



MINNESOTA POLLUTION
CONTROL AGENCY



Learn Before You Burn Outreach at the Minnesota State Fair

Mary Jean Fenske, Air Policy Unit Supervisor

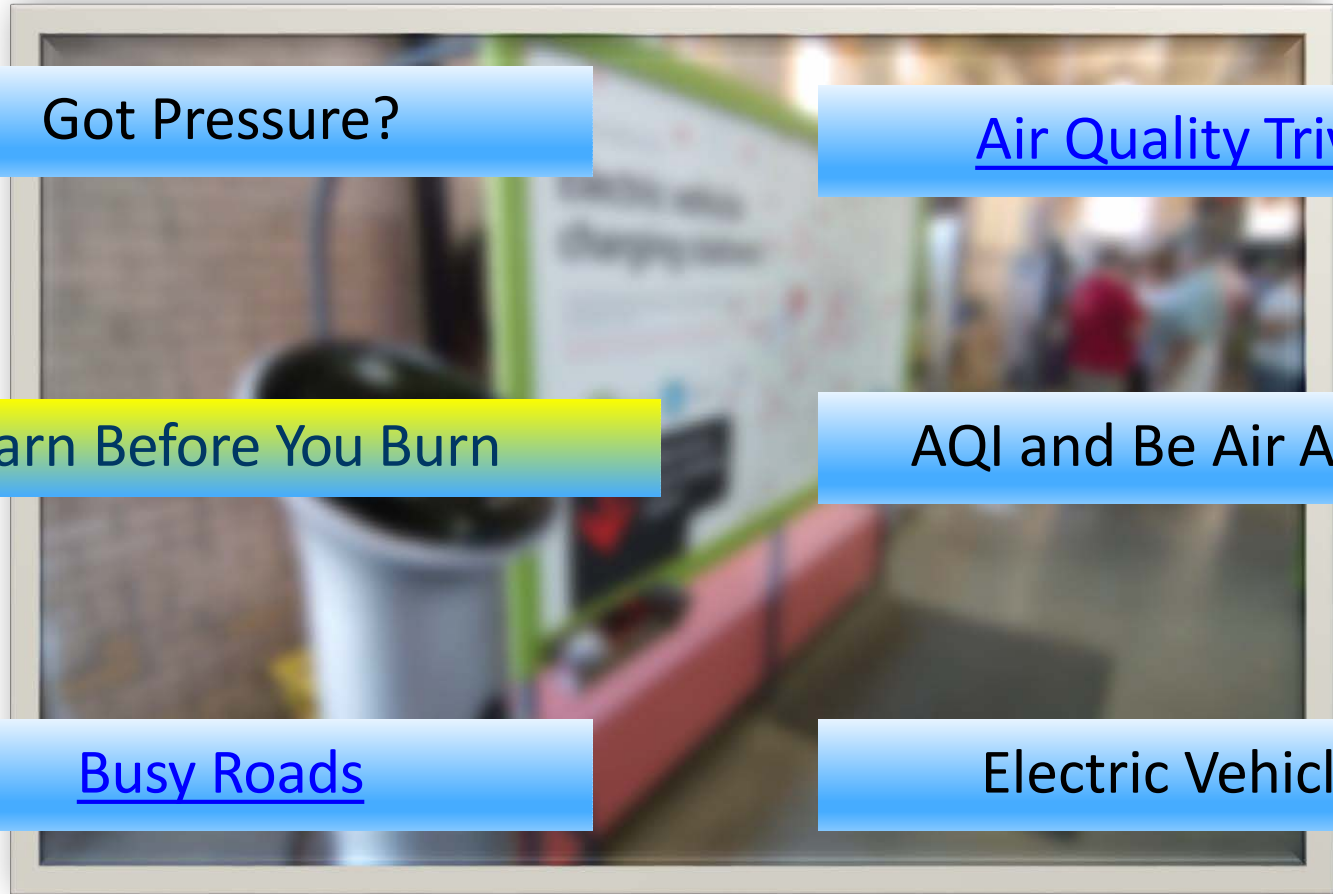
March 7, 2018

Eco Experience at the Minnesota State Fair

- MPCA collaborated with partners to launch the Eco Experience in 2004
- Filled with hands-on activities, demonstrations and resources, the Eco Experience is supported by dozens of local organizations.
- Recent Eco Experience attendance:
 - 272,064 in 2017
 - 262,322 in 2016



AQ Exhibits for 2017



Got Pressure?

[Air Quality Trivia](#)

Learn Before You Burn

AQI and Be Air Aware

[Busy Roads](#)

Electric Vehicles

Learn Before You Burn – Wood Stoves

- EPA-certified wood or gas stoves are cleaner and more efficient
- Incentive programs available – Project Stove Swap, local utilities, retailers

LEARN BEFORE YOU BURN

Switch to gas or EPA-certified wood stoves

Changing out your old wood stove can save money, fuel, and time.

Worst

Unventilated wood stove
An older wood stove that does not have an EPA certification. These stoves can pollute the air and are the most expensive to operate.



Reduce air pollution

1
Burn only clean, dry wood

Good

EPA-certified vented stove
A newer wood stove that has an EPA certification. These stoves are more efficient and pollute less.



Reduce air pollution

2
Don't burn on Air Quality Alert days

Good

EPA-certified ventless stove
A newer ventless wood stove that has an EPA certification. These stoves are more efficient and pollute less.



Good

EPA-certified wood pellet stove
A newer wood pellet stove that has an EPA certification. These stoves are more efficient and pollute less.



Best

Natural gas stove
A newer natural gas stove that has an EPA certification. These stoves are the most efficient and pollute the least.



