ordinance be developed to address pollution from hydronic heaters (http://environmental-initiative.org/images/files/MnCAD/*MnCADFinalReport24Apr13.pdf). Secondly, MPCA received complaints about wood smoke pollution resulting from hydronic heaters.

The number of SFHDs exceeds 20,000 in the state. Because of the number of units and their location in communities throughout the state, the MPCA is choosing to partner with local governments to address the problem. The MPCA surveyed existing ordinances/codes to understand how air pollution issues and SFHDs are addressed by local governments. These model ordinances are the result. The MPCA welcomes comments on the models and looks forward to working with you to make them as useful as possible.

The zoning model ordinance provides the MPCA's recommended setback and stack height and design requirements for SFHDs. The stack height requirements should reduce, but may not eliminate, the chance of nuisance conditions. Table 1 in the Supplementary Information is based on example conditions evaluated with standard air dispersion modeling methods. The modeling evaluation focused on PM_{2.5} because relatively more emissions data is available for PM and because PM_{2.5} was considered the criteria air pollutant more likely than others to exceed the NAAQS standard. Other wood smoke pollutants and the associated odors were not evaluated. Therefore, the setback and stack height guidance will reduce the chance of air quality concerns on neighboring properties, but it does not eliminate the chance of nuisance conditions. This cannot guarantee that the amount of PM_{2.5} in the air would never exceed air quality standards.

E. CUSTOMIZE THE MODEL ORDINANCES TO YOUR COMMUNITY'S NEEDS

The MPCA recognizes that communities differ in authorities, staff size, topography, density, and location. The MPCA survey of local ordinances showed a broad range of approaches to SFHDs. Some communities ban them entirely, some confer nonconformity zoning code status on currently installed SFHDs, and some prohibit new installations. The approach in the model ordinances is to encourage a community to choose the methods that work best for that community. The options presented in these two model ordinances allow installation and operation of new SFHDs and allow existing SFHDs to continue operation, if requirements are met. The two ordinances, which deal with nuisance operation and zoning, are designed to work together and have common definitions and identical enforcement mechanisms and options. **They will not work as effectively to control problems from SFHDs, and emissions may exceed federal air quality standards for fine particulates, if only one ordinance is approved.**

F. U.S. Environmental Protection Agency (EPA) certifications are required for new SFHD, as discussed in paragraph G. below. Other provisions offer model language for: stack height and setback requirements; performance and operating standards and safely storing fuel and ashes. Enforcement options are also included. Most communities surveyed provide for a misdemeanor as the penalty of last resort, but the model ordinances also offer noncriminal enforcement options. These ordinances also recognize the work of local and community health boards as an additional enforcement option.

G. IMPACT OF EPA CERTIFICATION REQUIREMENTS

EPA's 2015 wood heater New Source Performance Standards (NSPS) for newly manufactured, imported, sold and installed residential wood-burning heaters went into effect starting March 15, 2015. This rule does not affect wood heaters that were already in use in homes. It covers indoor and outdoor wood-burning central heaters such as hydronic heaters and forced-air furnaces and other wood-heating appliances. The rule established specific compliance dates and emission limits for each type of appliance. SFHDs are a type of hydronic heater. New SFHDs could not be manufactured as of May 15, 2015, or sold after December 31, 2015, unless they were EPA-certified to meet the Step 1 (2015) emission limits. They cannot be manufactured, sold or installed starting May 15, 2020 unless they are EPA-certified to the Step 2 (2020) emission limits. New SFHDs must have a permanent label attached, which certifies the unit complies with the applicable NSPS emission limits. The permanent label must also state whether the model was certified to the 2015 or the more stringent 2020 emission limits. Models that meet the 2020 emission standards ahead of time can be advertised with an EPA-hangtag to highlight the fact they were EPA-certified to the 2020 standards ahead of schedule.

These model ordinances incorporate by reference the federal rules. This means that if a community adopts the model ordinances now, future changes at the federal level are automatically incorporated in the local code. MPCA's website provides information about the EPA NSPS requirements for wood heaters. MPCA's Wood Smoke Coordinator can be contacted for information about the NSPS and assistance with the model ordinances.

H. MODEL ORDINANCE DISCLAIMER (EXAMPLE)

The intent of these model ordinances was to produce samples that give local governments a great deal of operational flexibility to prevent nuisance conditions and protect public health. The model ordinances are provided as examples for review and reference purposes. None of these documents or the information contained within them constitutes a legal document or legal advice. For the model ordinance to be valid and legally enforceable it must be modified, reviewed, and approved by the appropriate local government board or council after consultation with the local government attorney or other legal counsel. All applicable state and local laws must be considered when implementing any or all provisions of ordinance.