

HEAT & AIR QUALITY RESILIENCE (HAQR) WORK GROUP

Quarterly Meeting

November 29, 2023

Meeting Objectives

- Get to know the HAQR Co-Chairs
- Learn about wildfire smoke and health communication strategies
- Network and share information with fellow working group members

Agenda

- Welcome and Meeting Objectives
- Icebreaker
- HAQR Updates
- Group Information Share
- Wildfire Smoke Health Communications and BAAQMD Resources
- Next Steps & Closing

Introductions: Breakout Rooms

LET'S GET TO KNOW EACH OTHER

Answer the following:

- Name and organization
- What's one thing you've done to prepare for potential wildfire smoke in your area? It could be a practical tip or a unique strategy.
- How do you engage with local residents to raise awareness about the risks of wildfire smoke and promote safety measures?

HAQR Mission



Build a community of practice



Engage communities



Support mitigation and adaptation strategies

Advance community resilience

HAQR Year in Review

- 100 members, representing 42 organizations
- 4 quarterly meetings
- Finalized Governance Structure and workplan
- Extreme heat social media campaign
- Co-chairs



Co-Chairs

Santa Clara University

C.J. Gabbe, Ph.D.

- Associate Professor, Department of Environmental Studies & Sciences
- Background in urban planning and environmental policy
- Leads research team focused on urban planning, housing policy, and climate change
- Published peer-reviewed articles related to heat (7) and urban air pollution (2)

CADRE
Collaborating Agencies' Disaster Relief Effort

Marsha Hovey, Executive Director

- Certified Emergency Manager
- Government, higher education and nonprofit
- All hazards emergency management, public education and training
- 25 years of experience

Looking Ahead to 2024

- Workplan implementation
- Workplan progress
  - SCU project
  - Extreme heat social media campaign
- Quarterly work group meetings

2024 HAQR Meetings

- February 28
- May 29
- August 28
- November 27

GROUP INFO SHARE

GROUP PHOTO

Take this opportunity to connect with other working group members to share program updates, request feedback, share opportunities, or just ask questions!

