

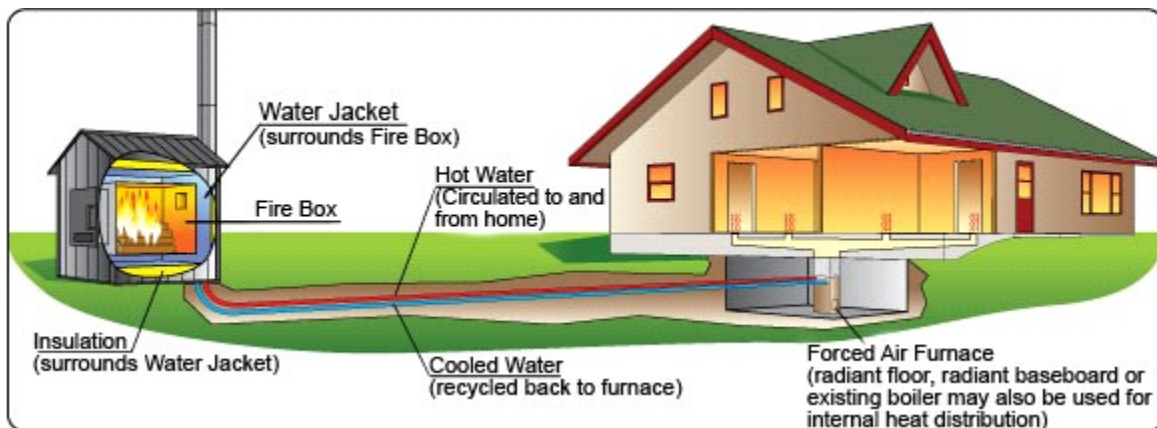
# PENNSYLVANIA DEPARTMENT of ENVIRONMENTAL PROTECTION

## MODEL ORDINANCE FOR OUTDOOR WOOD-FIRED BOILERS

### Introduction

The emissions, health effects and the nuisance factor created by the use of outdoor wood-fired boilers are a major concern to the Pennsylvania Department of Environmental Protection (Department).

Outdoor wood-fired boilers, also referred to as outdoor wood-fired furnaces, outdoor wood-burning appliances, or outdoor hydronic heaters, are free-standing fuel-burning devices designed: (1) to burn clean wood or other approved solid fuels; (2) specifically for outdoor installation or installation in structures not normally intended for habitation by humans or domestic animals (e.g., garages); and (3) to heat building space and/or water via distribution, typically through pipes, of a fluid heated in the device, typically water or a water/antifreeze mixture. They resemble a small shed or mini-barn with a short smokestack on top. Outdoor wood-fired boilers are being used to heat homes and buildings, produce domestic hot water, heat swimming pools or hot tubs, and provide heat to agricultural operations such as greenhouses and dairies.



Source: Hearth, Patio and Barbeque Association (from United States Environmental Protection Agency and New Hampshire website)

Outdoor wood-fired boilers are much larger and differ in design, operation and emissions produced from the smaller indoor wood stoves, pellet stoves, fireplaces and barbecue pits. Following are some of the problems specific to the use of outdoor wood-fired boilers:

- Most outdoor wood-fired boilers employ a very primitive combustion technology that allows the unit to operate in “idle” mode for long periods of time. This type of operation causes very poor combustion and continuous, heavy smoke.
- Outdoor wood-fired boilers are typically equipped with a very short smoke stack. The short stacks and reduced draft of outdoor wood-fired boilers fail to disperse emissions adequately and can cause smoky conditions at or near ground level.
- Outdoor wood-fired boilers are used to heat houses, shops, domestic hot water, swimming pools, greenhouses, driveways and spas. This means that smoke may be emitted year round, even in the summer when owners and neighbors want to enjoy the outdoors.
- Because outdoor wood-fired boilers are designed with a large firebox and are located outdoors, some owners use them to burn household garbage, tires and other wastes, including hazardous

waste. Burning these other substances in an outdoor wood-fired boiler produces additional toxic and hazardous air pollutants.