Reduce air pollution

3
Different technology makes a big difference

Find the cleanest appliances that meet your needs

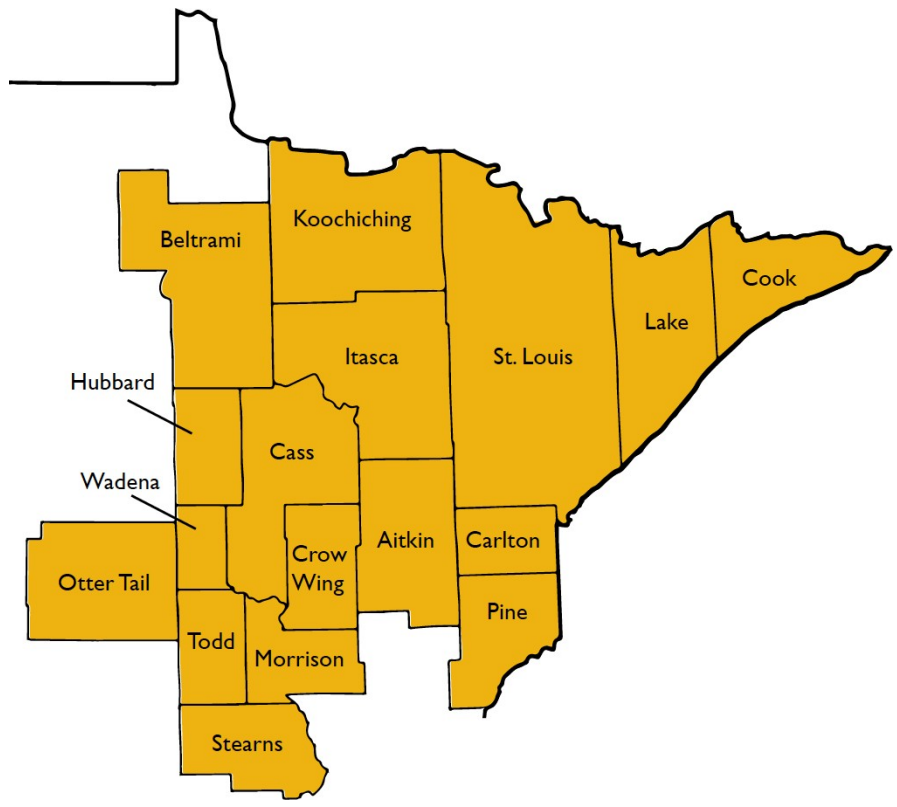
www.epa.gov/burnwise

- Look for the new label measuring efficiency ratings
- Check the granular particulate matter emissions test data
- Ask for an EPA 2020 certified stove

Burn & Wise



PROJECT STOVE SWAP



- Implementer: Environmental Initiative
- Currently: 17 Northern MN Counties
 - Active Fundraising to Expand



Project Stove Swap Results



- Over 200 appliances changed out
- Particulate Emission Reductions equivalent to 533,000 cars off the road!
- Over \$1.2 Million in economic activity
- ~50% of new appliances manufactured in Minnesota

Learn Before You Burn – Burn Dry Wood

Wet wood is a waste

Fresh cut wood contains a lot of water

How to find out wood moisture content

How to keep wood dry



- How much water is in fresh cut wood?
 - Quart?
 - Half gallon?
 - Gallon and a half?





ILL

Burn dry firewood to save money



Wet wood is a waste
Burn dry firewood to save money and health!

Four easy steps to dry firewood:

- Step 1: Split
- Step 2: Stack
- Step 3: Cover
- Step 4: Store

Burn it Wisely
SAFE

Project Stove Swap
Money available to help replace old wood stoves (Paints money runs out)

Eligible Homeowners:
- Own a wood stove
- Stove is 15 years or older
- Stove is not EPA certified
- Stove is not a pellet stove
- Stove is not a gas stove

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How to Apply: [Apply Now!](#)



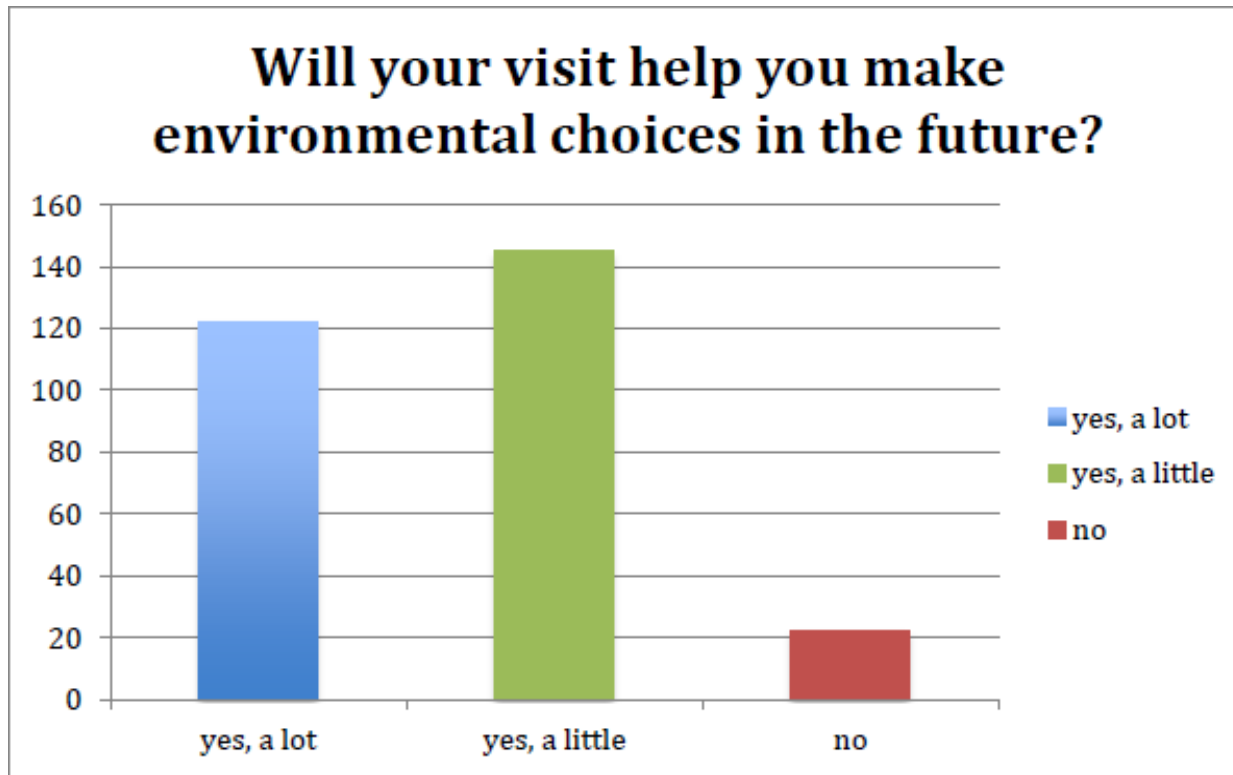
Worst
Wood Stove
A wood stove produces 200% more pollutants each hour than a pellet gas stove.



Best
Pellet Stove
A pellet stove produces 50% fewer pollutants than a wood stove.



How effective is the Learn Before You Burn exhibit?