Raise Hand or Chat to share

Bay Area Air Quality Management District

Wildfire Smoke and Health Messaging
Judith Cutino, DO, PE

Bay Air Center and Community Grants
Michael Flagg
Elinor Mattern



Wildfire Smoke and Health Messaging

Heat and Air Quality Resilience Work Group

November 29, 2023

Judith Cutino, DO, PE

Health Officer

Bay Area Air Quality Management District

Presentation Outline

-What is in smoke?
  - Particle size
  - Particle Composition

-Health Impacts

-Sources of Air Quality Data

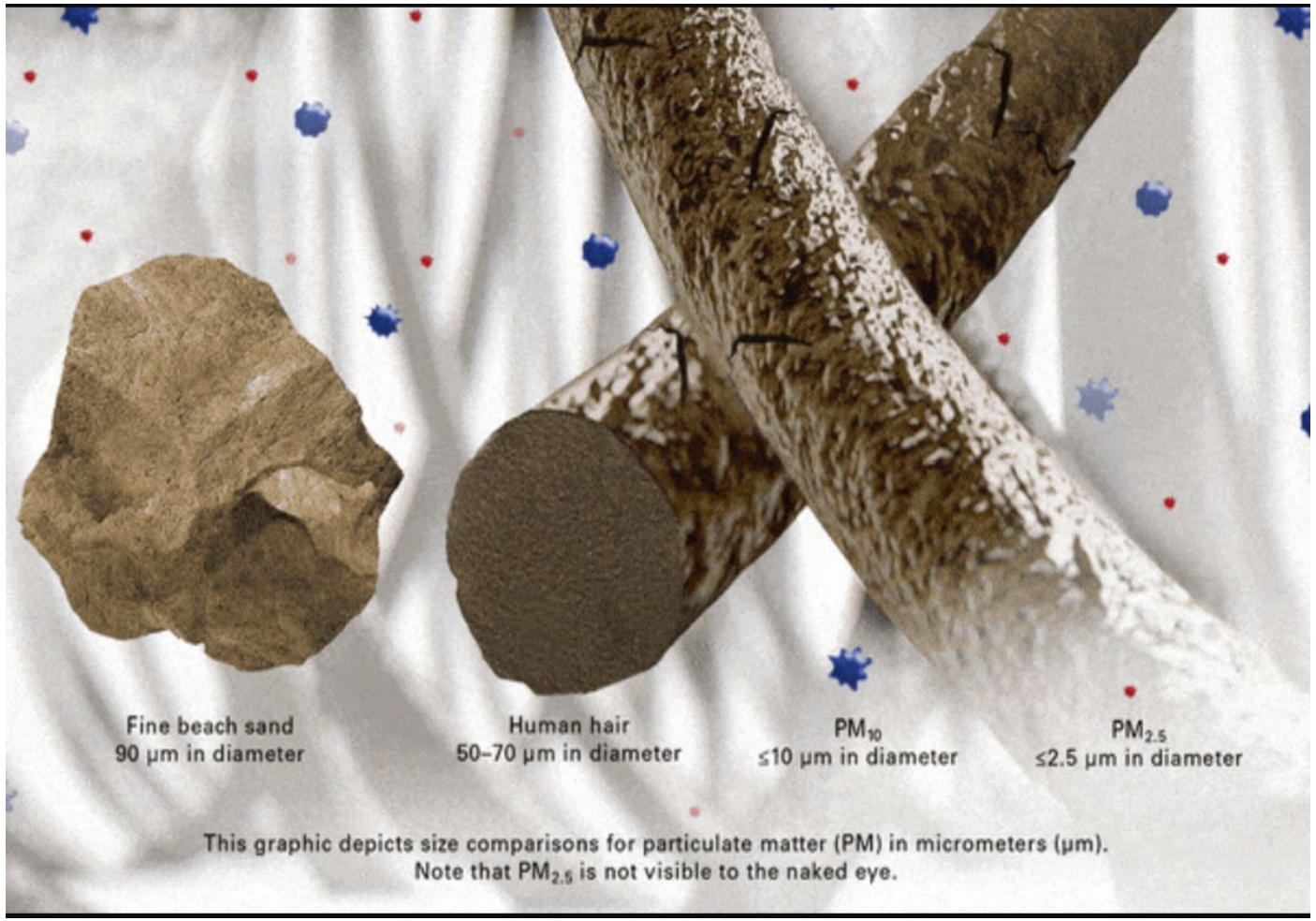
-Health Messaging
  - Wildfire Preparedness Tips
  - Mask Messaging
  - School Activity Recommendations

-Resources

PM 2.5 – Primary Pollutant in Smoke

Particulate Matter
≤2.5 microns

- Not visible to the naked eye
- May not have any odor
- Very fine particles can cross from lungs into bloodstream and affect every organ system, including the central nervous system and the brain

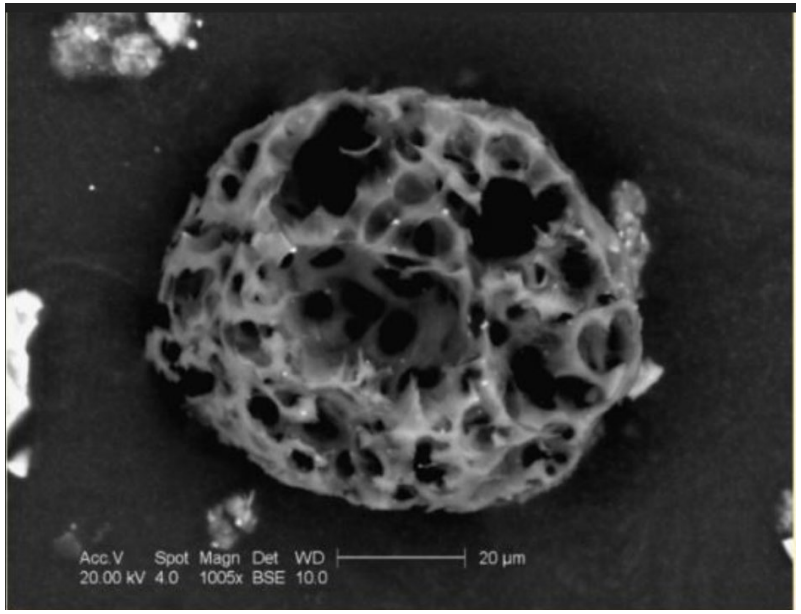


This graphic depicts size comparisons for particulate matter (PM) in micrometers (µm). Note that $PM_{2.5}$ is not visible to the naked eye.

