

# County of Santa Clara Environmental Resources Agency Administration



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ERA01 110502

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DATE: November 5, 2002

TO: Board of Supervisors

FROM:   
Tim Chow  
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SUBJECT: Ordinance to Regulate Wood Burning Appliances

## **RECOMMENDED ACTION**

Consider recommendations relating to an ordinance to regulate wood burning appliances.

Possible action:

- a. Accept report.
- b. Direct staff to prepare an ordinance to regulate wood burning appliances and forward it to the Board for review and approval.

## **FISCAL IMPLICATIONS**

There are no fiscal impacts on the General Fund. All building, mechanical, plumbing and electrical permits issued by the Office of Development Services, as referenced in this report, to install or replace wood burning stoves/heaters in Santa Clara County are 100% cost recovered. The Department of Environmental Health may seek grants to provide incentives not to burn.

## **CONTRACT HISTORY**

Not applicable

## **REASONS FOR RECOMMENDATION**

At its meeting on March 19, 2002 (Item 16), the Board of Supervisors requested that Administration provide a report relating to recommendations on costs and benefits of adopting an ordinance to regulate new construction or replacement of wood burning appliances. The cost benefit analysis should include the number of households potentially impacted, potential costs to homeowners, enforcement considerations and quantifiable potential health benefits. This report addresses that request.

The Housing, Land Use, Environment and Transportation committee reviewed and recommended approval of this action at its regular meeting on August 15, 2002.

## **BACKGROUND**

Wood is a source of fuel for space heating and cooking as well as aesthetic benefits. Campfires, barbeques and fireplaces are an important part of our way of life. Wood burning is also an important marketing tool in the food service industry. The California Health and Safety Code, for example, has specific provisions to legalize open-air barbeque facilities in food service establishments. While the actual numbers are unknown, the vast majority of dwellings in the unincorporated areas of Santa Clara County have permanent, masonry fireplaces.

Unfortunately, wood smoke is a significant contributor to particulate matter in the air, which worsens our air quality and degrades public health, as shown in the "Woodburning Handbook" of the Bay Area Air Quality Management District (Attachment A). According to Kaiser Permanente ("Member News," Spring 2002, page one), "particles from wood burning fires can irritate your lungs and cause you to cough or have difficulty breathing. This can be especially hard on people who have asthma or other breathing problems. Over time, the particles can damage your lungs and lead to chronic lung diseases and cancer." Wood burning also produces carbon monoxide and dioxin.

Wood burning "appliances" are generally defined as factory built, wood burning stoves/heaters as well as permanently installed masonry fireplaces or other devices that burn solid fuel for space heating and aesthetic purposes. Installing or replacing a wood burning appliance is subject to building permit inspection and approval in most jurisdictions for the purpose of fire protection.

In addition Palo Alto and San Jose have adopted ordinances to regulate the installation and replacement of wood burning appliances to improve air quality. The City of Santa Clara has recently adopted a similar ordinance. Each ordinance, however, is different and deviates in various ways from the Bay Area Air Quality Management District's model ordinance (see Attachment B).

#### Number of Potentially Impacted Households

Permits are required to install or replace wood burning stoves/heaters in Santa Clara County in the interest of fire protection. The County requires wood stoves/heaters to be listed by Underwriters Laboratories, Inc. or other approved laboratories. The County issued six permits for these appliances in the past five years, which is equivalent to 1.2 permits annually.

About half of the permits issued by the County for wood burning stoves/heaters met the United States Environmental Protection Agency (EPA) air quality standard for wood burning stoves/heaters. Prohibiting the installation and replacement of factory-built wood burning stoves/heaters that do not meet the EPA standard, therefore, would affect only about 0.6 households per year.

The County issued building permits for an average of one hundred seventy-three (173) dwellings per year in the past five years. Nearly all of them had permanent, masonry fireplaces. Prohibiting the installation and replacement of masonry fireplaces in unincorporated areas of the county, therefore, would affect an average of one hundred seventy-three (173) households annually.

The majority (55.8 percent) of households receiving building permits from the County in the past five years were located in urban pockets. Forty-four (44.2) percent of the dwellings were located in rural areas.

About half (22.2 percent) of the dwellings in rural areas had access to natural gas.

The other half (22.0 percent) were located in remote rural areas without access to natural gas. The burden of such a ban would be heaviest in remote rural areas, where fewer heating alternatives are available.