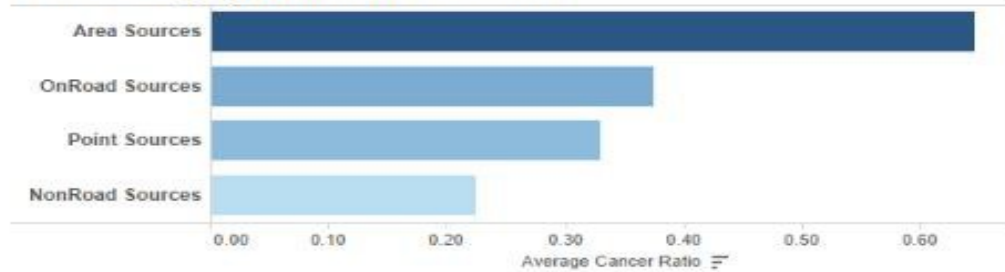
21 Interviews following wood stove exhibit

- What drew you to the exhibit?
 - Wood burning experience
- What emotions did it trigger?
 - Mixed. Guilt to surprise
- Will you take action?
 - All reported similar plan to take action, e.g. change to cleaner stove and burn only dry wood

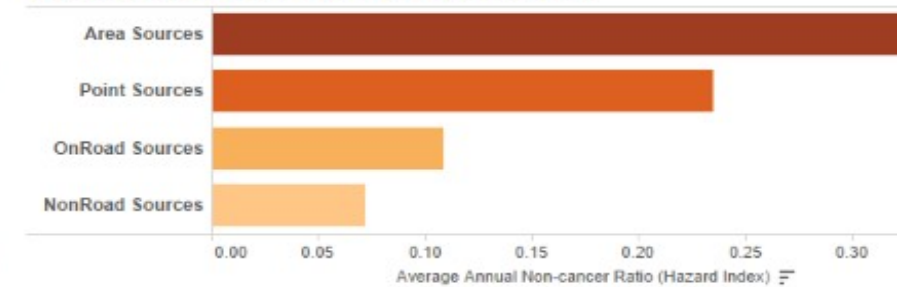
Complete survey results available on request

Wood Smoke: Significant to statewide cancer risk (blue) and noncancer risk (orange)

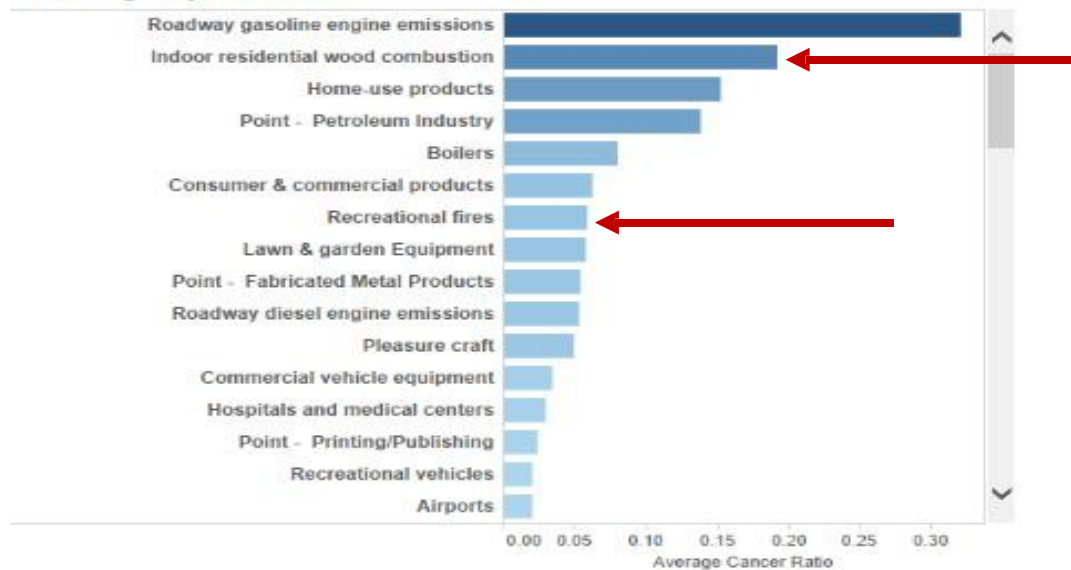
Source category contribution to risk ratio



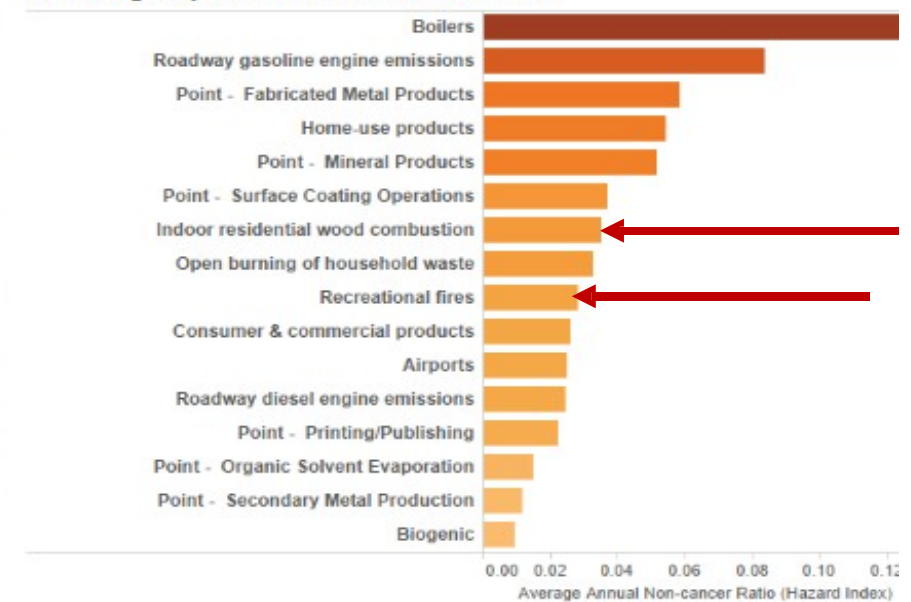
Source category contribution to risk ratio



