

## Memorandum

Date: May 18, 2009

To: Linn County Board of Health

From: James Hodina, Air Quality Supervisor

Subject: Draft Ordinance for Outdoor Wood Boilers

---

Please find under this transmittal a proposed revision to the Air Quality Section of the Linn County Code of Ordinance. This proposal has been significantly updated to reflect the public input received and the supporting analysis prepared by the Air Quality Division. This amendment will be on the Board of Health Agenda for May 27. If the Board of Health approves this proposal, then it will be brought to the Board of Supervisor for review and vote, which includes a process of three public readings.

The Linn County Code of Ordinance for Air Quality Control is Chapter 10. While some new subsections to Chapter 10 are proposed, some existing sections are also slightly modified. As such only those modified paragraphs of existing sections are shown in this enclosure. The existing complete Air Quality Ordinance is approximately 90 pages and therefore not recreated in its entirety within this amendment. The complete text of the code is on our website at <http://www.linncleanair.org/Content/Regulations.aspx>.

In general, the proposal provides an exemption for all installed outdoor wood boilers that do not meet the current regulatory standard of 0.6 lb/MMBtu providing the owner takes a limit on the amount of wood that they can burn each heating season and that they either meet a set back distance OR raise their stack. This exemption is retroactive from the date of approval. Future installations will be required to meet the existing emission standard of 0.6 lb/MMBtu. Several manufacturers currently sell units that can meet this performance standard. Under this framework, two classifications have been made: one for boilers on residential properties and another for boilers on rural properties. Each classification has the following requirements.

**Table 1**  
**Wood Heater Requirements for Units that Do Not Meet 0.6 lb/MMBtu Standard**

	<b>Residential</b>	<b>Non-Residential</b>
Zoning	Incorporated properties or properties zoned Urban Service Residential (USR), Rural Residential 1, 2, or 3 (RR1, RR2, RR3)	All other property zoning designations including agricultural (AG)
Setback	200 feet to the near residential property line unless the owner chooses to meet the stack height requirement below.	None
Stack Height	If less than 200 feet to another residential property, then 2 feet above the peak of any neighboring residential building within 300 feet of the boiler but no less than 15 feet above ground.	15 feet, but only if the boiler is within 500 feet of a neighboring occupied structure
Fuel Limit	18,000 lbs of wood (5 cords of wood) and operate only from September 15 to May 15	54,000 lbs of wood (15 cords of wood)

Because property sizes are smaller in residential areas and residential density is greater, more stringent setback and stack height requirements have been proposed for these areas. The fuel limits provide an enforceable limit that allows Public Health to use lower emission rates for the air dispersion modeling. This is necessary to minimize setback requirements while demonstrating to DNR and EPA that the exemption for existing boilers will not degrade air quality beyond the 35  $\mu\text{g}/\text{m}^3$  24 hour national ambient air quality standard. Public input including those from manufacturers has been used to determine a limit that will allow for an adequate heating with an ample margin of safety.

The exemption from the 0.6 lb/MMBtu is only for currently installed units less than 500,000 Btu/hr. We received no comments that boilers larger than 500,000 Btu/hr were being used for residential applications. Anything larger will be handled as a commercial boiler subject to existing permitting and compliance procedures for business and industry. The Air Quality Division received comments from only three manufacturers. We received no adverse comments to the 0.6 lb/MMBtu standard for future installations. However, this does not mean that all manufacturers selling in Iowa have units that can meet this limit. While not identical, the 0.6 lb/MMBtu limit is roughly equivalent to the EPA Voluntary Hydronic Heater Program for Phase 1 Qualified Units.

The terms “outdoor wood boiler” and “outdoor hydronic heater” have been dropped from past drafts and instead the term “residential heaters” is adopted which is more consistent with the current code language that uses the term, “fuel-burning equipment.” The current code 0.6 lb/MMBtu requirement applies to all heaters with a heat exchanger, which includes boilers and furnaces as well. Therefore, the proposed exemptions, limits, and permitting will also apply to all wood heaters, not just boilers. This does not include direct fired units such as wood stoves or fire places.

Section 10.5 of the current ordinance specifies requirement for locally required air quality permits. The current air quality permitting ordinance exempts many types of boilers from permitting including wood heaters with a heat input less than 10 MMBtu/hr. This proposed amendment removes the exemption for all solid fuel fired boilers, including wood heaters. The only remaining permitting exemptions for boilers are natural gas boilers smaller than 10 MMBtu/hr and fuel oil fired boilers smaller than 1 MMBtu/hr in size. The Air Quality Division will develop a generic registration permit application that meets the requirements of the existing ordinance. Owners of new installations will be required to receive a permit prior to commencement of the installation. Owners of existing installed wood heaters will be given an administrative period of 180 days from date of rule adoption to submit a permit application. Owners of currently installed units that do not apply for a permit may be held subject to standards for newly installed units.

The provisions defining allowable wood and biomass fuels, nuisance conditions, and violations are consistent with the March draft ordinance.

In summary all existing outdoor wood boilers will be able to continue operations providing that certain stack height and fuel usage conditions are met. All future installations will need to meet the 0.6 lb/MMBtu standard. As such, setbacks and stack heights will not be of significant concerns. Any anomalous situations for a new unit would be addressed through the normal procedures specified in the permitting section (Section 10.5) of the air quality ordinance.

There are approximately 61,000 acres in cities in Linn County. Table 2 is summary of all the other unincorporated property zoning designations in Linn County

Table 2  
Zoning Designations

Zoning Designation <sup>1</sup>	Number of Parcels	Number of Addresses	Total Acres	Average Acres/Address
RR1	972	811	1,524	1.88
RR2	105	83	399	4.80
RR3	462	404	3,424	8.47
USR	2,806	2,529	5,863	2.32
AG	12,212	4,023	322,236	80.10
CNR	1,405	360	34,533	95.92
EU-1	7	1	259	259.00
GC	38	29	360	12.41
HC	55	67	154	2.30
I	6	67	49	0.73
MH	3	107	27	0.25
REC-AG	11	55	305	5.54
REC-CNR	36	163	954	5.85
REC-VR	4	3	3	0.92
VM	62	51	60	1.18
VR	568	419	998	2.38

<sup>1</sup>From [Unified Development Code Article 7](#)

- RR1 = Rural Residential 1-Acre District
- RR2 = Rural Residential 2-Acre District
- RR3 = Rural Residential 3-Acre District
- USR = Urban Services Residential District
- AG = Agricultural District
- CNR = Critical Natural Resources District
- EU-1 = Exclusive Use – Sanitary Landfill District
- GC = General Commercial District
- HC = Highway Commercial District
- I = Industrial District
- MH = Mobile Home District
- REC = Seasonal Cabin and Recreation Areas Overlay District
- FP = Floodplain Overlay District
- VR and VM = Rural Village District