While they may seem harmless, the use of outdoor wood-fired boilers generates air pollution, which affects human health and is the source of many odor and nuisance complaints. The Northeast States for Coordinated Air Use Management (NESCAUM) has conducted stack tests on outdoor wood-fired boilers. Based on the test results, the average fine particulate emissions from one outdoor wood-fired boiler are equivalent to the emissions from 205 oil furnaces, or as many as 8,000 natural gas furnaces. Cumulatively, the smallest outdoor wood-fired boiler has the potential to emit almost one and one-half tons of particulate matter every year. Based on sales estimates, outdoor wood-fired boilers could emit over 233,000 tons of fine particulate matter nationwide in 2005. Considering sales trends, NESCAUM estimates that there could be 500,000 outdoor wood-fired boilers in place nationwide by 2010. Based on that estimate, emissions from outdoor wood-fired boilers would reach 873,750 tons of fine particulate matter nationwide per year by 2010.<sup>1</sup> Furthermore, NESCAUM estimates that over 155,000 outdoor wood-fires boilers have been sold nationwide since 1990. Of the estimated 155,000 outdoor wood-fired boilers sold nationwide, 95% have been sold in nineteen states. Pennsylvania is listed as one of those nineteen states.<sup>2</sup>

Particulate matter (PM) emissions cause a host of health problems ranging from short-term health harms such as eye, nose, throat, and lung irritation, coughing and shortness of breath to long-term health problems including asthma, bronchitis, emphysema, pneumonia, heart disease and increased cancer risk. Other uncontrolled emissions from outdoor wood-fired boilers include carbon monoxide, hydrogen chloride, hydrogen cyanide, benzene, styrene, formaldehyde, arsenic, lead, chromium, dioxins, furans, PCBs and polycyclic aromatic hydrocarbons.

Unlike indoor wood stoves that are regulated by the United States Environmental Protection Agency (EPA), no federal standards exist for outdoor wood-fired boilers and the majority of them are not equipped with pollution controls. There is a federal voluntary program that encourages manufacturers of outdoor wood-fired boilers to improve air quality through developing and distributing cleaner, more efficient outdoor wood-fired boilers. To qualify for this program, manufacturers must meet EPA's Program Phase 1 air emissions level of 0.6 pounds of fine particulates per million Btu heat input, as tested by an independent accredited laboratory. Qualifying outdoor wood-fired boilers are identified by an orange hang tag. The hang tag signifies that the model is cleaner and pollutes less than those models that have not met the Phase 1 emissions level. However, when the outdoor wood-fired boiler Phase 1 emission level is converted to the same measurement units used in the indoor woodstove NSPS (New Source Performance Standards), the Phase 1 emission level can be 4 to 10 times dirtier than the woodstove NSPS emission standard.<sup>3</sup>

The Air Pollution Control Act (APCA) limits the Department's authority to regulate household

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<sup>1</sup> NESCAUM. Northeast States for Coordinated Air Use Management. Assessment of Outdoor Wood-fired Boilers. P. viii. March 2006 (revised June 2006); available at: <http://www.nescaum.org/documents/assessment-of-outdoor-wood-fired-boilers>.

<sup>2</sup> NESCAUM. Northeast States for Coordinated Air Use Management. Assessment of Outdoor Wood-fired Boilers. P. 3-2. March 2006 (revised June 2006); available at: <http://www.nescaum.org/documents/assessment-of-outdoor-wood-fired-boilers>.

<sup>3</sup> United States Environmental Protection Agency, Frequently Asked Questions EPA's Program to reduce Pollution from Outdoor Wood-fired Hydronic Heaters (February 2007), available at: [http://www.epa.gov/owhh/pdfs/faqs\\_10070214.pdf](http://www.epa.gov/owhh/pdfs/faqs_10070214.pdf)

heating sources. Specifically, Section 6.1 of the APCA, 35 P.S. 4006.1, states that no written approval (plan approval or permit) shall be necessary for any such source, equipment or device used solely for the supplying of heat or hot water to one structure intended as a one-family or two-family dwelling. Consequently, the Department does not have regulations that specifically regulate outdoor wood boilers. Where home heating decisions are concerned, the Department believes that local municipalities can respond to and resolve these issues more effectively and swiftly than a state agency. Section 12 of the Air Pollution Control Act, 35 P.S. 4012, provides that local government bodies are authorized to enact ordinances that regulate, among other things, the selection, operation and location of outdoor wood-fired boilers. Many local governments have done so.

This document contains a model ordinance that was developed by the Department to assist municipalities in enacting local ordinances to regulate outdoor wood-fired boilers. It is meant to be advisory only and is not intended to be relied upon as legal advice. A municipality is not required to adopt this or any other ordinance. It is intended that a municipality “pick and choose” from among the various suggested provisions to meet its particular needs. The only constraint is that a municipality may not enact an ordinance that is less stringent than state or federal law. Municipalities are urged to seek legal advice before enacting such ordinances.