Source group contribution to risk ratio

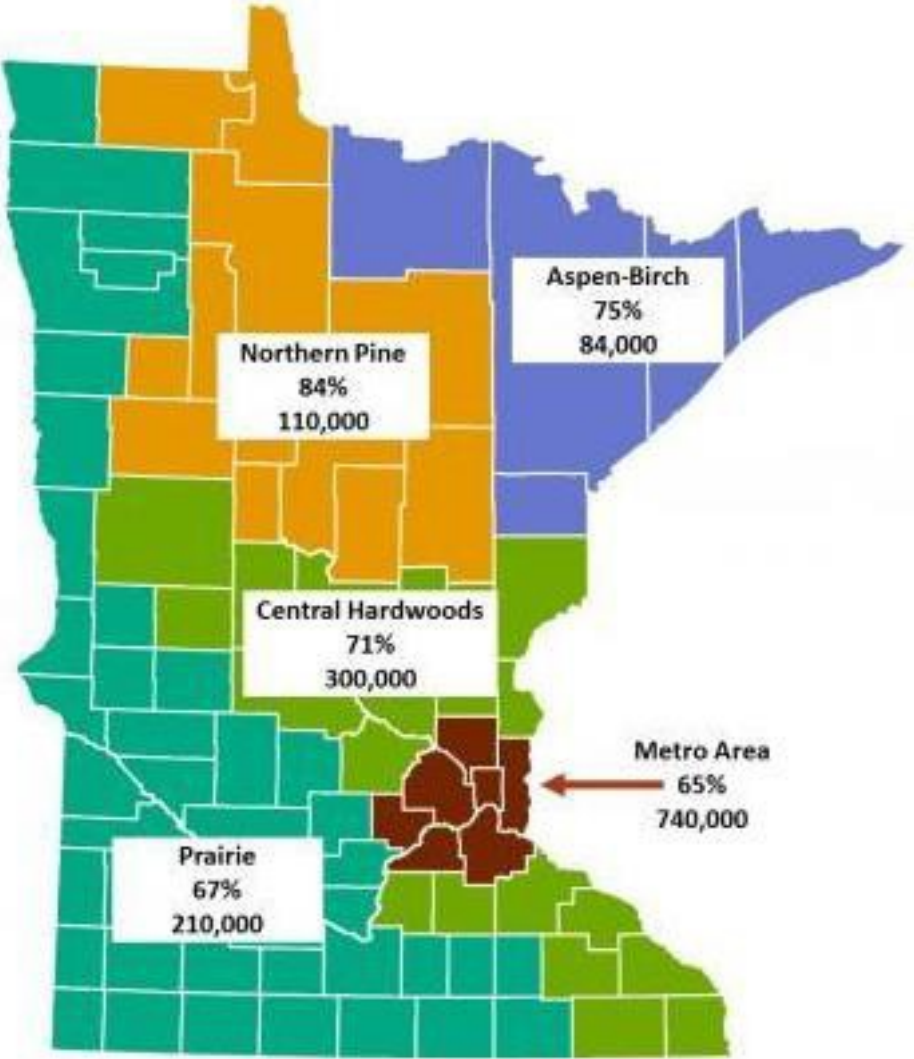


Source group contribution to risk ratio

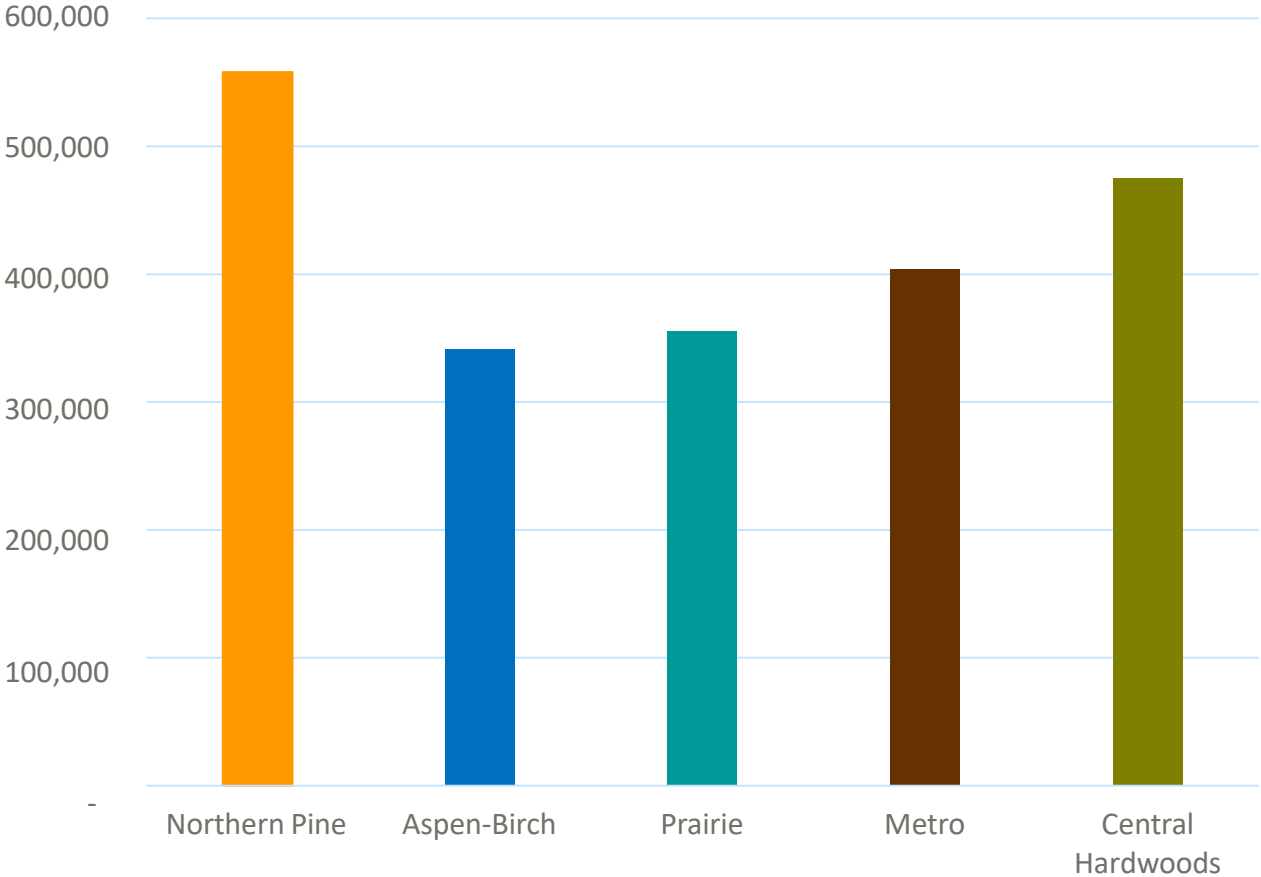


See MNrisks online, excluding diesel PM2.5 - <https://www.pca.state.mn.us/air/air-modeling-and-human-health>

