

October 6, 2022. Episode 43. Toolbox for Change.

## Tools.

1. EXCEL SHEET EVIDENCE Go to the PurpleAir map, find a neighbor's monitor, and click on the downward arrow in the white box in the lower left corner of the map. Each neighbor of a residential wood burner downloads data from their own monitor on the PurpleAir Map to an Excel spreadsheet for a representative period of time (a month, such as January 1-31, 2022) choosing 1440 minutes (a 24 hour period). Each neighbor identifies column PM2.5\_ATM\_ug/m3 and uses the HIDE function to hide all other columns on the sheet except date (highlight columns you want to hide, by left clicking and choosing HIDE. You can also UNHIDE the same way, first highlighting visible fields on either side of the hidden columns).
2. Each neighbor creates a column called Pac= $PA \times 0.5146 + 1.8304$ . In that column the calculation is inserted ((PM10\_ATM\_ug/m3 for a specific line, say January 1, 2022) x 0.5140) + 1.8304. In Excel type the equation =(\$I2\*0.5146)+1.8304 in box J2. Then click on left lower corner of J2 and pull the equation down to box J32.
3. Copy and paste column J Days 1 to 31 to columns K L and M. To compare the number of days that PM 2.5 is above 5 ug/m3 (World Health Organization standard for PM 2.5), above 8 ug/m3 (expected new U S standard for PM 2.5 after November 2022) and above 12 ug/m3 (current U S standard for PM 2.5), use HOME>CONDITIONAL FORMATTING>HIGHLIGHT CELLS RULES>GREATER THAN>choose A COLOR to HIGHLIGHT ABOVE 12, CHOOSE A COLOR to HIGHLIGHT ABOVE 8, AND CHOOSE A COLOR to HIGHLIGHT ABOVE 5.
4. Save the Excel sheet and use as evidence of PM 2.5 levels above EPA standard.
5. Use Excel Sheet evidence to introduce ordinances or other enforceable laws to municipalities or governments.
6. Comment and testify about the health effects of PM 2.5 pollution during the comment period November 2022 onward when the EPA will consider lowering the PM 2.5 standard from 12 micrograms per meter cubed in a 24 hour period to 8. The World Health Organization standard is currently 5. Health organizations such as Asthma Australia have stated that minimal levels of PM 2.5 also cause human disease.
7. Distribute PM 2.5 monitors, possibly free, to near neighbors of residential wood burners. This will be done in a pilot program in Alaska starting in 2022. It has been done in the London, England area since the spring of 2022. It was done in Chicago starting in August 2022, although that was to monitor PM 2.5 from traffic. Governments should consider handing out PurpleAir monitors free to needy residents, since disadvantaged and poor neighborhoods are disproportionately affected by PM 2.5 from residential wood smoke.

Members of the public are taking air quality monitoring into their own hands to get a clearer picture of pollution in their community, in turn, fueling campaigns pushing for legislative and policy-level changes. Across the country, the work can be read as a blueprint, informing others how they can begin to enact change in their area. Residents Against Wood Smoke Emission Particulates (RAWSEP) advocates for ordinances or other enforceable laws to shut down residential wood burning which exceeds the (expected) EPA standard of 8 micrograms per cubic meter of PM 2.5 average in a 24 hour period. RAWSEP advocates for monitoring to be done by PurpleAir PM 2.5 monitors at the fenceline of near neighbors of residential wood burners. Residents against Wood Smoke Emission Particulates has already published videos and podcasts about tools to stop Residential Wood Burning. They are Episodes 30, 31, 39 and 40. This Episode 43 is a "Toolbox" for Change, combining the tools to give a blueprint of how to propose an ordinance, and how to gather evidence for enforcing an ordinance in order to shut down polluting residential wood burning. PM 2.5, particulate matter of 2.5 micrometer size, is the perfect size to infiltrate the human lung, causing a cascade of human health problems. Health concerns raised by residential wood burning is the focus of RAWSEP. PM 2.5 also contributes to climate change. Collectively, RAWSEP members have decided to view information about wood burning (biomass burning, including industrial wood burning) through the lens of historical PM 2.5 monitor data and focus their attention on decisions made and actions taken in recognition of the true level of particulate pollution in the air of near neighbors experiencing residential wood burning. Collectively, RAWSEP members believe governmental decisions about residential wood burning should be made recognizing first and foremost the level of particulates generated by residential wood burning that threaten human health and life of near neighbors, since residential particulate pollution is hyper-localized. But like industrial wood burning, residential wood burning, also threatens further escalation of climate change.