Wildfire Smoke Composition

Wildfire particulate composition

- Fine particles and a mixture of various organic and inorganic gases
- Combustion products of trees
  - pine oils, eucalyptus
- Poison Oak and Ivy



Courtesy of CDPH Environmental Lab

Urban wildfires - potentially higher concentrations of

- Metals
  - lead, chromium, arsenic, copper, mercury from burned batteries, paint, electronics, solder, pipes
- Polycyclic Aromatic Hydrocarbons (PAHs) - decomposition of plastics
- Asbestos, Fiberglass

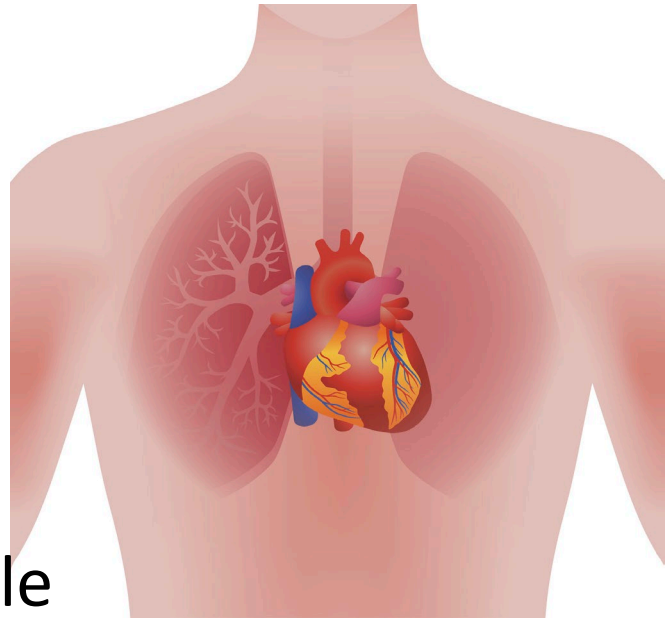
Smoke Health Impacts

Exposure to high concentrations of smoke may cause:

- Irritation of eyes, nose, throat, airway and lungs
- Chest tightness, cough, wheezing and difficulty breathing

More serious effects may include:

- Exacerbation of pre-exiting respiratory and cardiovascular disease, such as asthma, COPD, and heart failure
- Bronchitis – chronic inflammation of the airway
- Increased risk of heart attack and stroke



Children and elderly with chronic illness most vulnerable

Studies on Health Effects

- One 2018 study of the statewide 2015 wildfires found
  - Smoke exposure was associated with cardiovascular and cerebrovascular ED visits for all adults, especially those over age 65 yrs.

- Few studies available on long term health effects of wildfire smoke
  - High concentration, shorter duration exposures

- Multiple studies of health effects are currently underway



A firefighter covers his eyes as he walks past a burning hillside in Santa Rosa, California, on Monday, October 9, 2017.
Jeff Chiu/AP

Air Quality Data Sites

Recommend EPA Fire and Smoke Map

	Air Quality Data Sites	Accuracy & Quality Assurance	Sub-Hourly Air Quality	Hourly Air Quality	Block-by-Block Air Quality	Official AQI
	Air District Website	✓		✓		✓
	PurpleAir		✓	✓	✓	
	Clarity OpenMap			✓	✓	
	AirNow	✓		✓		✓
	EPA Fire and Smoke Map *(includes data from highly accurate Air District sites and less accurate low-cost sensors)*	✓	✓	✓	✓	✓

Wildfire Preparedness Tips



Weatherize your home; seal leaky windows and doors



Upgrade to an HVAC system that allows for both heating and cooling and have the mechanism to switch to RECIRCULATE to prevent smoke from entering the space



Purchase a non-ozone producing air purifier (HEPA) or a MERV 13 or greater filter for your HVAC system to create a cleaner air room



Individuals with health conditions should talk to their physicians to develop a personal plan for smoke



If you cannot seal your home, identify locations in your community that have cleaner filtered air spaces (e.g. indoor shopping malls, local libraries, cooling centers, community centers, civic buildings, local government buildings)

Mask Messaging



Staying indoors with windows and doors closed is the best way to protect your health, if temperatures allow.



