HOME WOOD HEATING

A guide to clean burning
**HOME WOOD HEATING**

Wood burning is a significant source of air pollution in Lane County. If you heat your home with wood, there are several things you can do to burn “smarter.” This brochure provides you with information about the air pollutants in wood smoke, their health effects, and ways to produce less wood smoke.

**WOOD SMOKE AND HEALTH EFFECTS**

Wood smoke is fuel from your firewood that doesn’t burn, and instead becomes air pollution. The smoke contains carbon monoxide, carbon dioxide, water vapor, various chemical compounds and tiny particles. These fine particles contain more than 100 chemical compounds that can irritate your eyes, lungs and throat and cause health problems, including headaches, respiratory infections, bronchitis, emphysema and cancer. They are especially harmful to people with asthma, heart and lung diseases, very young and very old people, and pregnant women.

The small size of these particles makes them extremely hazardous because the body’s natural defense mechanisms can’t keep them from entering and lodging deep into the lungs, where they can damage lung tissue.
Smoke also contains the following pollutant gases:

- CO-Carbon Monoxide
  CO reduces the blood’s ability to supply oxygen to body tissues. Even small amounts can stress your heart and reduce your ability to exercise.

- NOx-Oxides of Nitrogen
  These oxides are especially harmful to people with asthma, and may lower a child’s resistance to lung infections.

There are also many toxic chemicals in wood smoke, such as:

- Aldehydes
  - Formaldehyde-(causes cancer)
  - Acrolein-(toxic)
  - Acetaldehyde-(narcotic)
  - Furfural-(irritant)
  - Benzene-(causes cancer)

- Alkyl Benzenes
  - Toluene-(toxic)

- Naphthalene-(irritant)

- Particulate Organic Carbon-(inhalation hazard)

- Polycyclic Aromatic Hydrocarbons (PAH)-(all are suspected of causing cancer)

- Chlorinated dioxins-(cause cancer)

- Substituted Furans-(some cause cancer)

We can reduce the health impacts of wood smoke by using alternative sources of heat or by practicing responsible wood burning.
Woodstove smoke from just one smoky chimney can cause serious health problems for your neighbors. Your neighbors might be allergic to woodstove smoke, or may have heart or lung problems that are worsened when exposed to smoke. Are there children in your neighborhood? Children often have asthmatic episodes caused from breathing in smoke. Consider your smoky fire’s effect on your neighborhood and take the necessary steps to minimize pollution on you, your family and others.
TAKING THE NECESSARY STEPS

Follow these steps to burn clean, heat more efficiently and reduce air pollution.

1 LOOK FOR ALTERNATIVES

Avoid burning wood when the air quality is poor. Use another heat source, and reduce your overall heating needs by installing ceiling and attic insulation, weather stripping, and storm windows. Burn only when temperatures are really cold, not when an extra layer of clothes will keep you warm.

2 BURN CLEANER WITH NEW TECHNOLOGY

Switch to a cleaner, and possibly cheaper fuel to heat your home. Consider replacing your old wood-stove or fireplace insert with a pellet stove, or a new certified woodstove, which will produce more heat while burning less wood. Switching to natural gas, oil or propane are also possible alternatives, as are modern electric air or geo-thermal heat pumps.

3 NEVER BURN GARBAGE

Never burn garbage, plastics, rubber, paint or oil, painted or treated wood, particle-board, plywood, coal, or glossy or colored paper. Burning such things produces fumes that are toxic to you and your neighbors, and often causes health problems for people with asthma, allergies, and heart/lung disease. And, it’s illegal under Lane County’s home wood heating program.

4 BURN SMART

Burn only dry, seasoned wood. Burning wet and green wood produces large amounts of smoke. Allow your firewood to dry a minimum of six months after splitting. Hardwoods dry
more slowly than softwoods and may take more than a year to dry. To speed drying, stack split wood loosely in a crosswise pattern to enable good air circulation. Stack wood in a sunny, well-ventilated area a foot or more above the ground and away from buildings. Cover to protect from dew, rain and snow, but leave the sides open to breezes.

Hardwoods, like oak, usually burn longer than softer woods, such as fir or cedar. Softer woods burn hot and fast. Use soft wood to get a fire going. Once you have a bed of hot coals, add hard woods to keep the fire burning longer.

