

Wood Combustion – Residential Heating and Recreational Burning

Activity:

Reduce Air Pollution from Residential Wood/Biomass Burning. Learn more about the amount of wood or other biomass burning in the neighborhood and how it affects the air quality (how much it contributes to fine particle and air toxic concentrations). Reduce unnecessary woodsmoke exposures in a manner sensitive to religious traditions.

Recommend pursuing some or all of the following:

1. A recent MN Department of Natural Resources survey found residential woodburning increasing in the metro area. Conduct a very simple or a more thorough survey to learn how important woodsmoke is to local air quality. Community members may be able to share information about the local woodburning and additional information may be available, for example, from utilities, chimney sweeps and federal housing data.
2. Increase education and outreach about the air quality impacts of woodburning and the health benefits of reducing residential woodsmoke. Outreach could be increased when the Air Quality Index (AQI) is higher.
3. Minneapolis has an ordinance related to burning; this could be strengthened to reduce recreational burning.
4. Wood stove changeout programs provide consumers with financial incentives (e.g. rebates) to replace older stoves with cleaner and more efficient wood stoves, pellet stoves or gas stoves. (<http://www.epa.gov/woodstoves/changeout.html>.) Any future statewide wood stove changeout program could be promoted within the community. Alternately, it may be feasible to pilot a wood stove changeout pilot program focused in the Ventura Village neighborhood of Phillips.
5. Investigate the contribution of biomass burning on local ambient PM_{2.5} concentrations. For example, the EPA is studying the contribution of biomass burning using a biomass burning maker (e.g. levoglucosan) in rural and urban Midwest locations. The MPCA submitted archived year 2004 PM_{2.5} filters from the Anderson School and Mille Lacs for this study. Dual wavelength aethalometers may also be of use in estimating woodsmoke in the air.

Impact/Benefit

- Emission reductions from that type of source:

(While it is not necessary, and may not be possible to quantify the emission reductions, quantitative estimates may be more useful than purely qualitative estimates (large, medium or small).)

EPA estimates that replacing 25 non-certified, older stoves with 25 EPA certified stoves can prevent the emissions of one ton of PM_{2.5} per year.

- Number of similar sources (large or small number):

(For example, there are a lot of vehicles in the communities, but probably a relatively small number of outdoor wood boilers.)

DNR estimates there are more than 32,000 wood stoves and more than 350,000 woodburning devices in the Twin Cities Metropolitan area, but it's unknown how many are used within the CAIP community.

- Severity of the impacts to be mitigated

Reducing ambient urban PM_{2.5} and air toxics from woodsmoke may slightly reduce the occurrence of a range of serious health effects including premature mortality (esp. in the elderly), respiratory illness (e.g. acute and chronic bronchitis), asthma attacks, heart disease, and cancer.

- Visibility of the impacts. For example, the unique paint jobs of hybrid buses makes them more visible, whereas clean diesel buses produce significantly fewer emissions than standard buses but are less visible.

Woodsmoke is visible and community outreach programs could be visible.

Plan Implementability

- General feasibility (easy, difficult):

If MPCA and other partners conduct a statewide wood stove changeout program, then it would be relatively easy to publicize it within the community. The feasibility of a pilot wood stove changeout program focused on the community is less clear.

Education about woodsmoke and air quality: - easy.

Revising a Minneapolis ordinance to reduce or ban recreational woodburning: - TBD.

- Cost of implementing (financial and labor):

Wood stove changeouts – Costs to consumers would depend on the availability of rebates and tax credits.

Education and outreach - labor and perhaps a limited budget for printer materials

Minneapolis ordinance – includes labor

- Need for additional funding, list of possible funding sources:

1. Funding for a wood stove changeout program - The costs of many local wood stove changeout programs, including advertising, are often covered by a partnership of government agencies, gas utilities, and wood stove manufacturers, distributors, and retailers.
2. There are Federal Tax Credits for a Energy Efficiency – Efficient Biomass Stove http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#c5 which burns biomass fuel to heat a home or heat water. Thermal efficiency rating of at least 75 percent as measured using a lower heating value. 30 percent of cost, up to \$1,500.
3. Federal stimulus funding may apply to a woodstove changeout program because it would conserve biomass energy.

- Recommendation on how to and who should pursue funding:

MPCA, MDH, Minneapolis, Clean Air Minnesota or others could investigate funding opportunities.

- Labor required and available to implement activity (volunteer or professional labor):

Could include volunteer and professional labor.

- Timeframe to implement (one-time or on-going):

Wood stove changeout programs usually occur for a limited time period.

Community education about air quality and woodsmoke could be ongoing.

A Minneapolis ordinance would be ongoing.

Ripeness for action

- This activity can be initiated immediately yes/no

- This activity needs funding **TBD**
- Funding for the activity can be secured immediately or soon **TBD**

Recommendation:

Implement as soon as possible; implement as resources are available or do not implement