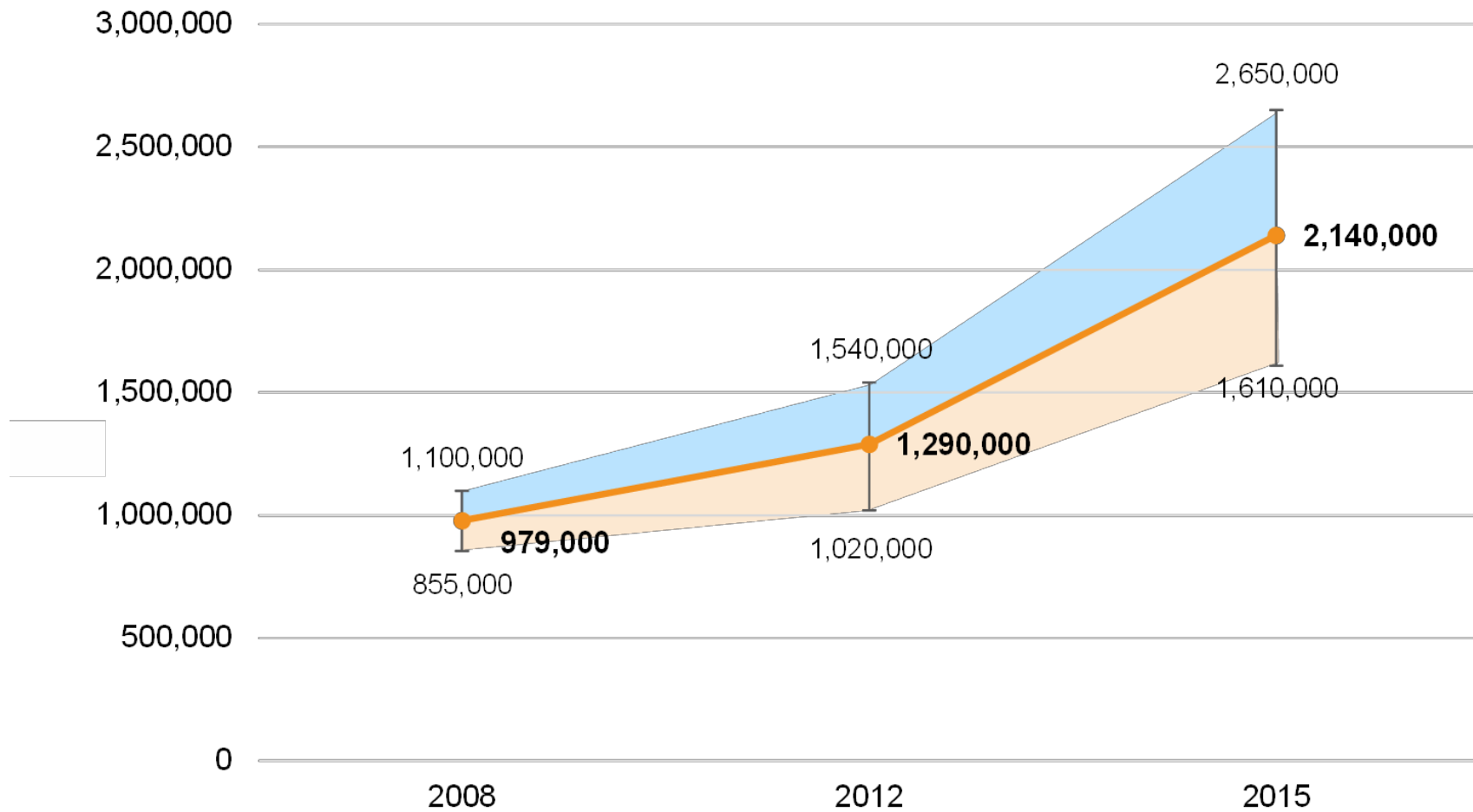
More than 2/3 of Minnesota households burn wood