SUMMARY OF PADEP OUTDOOR WOOD-FIRED BOILER  
MODEL ORDINANCE PROVISIONS

SECTION I. Title

Title of ordinance.

SECTION II. Authority

Explains by what authority the ordinance is enacted.

SECTION III. Applicability

Explains to whom and what the ordinance applies.

SECTION IV. Purpose and Scope

Explains why the ordinance is enacted.

SECTION V. Definitions

Provides the definitions for certain terms that are used in the ordinance.

SECTION VI. Regulations

States that either outdoor wood-fired boilers will be banned or that outdoor wood-fired boilers will be allowed only if they meet certain listed provisions.

SECTION VII. Enforcement Orders

Explains who has the power to enforce the ordinance. Discusses the different types of enforcement orders which are available to the municipality and how these orders are implemented.

SECTION VIII. Responsibility of Owners and Operators

Explains the scope of the enforcing agent's authority with respect to owners and operators of an illegally operating outdoor wood-fired boiler. States how a municipality may collect or recover the costs involved in enforcing an order.

SECTION IX. Criminal Penalties

Explains what the criminal penalties are for any person who violates any provision of this ordinance or any order of the municipality issued pursuant to this ordinance.

SECTION X. Civil Penalties

Explains the procedures by which a municipality may assess a civil penalty for the violation of a provision of this ordinance or any order issued pursuant to this ordinance.

SECTION XI. Unlawful Conduct

Explains what constitutes unlawful conduct.

SECTION XII. Public Nuisances

Explains what constitutes a public nuisance, when it must be abated, how the municipality may recover the expenses of abatement, and who is liable for the costs of abatement.

SECTION XIII. Repealer

Statement repealing any previous ordinance and any other ordinance which conflicts, in whole or in part, with this ordinance.

SECTION XIV. Validity

Statement asserting the validity of this ordinance and that the remainder of the ordinance will not be affected even if other portions of the ordinance are declared unconstitutional or invalid

SECTION XV. Effective Date

Statement of when the ordinance takes effect.

PADEP MODEL AIR POLLUTION CONTROL ORDINANCE  
OUTDOOR WOOD-FIRED BOILER

An ordinance of [name of municipality], [name of county] County, Commonwealth of Pennsylvania, for the prevention and control of air pollution from the use of outdoor wood-fired boilers, also known as outdoor wood-fired furnaces, outdoor wood-burning appliances, or outdoor hydronic heaters; defining certain terms used herein; providing for regulations, exceptions, enforcement orders, responsibility of owners and operators, penalties, unlawful conduct, public nuisances, repealing previous ordinance [number], and validity.

SECTION I. Title

This ordinance shall be known and may be cited as the [municipality] Outdoor Wood-Fired Boiler Ordinance of [year].

SECTION II. Authority

The [Council-Board] of the [municipality], under, and by virtue of and pursuant to the authority granted by [enabling authority/code] do hereby enact and ordain this ordinance.

SECTION III. Applicability

This ordinance applies to the installation and use of all outdoor wood-fired boilers within [municipality].

III.1. This ordinance does not apply to grilling or cooking using charcoal, wood, propane or natural gas in cooking or grilling appliances.

III.2. This ordinance does not apply to burning in a stove, furnace, fireplace or other heating device within a building used for human or animal habitation.

III.3. This ordinance does not apply to the use of propane, acetylene, natural gas, gasoline or kerosene in a device intended for heating, construction or maintenance activities.

SECTION IV. Purpose and Scope

Whereas the [Council-Board] of [municipality] has determined that air pollution from outdoor wood-fired boilers may be detrimental to the health, comfort, living conditions, welfare, and safety of the citizens of [municipality], it is hereby declared to be the policy of [municipality] to safeguard the citizens of [municipality] from such air pollution.

SECTION V. Definitions

The following words, terms, and phrases, when used in this ordinance, unless the context clearly indicates otherwise, shall have the following meanings ascribed to them:

*Chimney* – Any vertical structure enclosing a flue or flues that carry off smoke or exhaust from a furnace, especially that part of a structure extending above a roof.

*Clean wood* – Natural wood that has no paint, stains, or other types of coatings, and natural wood that has not been treated with, including but not limited to, copper chromium arsenate, creosote, or pentachlorophenol.

*Council-Board* – Borough Council, Township Board of Supervisors.