#### Potential Costs to Homeowners

Rarely does the County grant building permits for habitable structures that depend primarily on wood for space heating. The Uniform Building Code requires heating facilities to maintain room temperatures at 70 degrees Fahrenheit (21 degrees Celsius) at a height of three feet above the floor in all habitable rooms. Wood burning appliances are considered to be a reliable heating source for meeting this standard, compared to liquid natural gas (propane), in some jurisdictions, but not others.

Households without access to natural gas typically rely on liquid natural gas (propane) for space heating and burn wood as a back-up source of heat. Banning the installation and replacement of masonry fireplaces would prevent an estimated

thirty–eight (38) homes per year (22.0 percent) from being built, remodeled or renovated in remote rural areas where other space heating options are unavailable or infeasible.

An estimated one hundred thirty–five (135) homes per year (78 percent of the dwellings) would have access to natural gas and, presumably, would not need to burn wood in their fireplaces for space heating. These households would bear aesthetic, but not necessarily functional, losses from not being allowed to install new or replace existing fireplaces.

Allowing homeowners to install wood stoves/heaters and wood pellet stove inserts (for fireplaces) that meet EPA or local air district (Northern Sonoma County Air Pollution Control District, e.g.) standards would reduce wood smoke emissions and may help to mitigate the adverse impact of such a ban in some situations.

The cost of installing a new wood stove/heater that meets EPA or local air district standards is not significantly greater than the cost of installing a new and comparable wood stove/heater that does not meet EPA or local air district standards. The cost of installing a new wood pellet stove insert (for a new fireplace) that meets EPA or local air district standards is not significantly greater than the cost of installing a new, comparable pellet stove insert that does not meet these air quality standards.

The cost of replacing or retrofitting an existing wood burning appliance with a new wood stove/heater, a new wood pellet stove insert, or a new gas fireplace, however, could well be significant, depending on the situation. Such a change may also reduce the fair market value of the home, its assessed value and property tax revenue.

#### Enforcement Considerations

An ordinance to prohibit the use of existing wood burning appliances may reduce property values and would rely for enforcement upon complaints by neighbors against each other, which tends to be divisive at best. The hardships would be widespread and especially burdensome for homes in remote rural areas without access to natural gas. Limiting the scope of such a ban to new construction, replacements and additions would not reduce real property values, would not be divisive and would not be as costly for the County to enforce.

Prohibiting the installation and replacement of wood burning appliances by ordinance, however, would not prevent homeowners from installing or replacing them without benefit of permit. Asking for forgiveness is more customary than asking for permission, particularly in rural areas. Code enforcement in unincorporated areas of the county is a complaint–driven process in which officials usually try to work with violators to bring them into compliance voluntarily.

The cost of enforcement also depends upon the penalty imposed. Infractions are generally less complex and less expensive to administer than misdemeanors, which would require criminal action by the District Attorney.

Restricting the amount and type of fuel burned and the frequency and time of burning is another way to improve air quality, but such restrictions are also difficult to enforce. Limiting the fuel in wood burning appliances to composition logs, which burn much more cleanly, would be advantageous for air quality but extremely difficult to enforce. Wood pellet stove inserts also reduce emissions but the use of which is difficult to enforce, since they can be readily modified after installation within fireplaces.

#### Quantifiable Health Benefits

As explained in the Bay Area Air Quality Management District's "Woodburning Handbook," air quality depends on the amount and type of fuel burned and the efficiency, frequency and time of burning. Health benefits also vary with the location of burning, dispersion of emissions and proximity of emissions to people at risk. The relationships among all of these variables are complex and subject to challenge (for example, see "Regulators move fast to clear the air," Contra Costa Times, posted on 6-6-02 <<http://www.bayarea.com/mld/cctimes/341167.htm>>).

Dust particles, carbon monoxide and dioxin, after all, come from distant and multiple sources, not just wood burning appliances in dwellings within the County. Quantifying the health benefits of prohibiting the installation and replacement of wood burning appliances would take a great deal of research and is beyond the scope of this report.

In general, reduced wood burning is expected to improve ambient air quality and result in health benefits to people at risk. Reducing wood burning is expected to improve ambient air quality in both rural and urban areas. However, health benefits are expected to be greater in urban pockets than in remote rural areas, where fewer people are at risk. The benefits are also greater at certain times of the year and under certain weather conditions.