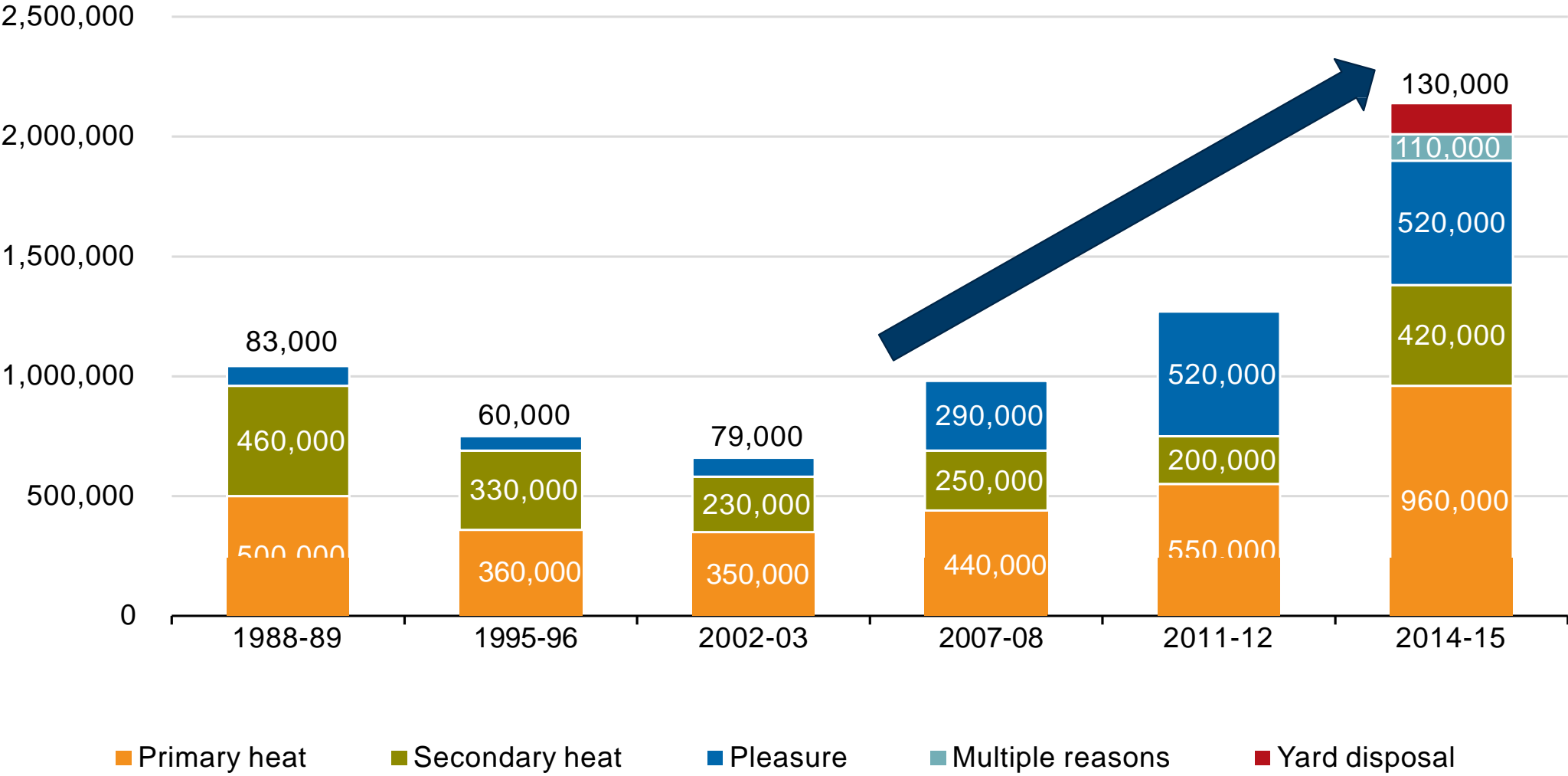
Cords of wood burned by Region



Wood burning is increasing in Minnesota

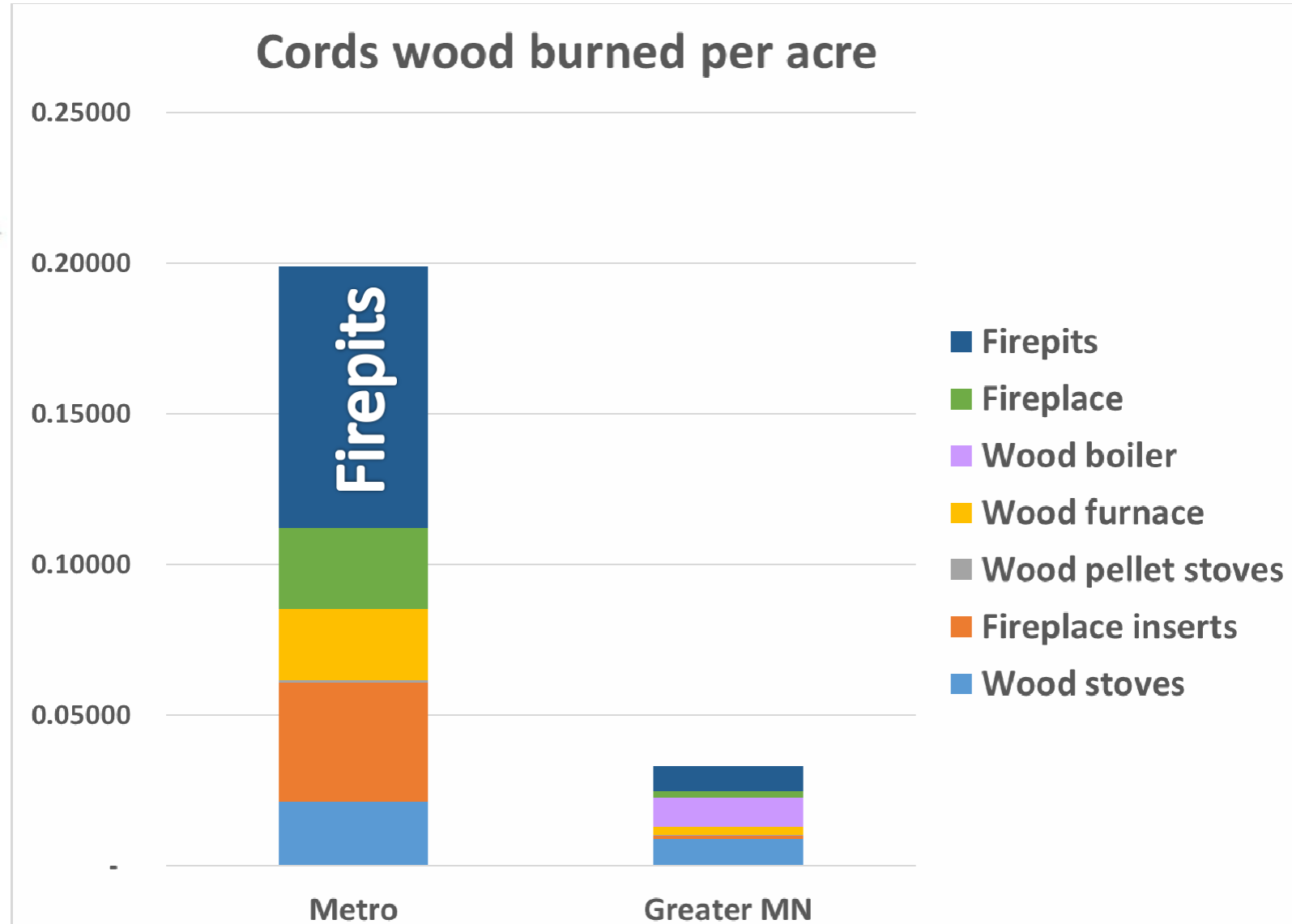
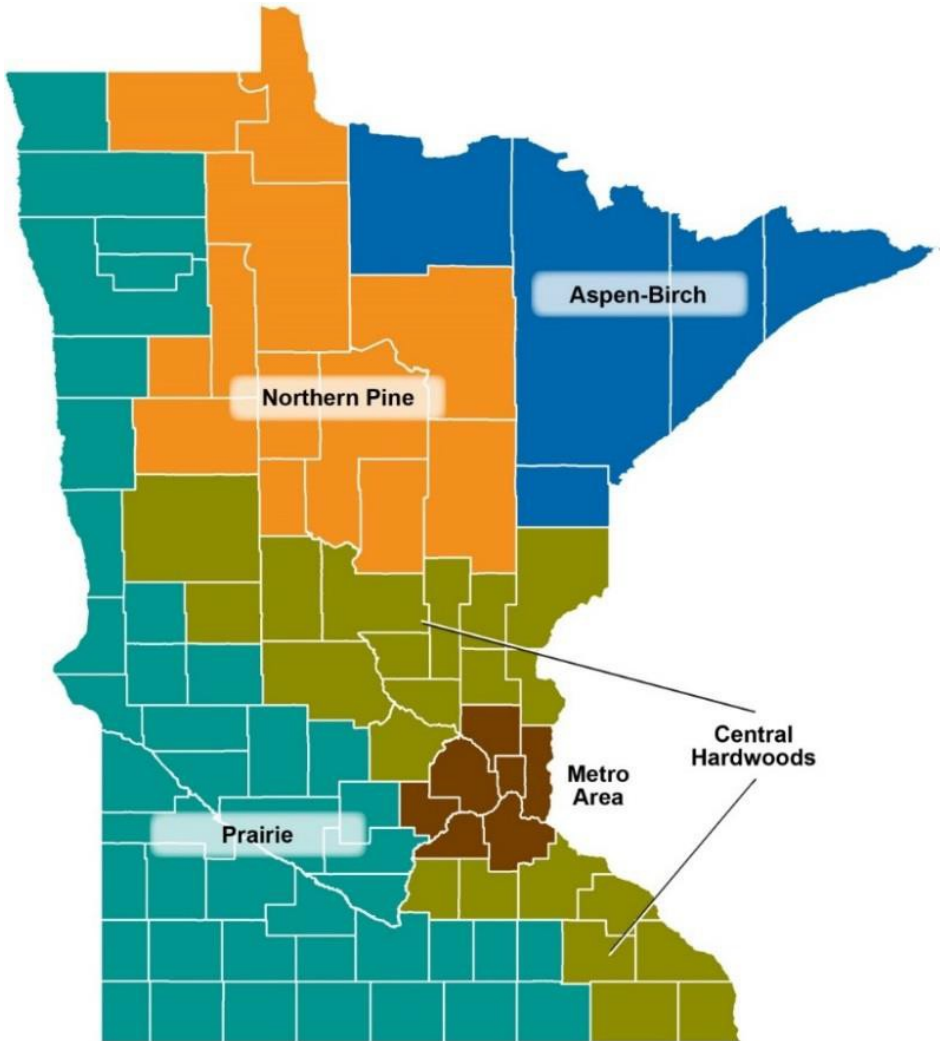