Build small, hot fires to burn cleanly and reduce air pollution. This practice will also reduce creosote buildup in your chimney, which helps avoid chimney fires. Your fire needs air to burn cleanly. Leave the damper and other air inlets open for 20 to 30 minutes to establish a hot bed of coals before loading on any logs. Never damper the stove completely down. Keep your fuel loads modest to maximize heat and minimize air pollution.
If you can see thick gray smoke coming from your chimney, your fire is producing air pollution. The fire will burn hotter and cleaner if you increase the air going to the fire through the stove vent. A properly burning fire should give off only a thin wisp of white smoke. The darker the smoke, the more pollutants it contains and the more fuel it wastes.

**PAY ATTENTION TO SMOKE SIGNALS**

- **Acceptable**
  - 0% opacity
  - *Only heat waves are visible in this very clean fire*

- **Not acceptable**
  - 60% opacity
  - *This heavy smoke plume is not acceptable*

- **Acceptable**
  - 10% opacity
  - *This thin wisp of smoke is acceptable*

- **Not acceptable**
  - 100% opacity
  - *Thick column of smoke is unacceptable and avoidable*
“Holding” a fire overnight by cutting down the air supply creates a lot of smoke and creosote that cause a fire hazard. The smoke can backdraft into the house and cause a serious indoor air pollution problem. Let your fire burn out completely, and rely on your home’s insulation to hold in enough heat for the night.

Periodic inspection of your stove or fireplace is imperative to ensure its continued safety and clean-burning operation. Remove your stove ashes every 7-10 days and clean your chimney annually. Clean or replace plugged catalytic combustors according to the manufacturer’s instructions. Check your stove for leaks; the gaskets on airtight stove doors need to be replaced every few years.

These eight steps will reduce smoke output, and save you money. That’s because proper burning techniques cut fuel costs by providing more efficient heat.
Woodstoves that are not certified waste up to 60 percent of the wood burned in them. If you own an old stove, you should switch to a newer, cleaner heating system, such as a pellet stove, certified woodstove, or a non-wood burning system like natural gas, or an electric furnace.

To determine if your stove is certified, look on the back for a certification sticker from the DEQ or EPA. If there isn’t one, you have an old and potentially high polluting stove. DEQ rules and state building codes prohibit the sale and installation of a non-certified woodstove in Oregon.
HOME WOOD HEATING ADVISORIES

Lane County’s air quality is protected through a series of advisories that are part of the Home Wood Heating (HWH) program. The program is designed to help our community meet clean air health standards.

Home wood heating advisories are announced daily from the first of November through the end of February. There is one set of advisories for the Eugene/Springfield area and another for Oakridge to allow for differences in location and weather. All advisories are based on current weather conditions, pollution levels and weather forecasts.

WHERE TO FIND DAILY ADVISORY INFORMATION

◆ Home Wood Heating call line: (541) 746-HEAT (both Eugene-Springfield & Oakridge)
◆ Local television stations during weather portion of newscasts
◆ Local newspaper weather pages
◆ GuardLine @ (541) 485-2000, ext. 4273
◆ LRAPA @ (541) 736-1056 or toll free @ 1-877-285-7272
◆ Website: www.lrapa.org
WOOD BURNING ADVISORIES
(November-February)

EUGENE/SPRINGFIELD
AND
OAKRIDGE
Mandatory Program

Green: Wood heating is allowed, but not encouraged. Burn cleanly to minimize smoke. Burn only dry, seasoned wood.

Yellow: Air quality is deteriorating; burn only if necessary. Use other types of heat if possible.

Red I: No visible smoke is allowed. Visible smoke from a chimney will result in a violation. ***

Red II: Burning is prohibited. Use of a pellet stove is allowed as long as there is no visible smoke. ***

*** Visible smoke from a woodstove or fireplace may result in a fine of $50-$500.
FOR MORE INFORMATION ON AIR QUALITY ISSUES,
OR FOR ADDITIONAL COPIES OF THIS BROCHURE,
CONTACT LANE REGIONAL AIR POLLUTION AUTHORITY
(541) 736-1056

FOR MORE INFORMATION ABOUT LUNG DISEASE,
CONTACT THE AMERICAN LUNG ASSOCIATION OF OREGON
(503) 224-5145 OR 1-800-LUNG-USA