*Municipality* – A city, incorporated town, township, borough, county, municipal authority, or other public body created under State law having jurisdiction over the disposal of sewage, industrial wastes, or other wastes.

*Outdoor wood-fired boiler* – A fuel-burning device designed: (1) to burn clean wood or other approved solid fuels; (2) by the manufacturer specifically for outdoor installation or installation in structures not normally intended for habitation by humans or domestic animals (e.g., garages); and (3) to heat building space and/or water via distribution, typically through pipes, of a fluid heated in the device, typically water or a water/antifreeze mixture. Outdoor wood-fired boilers are also known as outdoor wood-fired furnaces, outdoor wood-burning appliances, or outdoor hydronic heaters, etc.

*Person* – Any individual, public or private corporation for profit or not for profit, association, partnership, firm, trust, estate, department, board, bureau or agency of the Commonwealth or the Federal Government, political subdivision, municipality, district, authority, or any other legal entity whatsoever which is recognized by law as the subject of rights and duties.

*Responsible Official* – Person designated by the municipality to be responsible for the administration and enforcement of this ordinance.

*Yard waste* – Leaves, grass clippings, garden residue, tree trimmings, chipped shrubbery, and other vegetative material. This definition could be revised slightly to exclude tree trimmings, if municipality will allow this to be burned as clean wood.

## SECTION VI. Regulations

If Alternatives 1 or 2 are selected, skip to Section VII. Enforcement Orders

**(Alternative 1)** After [effective date] no person shall install, use, or maintain an outdoor wood-fired boiler in [municipality];

**or**

**(Alternative 2)** After [effective date] no person shall install, use, or maintain an outdoor wood-fired boiler in [municipality] until federal or state regulations pertaining to the manufacturing of outdoor wood-fired boilers are promulgated and adopted by the [municipality];

**or**

**(Alternative 3)** After [effective date] an outdoor wood-fired boiler may be installed or used in [municipality] only in accordance with all of the following provisions [Choose the provisions that apply]:

VI.1. The outdoor wood-fired boiler shall be installed and used only in an area zoned for agricultural use. Note: Omit this section or insert other zoning areas in addition to agricultural as

appropriate for the needs of your municipality. If this provision is not omitted, include provisions that they need to follow.

VI.2. The outdoor wood-fired boiler shall not be used to burn any of the following prohibited materials:

- Any material that does not meet the definition of clean wood.
- Furniture
- Garbage
- Tires
- Lawn clippings or yard waste
- Material containing plastic
- Material containing rubber
- Waste petroleum products
- Paints and paint thinners
- Chemicals
- Any hazardous waste
- Coal
- Glossy colored paper
- Construction and demolition debris
- Plywood
- Particleboard
- Salt water driftwood
- Manure
- Animal carcasses
- Asphalt products

Note to the municipality: This list is for illustration purposes, but can be revised by adding or deleting prohibited materials as appropriate.

VI.3. The outdoor wood-fired boiler shall be located at least [insert a distance appropriate for the municipality] from the nearest building that is not on the same property as the outdoor wood-fired boiler and/or the outdoor wood-fired boiler shall be located [insert a distance appropriate for the municipality] from the property line.

Note: Choose a minimum distance such as 300 feet, 500 feet or other greater or lesser distance as appropriate for your municipality. For reasons mentioned in the introduction, a substantial minimum distance is recommended, even if it prevents a resident from installing or using a unit.

VI.4. The outdoor wood-fired boiler shall have a permanent chimney that extends at least [insert a minimum height – a height of 15 feet or greater is recommended]. If there are any residences within [insert a specified distance – a distance of 500 feet or greater is recommended], the chimney shall also extend at least [insert a measurement – at least 5 feet is recommended] above the height of the roofs of all such residences.

VI.5. The owner or operator of the outdoor wood-fired boiler shall obtain a permit from the Responsible Official. If a permit will not be required for outdoor wood-fired boilers, omit this paragraph entirely. If a permit will be required only if there are nearby neighbors, insert an appropriate distance from the property line or from the nearest building which is not on the same property. If a permit is

required, add a Section to this ordinance that addresses the following:

1. Who must obtain a permit and when (ie., prior to installation)
2. Cost of permit, if any
3. Penalty for not obtaining permit
4. Ability of [municipality] to suspend permits if weather conditions warrant
5. Statement that violation of permit conditions is a violation of this ordinance.
6. Statement that any violation of the ordinance or permit conditions shall void the permit.