Masks are not a substitute for staying indoors and must be fitted properly for best protection.



If unable to visit a cleaner air center or a cooling center, those that must be outside for extended periods of time may benefit from using a tight fitting N95 mask to reduce their exposure.

School Air Quality Activity Recommendations

PROTECT STUDENT HEALTH DURING POOR AIR QUALITY

Air quality is an important consideration for schools when planning student activities. The Bay Area Air Quality Management District is available to assist schools with understanding local air quality and actions to take to protect student health. To find out more, visit www.BAAQMD.gov or call 415-749-4900.



The following school activity recommendations are based on consultation with health researchers and several important principles drawn from recent studies.

Activity	Air Quality Level				
	LEVEL 1 **AQI 0-50** $PM_{2.5}$ 0-12 µg/m3	**LEVEL 2** **AQI 51-100** $PM_{2.5}$ 13-35 µg/m3	**LEVEL 3** **AQI 101-150** $PM_{2.5}$ 36-55 µg/m3	**LEVEL 4** **AQI 151-200** $PM_{2.5}$ 56-150 µg/m3	**LEVEL 5** **AQI 201 or higher** $PM_{2.5}$ 151-500 µg/m3 ***School districts may consider closures based on site-by-site concerns.***
Recess (15min)	No restrictions	Ensure that sensitive individuals are medically managing their condition.*	Sensitive individuals should exercise indoors or avoid vigorous outdoor activities.*	Exercise indoors or avoid vigorous outdoor activities. Sensitive individuals should remain indoors.*	No outdoor activity. All activities should be moved indoors.
P.E. (1hr)	No restrictions	Ensure that sensitive individuals are medically managing their condition.*	Sensitive individuals should exercise indoors or avoid vigorous outdoor activities.*	Exercise indoors or limit vigorous outdoor activities to a maximum of 15 minutes. Sensitive individuals should remain indoors.*	No outdoor activity. All activities should be moved indoors.
Athletic Practice & Training (2-4hrs)	No restrictions	Ensure that sensitive individuals are medically managing their condition.*	Reduce vigorous exercise to 30 minutes per hour of practice time with increased rest breaks and substitutions. Ensure that sensitive individuals are medically managing their condition.*	Exercise indoors or reduce vigorous exercise to 30 minutes of practice time with increased rest breaks and substitutions. Sensitive individuals should remain indoors.*	No outdoor activity. All activities should be moved indoors.
Scheduled Sporting Events	No restrictions	Ensure that sensitive individuals are medically managing their condition.*	Increase rest breaks and substitutions per CIF guidelines for extreme heat.** Ensure that sensitive individuals are medically managing their condition.*	Increase rest breaks and substitutions per CIF guidelines for extreme heat.** Ensure that sensitive individuals are medically managing their condition.*	Event should be rescheduled or relocated.

Resources

Air District Website:

Wildfire Safety (baaqmd.gov)

EPA Smoke-Ready Toolbox:

Smoke-Ready Toolbox for Wildfires | US EPA

Contact Information

Bay Area Air Quality Management District

www.baaqmd.gov

Judith Cutino DO, PE

jcutino@baaqmd.gov

Michael Flagg

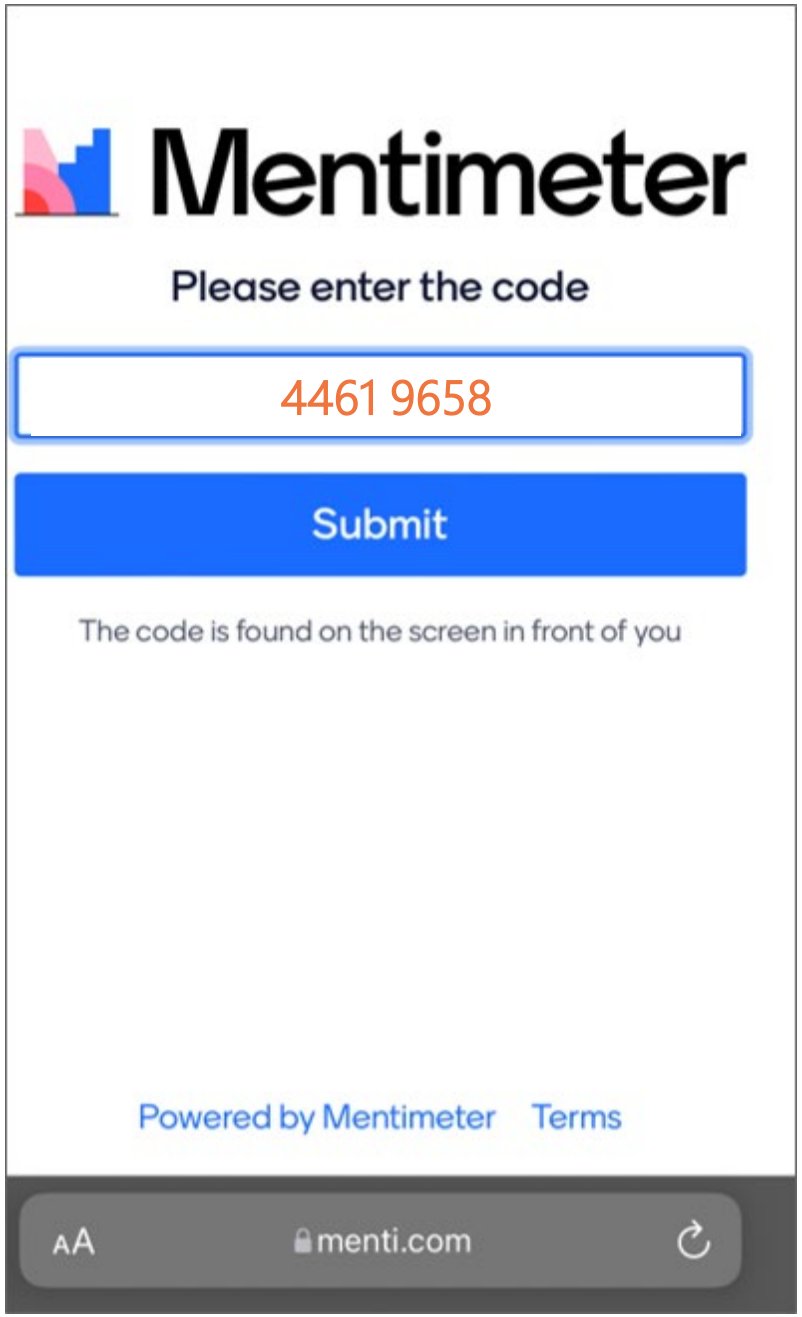
mflagg@baaqmd.gov

Elinor Mattern

emattern@baaqmd.gov

Questions?