Cords of wood burned - by purpose over time

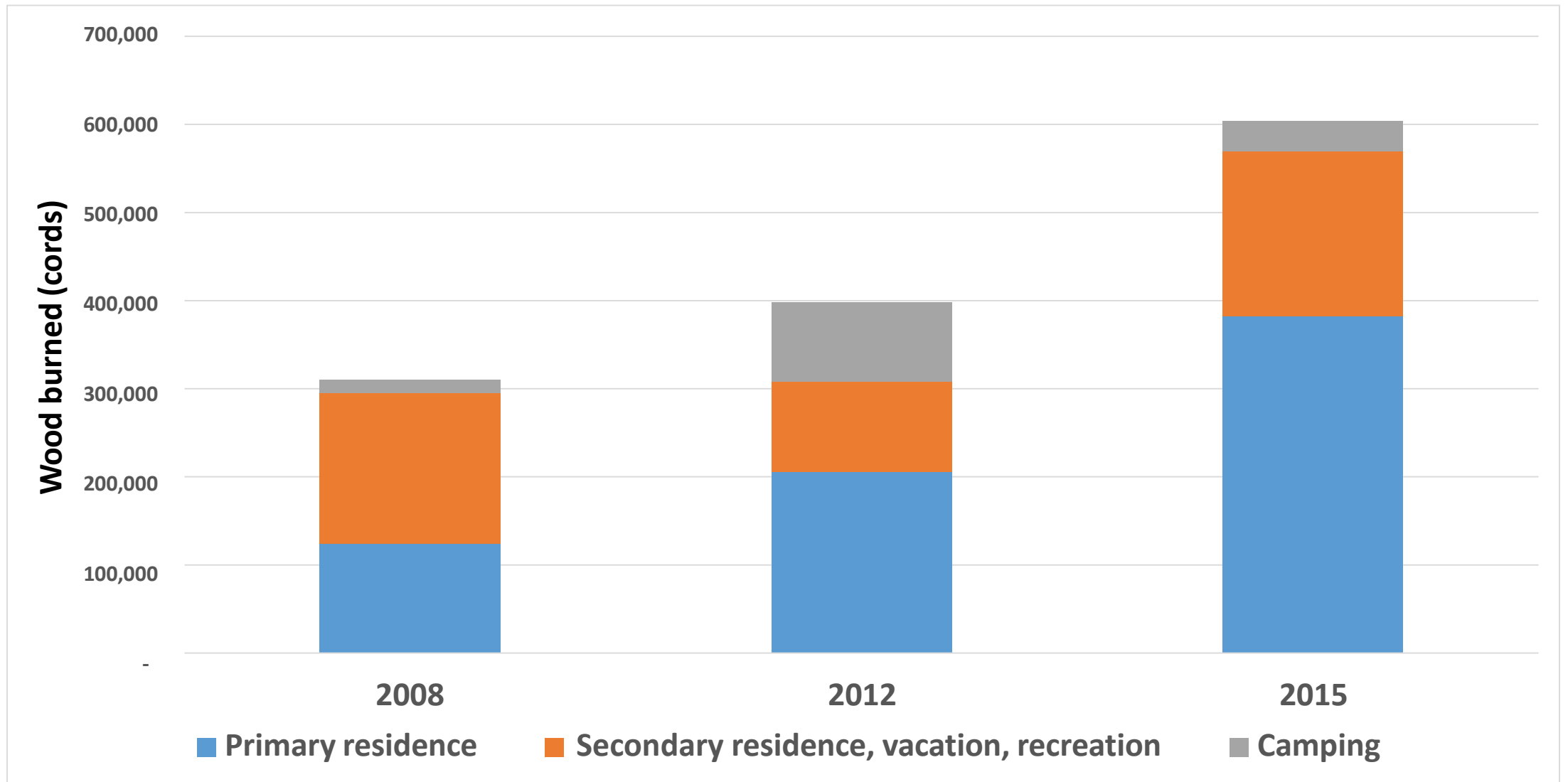


Note: survey methods have evolved over time

Metro region: populated, most cords/acre & firepits



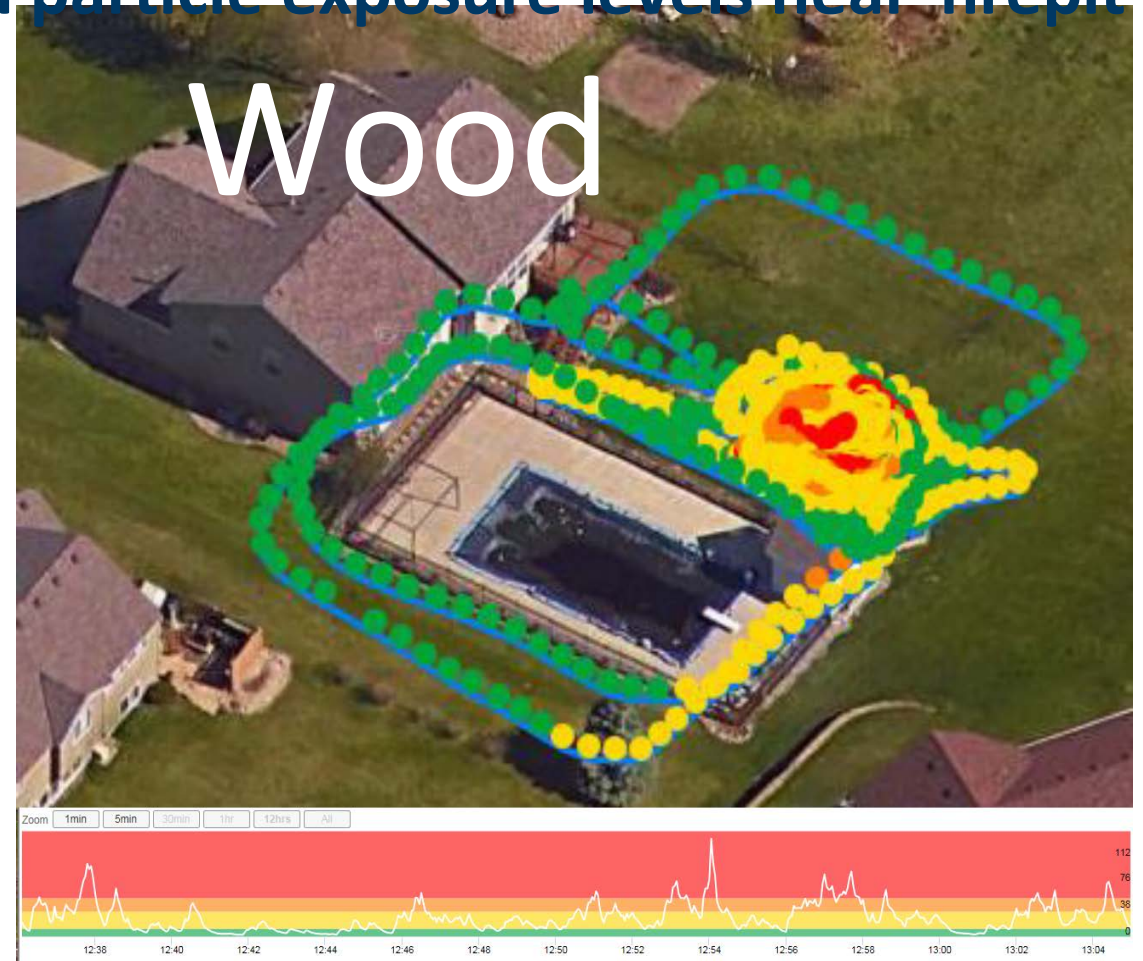
Wood burned in firepits increasing over time



Exposure in our neighborhoods

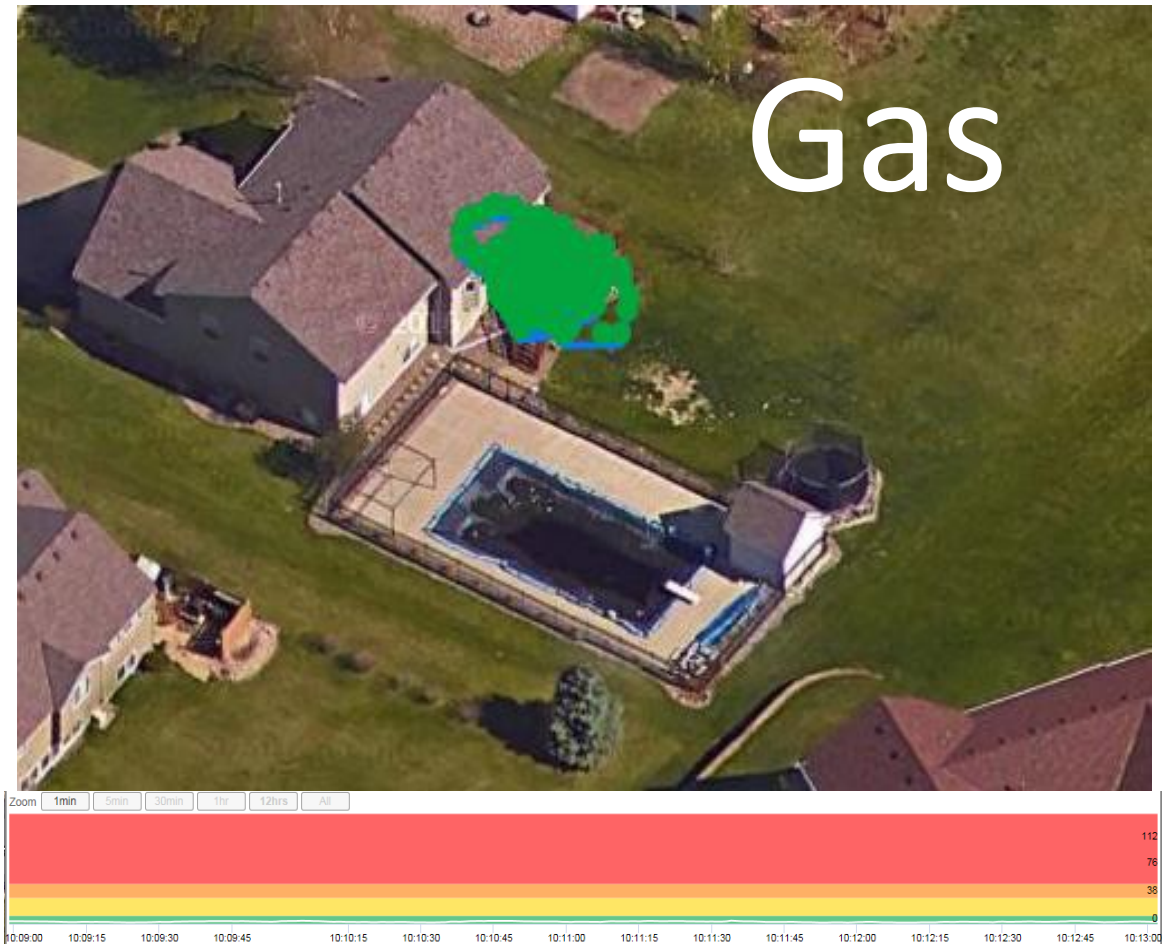
Wood-burning firepit

Sensor can illustrate relatively high particle exposure levels near firepit



Exposure in our neighborhoods

Gas burning firepit:
Illustrates nearby particle levels are much lower from gas





Questions?

Mary Jean Fenske

Maryjean.fenske@state.mn.us

651-757-2354

www.pca.state.mn.us/air/wood-smoke