VI.6. The use of the outdoor wood-fired boiler shall be prohibited between [insert a time frame such as June 1 and September 1].

VI.7. The outdoor wood-fired boiler shall have an orange hang tag that signifies that it meets the EPA's standards for Phase 1 air emission levels of 0.60 pounds of fine particulates per million Btu heat input and qualifies for the EPA's voluntary program.

## SECTION VII. Enforcement Orders

(1) The [municipality] [supervisor, codes officer, zoning officer, or any other duly authorized agent] shall have the power and duty to enforce the provisions of this ordinance.

(2) The [municipality] may issue such orders as are necessary to aid in the enforcement of the provisions of this ordinance. These orders shall include, but shall not be limited to: orders requiring persons to cease unlawful use of outdoor wood-fired boilers, which is in violation of any provision of this ordinance; orders to take corrective action or to abate a public nuisance; or orders requiring production of information. Such an order may be issued if the [municipality] finds that any person is in violation of any provision of this ordinance.

(3) The [municipality] may, in its order, require compliance with this ordinance.

(4) An order issued under this section shall take effect upon notice, unless the order specifies otherwise. An appeal to the [quasi judicial body] of the [municipality's] order shall not act as a supersedeas, provided, however, that, upon application and for cause shown, the [quasi judicial body] may issue such a supersedeas under rules established by the [quasi judicial body].

(5) The authority of the [municipality] to issue an order under this section is in addition to any remedy or penalty that may be imposed pursuant to this ordinance. The failure to comply with any such order is hereby declared to be a public nuisance.

## SECTION VIII. Responsibility of Owners and Operators

(1) Whenever the [Responsible Official] finds that illegal operation of an outdoor wood-fired boiler is occurring in the [municipality], in contravention of the requirements of Section VI above, the [Responsible Official] may order the owner or operator to take corrective action in a manner satisfactory to the [municipality], or the [Responsible Official] may order the owner or operator to allow access to the land by the [Responsible Official] or a third party to take such action.

(2) For purposes of collecting or recovering the costs involved in taking corrective action or pursuing a cost recovery action pursuant to an order or recovering the cost of litigation, oversight, monitoring, sampling, testing, and investigation related to a corrective action, the [municipality] may collect the amount in the same manner as civil penalties are assessed and collected following the process for assessment and collection of a civil penalty contained in Section X of this ordinance.

#### SECTION IX. Criminal Penalties

Any person who violates any provision of this ordinance or any order of the [municipality] issued pursuant to this ordinance commits a summary offense and shall, upon conviction, be sentenced to pay a fine of not less than one hundred dollars (\$100.00) nor more than two thousand five hundred dollars (\$2,500.00) for each separate offense and, in default of the payment of such fine, may be sentenced to imprisonment for ninety (90) days for each separate offense. Employees of the [municipality] authorized to conduct inspections or investigations are hereby declared to be law enforcement officers authorized to issue or file citations for summary violations under this ordinance, and the [municipal] Counsel is hereby authorized to prosecute these offenses. For purposes of this section, a summary offense may be prosecuted before any district justice in this [municipality]. There is no accelerated rehabilitative disposition authorized for a summary offense.

#### SECTION X. Civil Penalties

(1) In addition to proceeding under any other remedy available at law or in equity for a violation of a provision of this ordinance or any order issued pursuant to this ordinance, the [municipality] may assess a civil penalty for the violation. The penalty may be assessed whether or not the violation was willful. The civil penalty so assessed shall not exceed twenty-five thousand dollars (\$25,000.00) per day for each violation. In determining the amount of the penalty, the [municipality] shall consider the willfulness of the violation; damage to air, soil, water, or other natural resources of the [municipality] or their uses; financial benefit to the person in consequence of the violation; deterrence of future violations; cost to the [municipality]; the size of the source or facility; the compliance history of the source; the severity and duration of the violation; degree of cooperation in resolving the violation; the speed with which compliance is ultimately achieved; whether the violation was voluntarily reported; other factors unique to the owners or operators of the source or facility; and other relevant factors.