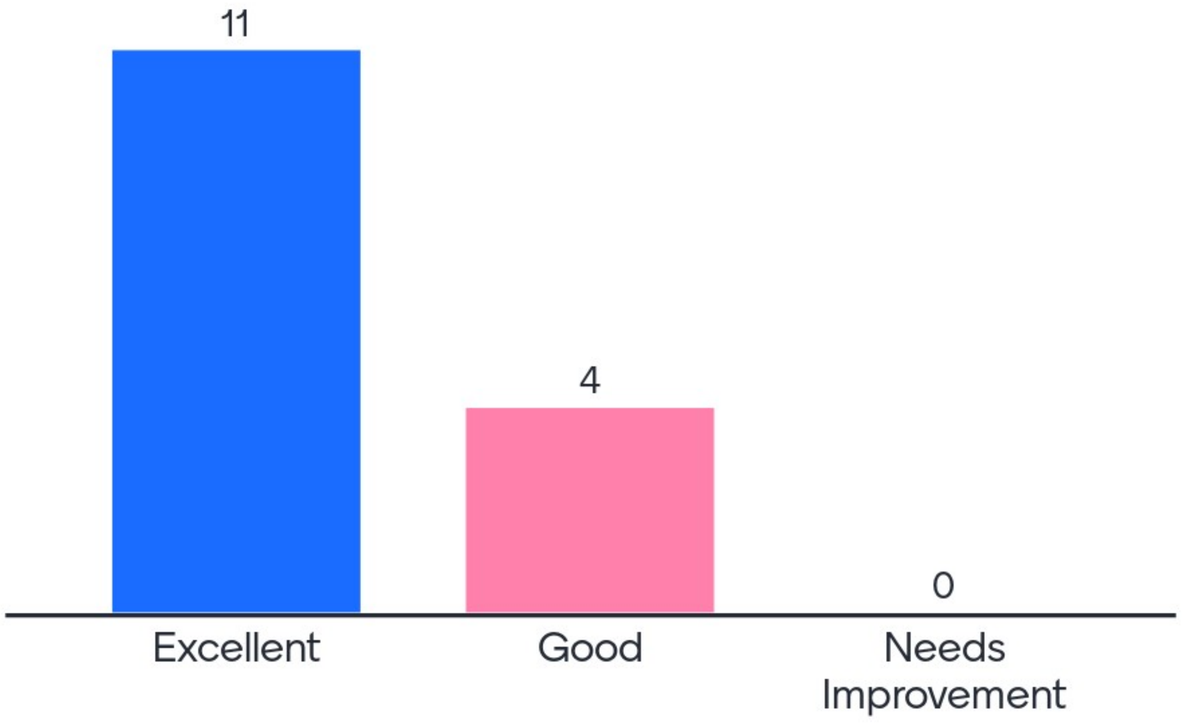




Feedback Survey

- Visit Menti.com
- Enter Code: 4461 9658 to provide your input

How would you rate the quality of today's meeting?



What future topics would you like HAQR to cover? Provide speaker recommendations.

Importance of tree canopy

+1 for tree canopy!

Points of advocacy around limiting emissions from stationary sources - BAAQMD

Community resources Planning for emergencies/outreach during emergencies

Along with tree canopy, where the biggest gaps are in tree canopy (ex. ESJ) and how to collectively address these disparities/advocate for changes

Regulatory approaches for off-road emissions

Smart Surfaces Coalition: Valuation of Multi Benefits

Policies that would protect residents and businesses from hazardous smoke

What future topics would you like HAQR to cover? Provide speaker recommendations.

House Fire Preparedness

Contributions from agriculture to AQ and PM

Legislative progress on this issue

+1 for outreach during emergencies and avoiding duplication of efforts

The lack of access to information on climate change to vulnerable populations like immigrants and refugees . Some communities first survival priority isn't climate change even though it is important.

communications and policy strategies for protecting the community from poor air quality

The equity aspects of things - which neighborhoods/areas in our county are most affected, including maps and visuals, and options for addressing. tree canopy, esp native trees for multiple benefits

Best practices from other counties/states

What future topics would you like HAQR to cover? Provide speaker recommendations.

How do we change culture of lighting our fireplaces during winter months?

How solutions can also help reduce GHG emissions

information on air quality monitors (when does it make sense to install one vs. using the Fire and Smoke Map)

Helping the unhoused and physically or mentally challenged during this climate events

Protecting children. How to help school districts with policy and procedures and programs

Incorporating HAQR into resilient communities planning

Thank you!

Co-Chairs

C.J. Gabbe
Santa Clara University
cgabbe@scu.edu

Marsha Hovey
CADRE
marsha@cadresv.org

Staff

Tonya Veitch
Office of Sustainability
tonya.veitch@ceo.sccgov.org

Erin Xavier
Public Health Department
erin.xavier@phd.sccgov.org

Next Quarterly Meeting

February 28
10:30am – 12:00pm