Although the occupants of non-residential buildings, like dwellings, rarely depend upon wood burning appliances for space heating, they also burn wood and generate emissions. Many restaurants and bakeries (with pizza ovens, grills, barbeque pits) burn wood for cooking and baking and would not be able to compete effectively if the installation and replacement of wood burning appliances were prohibited.

Ambient air quality does not depend only upon what is burnt in the dwellings, bakeries and restaurants of the county's unincorporated areas. Air quality also depends on what is burnt at power plants, factories, agricultural sites, controlled burn areas and campgrounds and at non-point sources by buses and trucks (diesel in particular), aircraft, commuters, wild fires and fireworks. The relationship between health benefits for county residents and reduced emissions from banning the installation and replacement of wood burning appliances in homes within unincorporated areas, therefore, is indirect at best.

### Three Strategies

Installing and replacing wood burning appliances is currently allowed by permit in the unincorporated areas of Santa Clara County. If the Board of Supervisors wishes to reduce wood burning in order to enhance air quality, then it should consider three strategies: (1) prohibiting the installation of certain types of new wood burning appliances in certain places, (2) offering incentives for not burning wood at certain times and/or for converting existing wood burning to gas burning appliances or (3) pursuing both penalties and rewards.

If the Board of Supervisors prefers to impose penalties for burning wood, the Board should make it illegal by ordinance to install or replace these appliances. If so, the ordinance should: (a) generally follow the wood burning ordinances of the City of Palo Alto or preferably the City of Santa Clara; but (b) exempt remote, unincorporated rural places that do not have access to natural gas from the ban, based on differential costs (hardship or fewer neighbors at risk).

Palo Alto's ordinance prohibits the installation, reconstruction, remodeling/renovation and addition to/alteration of/repair of wood burning appliances after July 30, 2000 and if a building permit is required. Santa Clara's ordinance simply prohibits the installation and addition of wood burning appliances.

Both cities exempt: (a) gas fireplaces; (b) wood pellet stoves; (c) wood stoves/heaters that meet the EPA air quality standard of less than 7.5 grams of particulates per hour; (d) wood stoves/heaters that meet the air quality standard of the

Northern Sonoma County Air Pollution Control District, which is slightly lower than the EPA standard; (e) outdoor fireplaces that are detached structures; and (f) cooking stoves. Palo Alto exempts wood burning stoves that are used exclusively for cooking. Santa Clara exempts wood burning stoves that are used primarily for cooking. Palo Alto exempts EPA "certifiable" fireplaces (if the EPA establishes such a standard in the future). Santa Clara does not provide for such a contingency.

The City of Palo Alto treats violations as infractions. The City of Santa Clara treats violations as criminal misdemeanors unless the City Attorney decides that the case should be handled as an infraction. Both cities also treat violations as a public nuisance. While both ordinances have much in common, Santa Clara's ordinance is more focused, more pro-active and tougher in terms of enforcement.

In contrast, the Board of Supervisors may prefer to provide people everywhere in the county with incentives not to burn wood at critical periods of time. The Department of Environmental Health, for example, could offer appropriate prizes at its household hazardous waste collection sites to the children of customers who do not burn wood in response to "Spare the Air Tonight" alerts by the Bay Area Air Quality Management District.

While the Bay Area Air Quality Management District is currently coordinating efforts with Los Esteros Critical Energy Facility (Calpine) in the Alviso/Milpitas area to provide a \$500 credit incentive to residences within a three mile radius of the energy facility to convert existing wood burning to gas burning appliances, it has not offered to provide comparable credits for conversions in unincorporated areas of Santa Clara County.

## **CONSEQUENCES OF NEGATIVE ACTION**

Air quality in the County, as in the rest of the San Francisco Bay Area, has improved dramatically during the past thirty years. Prohibiting the installation and replacement of wood burning appliances and/or offering an incentive not to burn wood at critical times would help to further improve the County's air quality. If such a ban or if such an incentive were not adopted, air quality would not improve as much. The health benefits from air quality improvements, particularly for those at risk, would not be forthcoming.

## **STEPS FOLLOWING APPROVAL**

No action is required by the Clerk of the Board.

## **ATTACHMENTS**

- (Transmittal submitted on Oct 28, 2002 12:39:54 PM – PDF Version)
- Woodburning Handbook – Attachment A & B (Miscellaneous)