(2) When the [municipality] proposes to assess a civil penalty, it shall inform the person of the proposed amount of the penalty. The person charged with the penalty shall then have thirty (30) days to pay the proposed penalty in full; or if the person wishes to contest the amount of the penalty or the fact of the violation to the extent not already established, the person shall forward the proposed amount of the penalty to the [quasi judicial body] within the thirty (30) day period for placement in an escrow account with the State Treasurer or any Commonwealth bank, or post an appeal bond to the [quasi judicial body] within thirty (30) days in the amount of the proposed penalty, provided that such bond is executed by a surety licensed to do business in the Commonwealth and is satisfactory to the [municipality]. If, through administrative or final judicial review of the proposed penalty, it is determined that no violation occurred or that the amount of the penalty shall be reduced, the [quasi judicial body] shall, within thirty (30) days, remit the appropriate amount to the person with any interest accumulated by the escrow deposit. Failure to forward the money or the appeal bond at the time of the appeal shall result in a waiver of all legal rights to contest the violation or the amount of the civil

penalty unless the appellant alleges financial inability to prepay the penalty or to post the appeal bond. The [quasi judicial body] shall conduct a hearing to consider the appellant's alleged inability to pay within thirty (30) days of the date of the appeal. The [quasi judicial body] may waive the requirement to prepay the civil penalty or to post an appeal bond if the appellant demonstrates and the [quasi judicial body] finds that the appellant is financially unable to pay. The [quasi judicial body] shall issue an order within thirty (30) days of the date of the hearing to consider the appellant's alleged inability to pay. The amount assessed after administrative hearing or after waiver of administrative hearing shall be payable to the [municipality]

and shall be collectible in any manner provided by law for the collection of debts, including the collection of interest on the penalty amount computed in accordance with section 6621(a)(2) of the Internal Revenue Code of 1986 (Public Law 99-514, 26 U.S.C. § 1 et seq.) from the date of assessment of the penalty. If any person liable to pay any such penalty neglects or refuses to pay the same after demand, the amount, together with interest and any costs that may accrue, shall constitute a debt of such person, as may be appropriate, to the [municipality]. The debt shall constitute a lien on all property owned by said person when a notice of lien incorporating a description of the property of the person subject to the action is duly filed with the prothonotary of the court of common pleas where the property is located. The prothonotary shall promptly enter upon the civil judgment or order docket, at no cost to the [municipality], the name and address of the person, as may be appropriate, and the amount of the lien as set forth in the notice of lien. Upon entry by the prothonotary, the lien shall attach to the revenues and all real and personal property of the person, whether or not the person is solvent. The notice of lien, filed pursuant to this Section, which affects the property of the person shall create a lien with priority over all subsequent claims or liens which are filed against the person, but it shall not affect any valid

lien, right, or interest in the property filed in accordance with established procedure prior to the filing of a notice of lien under this section.

[Note to the municipality: The penalties and remedies available to the municipality are those set forth in the Air Pollution Control Act (APCA), as amended, 35 P.S. 4012, Sections 9, 9.1, and 12(g). Each municipality may tailor the penalty provisions to reflect the municipality's preferred penalty policy, within the legal limits of the APCA.]

## SECTION XI. Unlawful Conduct

It shall be unlawful to fail to comply with or to cause or assist in the violation of any of the provisions of this ordinance or to fail to comply with any order or other requirement of the [municipality]; or to cause a public nuisance; or to hinder, obstruct, prevent, or interfere with the [municipality] or its personnel in their performance of any duty hereunder, including denying the [Responsible Official] access to the source or facility.

## SECTION XII. Public Nuisances

A violation of this ordinance or of any order issued by the [municipality] under this ordinance shall constitute a public nuisance. The [municipality] shall have the authority to order any person causing a public nuisance to abate the public nuisance. In addition, when abating a public nuisance, the [municipality] may recover the expenses of abatement following the process for assessment and collection of a civil penalty contained in Section X. Whenever the nuisance is maintained or continued

contrary to this ordinance or any order issued pursuant to this ordinance, the nuisance may be abatable in the manner provided by this ordinance. Any person who causes the public nuisance shall be liable for the cost of abatement.

### SECTION XIII. Repealer

Ordinance [no.] previously enacted is hereby repealed. All other ordinances or parts thereof which are in conflict with this ordinance are hereby repealed.

### SECTION XIV. Validity

The provisions of this ordinance are severable, and if any section, clause, sentence, part, or provision thereof shall be held illegal, invalid, or unconstitutional by any court of competent jurisdiction, such decision of the court shall not affect or impair the remaining sections, clauses, sentences, parts, or provisions of this ordinance. It is hereby declared to be the intent of the [Council-Board] that this ordinance would have been adopted if such illegal, invalid, or unconstitutional section, clause, sentence, part, or provision had not been included herein.

### SECTION XV. Effective Date

This ordinance shall become effective on the [no.] day of [month] [year].