

# Oregon Wildfire Response Protocol for Severe Smoke Episodes

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The following agencies collaborated on this guidance document:

Oregon Department of Environmental Quality  
Lane Regional Air Protection Authority  
Oregon Department of Human Services  
Oregon Health Authority  
Oregon Occupational Safety and Health Administration  
Oregon Emergency Management  
Oregon Department of Forestry  
U.S. Forest Service Pacific Northwest Region  
U.S. Bureau of Land Management Oregon State Office



Cover photos by:  
*Oregon Department of Transportation*

Based on an agreement between the participating agencies, the original version of this multi-agency document is maintained by DEQ.

All parties may collaborate on updates.

<b>Revision History</b>	<b>Date</b>	<b>Revision Summary</b>
Version 1.0	May 28, 2013	Protocol developed
Version 1.1	Aug. 27, 2013	Agencies added, contact list updated
Version 2.0	June 3, 2014	Revised Table 4 recommended health actions, changed Visibility Index to the 5-3-1 Visibility Index, added Wildfire Communications Plan section, added Indoor Air Monitoring section, added 211info Service information, updated contact list, added out-of-state contact list
Version 3.0 to Version 5.2	June 16, 2015 – June 29, 2017	Updated contact list, added conference call info, checked and updated all website links, updated appendices and added Appendix C and D, various corrections
Version 5.3	June 28, 2018	Updated links, contacts, and information involving DEQ's upgraded AQI, use of EPA AirNow system to guide public health
Version 6	June 7, 2019	Updated links, photographs, revised the call agenda, minor edits and corrections
Version 7	June 10, 2020	Formatting updates, revisions to contacts lists, COVID-19 response and impacts, and other minor edits and corrections
Version 8	June 17, 2021	Updated Appendix E –COVID-19 and Wildfire Smoke, updates to Table 4 respirator information and other minor edits and corrections
Version 9	June 3, 2022	Revised call agenda, air quality advisory template, Appendix E respirator and mask guidance, contact information, formatting updates.
Version 10	June 30, 2023	Revised call agenda. Updated contact information. Added Appendix G for Oregon ARA welcome letter. Updated process for smoke notices that do not meet advisory thresholds. Updated Covid language.

### **Alternative formats**

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email [deqinfo@deq.oregon.gov](mailto:deqinfo@deq.oregon.gov).

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# 1. Purpose

This protocol is intended to provide guidance for the local, state, tribal, and federal agencies in Oregon who respond to severe smoke episodes caused by large or long-duration wildfires and to ensure a coordinated response to mitigate impacts on public health. This protocol also identifies other organizations and partners with whom these agencies must coordinate during severe smoke episodes. For all parties, this protocol highlights general duties and responsibilities, provides examples of agency actions and assistance needed, lists desired outcomes, and recommends public health actions based on the level and duration of smoke exposure. This protocol is intended to guide the use of resources in response to air quality due to major wildfires. It does not replace, interfere with, or limit any action taken by a public agency while performing its official duties.

# 2. Participating Agencies and Organizations

*Table 1* identifies the participants that utilize this protocol. Participating agencies, organizations and offices include but are not limited to:

**Table 1**

AGENCY OR ORGANIZATION	
<b>Federal</b>	
1. Federal Land Managers: Includes U.S. Forest Service (USFS) and U.S. Bureau of Land Management (BLM)	USFS Region 6 office in Portland or Area BLM, Oregon State Office in Portland
2. Federal Emergency Management Agency (FEMA)	Region 10 office Bothell, Wash.
3. Environmental Protection Agency (EPA)	Region 10 office in Seattle
4. National Weather Service (NWS)	Boise, Medford, Portland, and Pendleton offices
<b>Tribal</b>	
5. Tribal Government	Any tribal lands affected by wildfire smoke See <i>Appendix A</i> for contact information
<b>National</b>	
6. Air Resource Advisor (ARA)	Interagency Wildland Fire Air Quality Response Program
7. American Red Cross	Five regional offices in Oregon
<b>State</b>	
8. Oregon Department of Environmental Quality (DEQ)	DEQ Headquarters in Portland and regional offices
9. Oregon Health Authority (OHA)	Public Health Division in Portland
10. Oregon Emergency Management (OEM)	Offices in Salem
11. Oregon Occupational Safety and Health Administration (Oregon OSHA)	Oregon OSHA Headquarters in Salem, field offices around the state
12. Oregon Department of Forestry (ODF)	ODF Headquarters in Salem, field offices around the state
13. Oregon State Fire Marshal (OSFM)	Offices in Salem
14. Oregon Department of Transportation (ODOT)	Located in Salem and around the state
15. Oregon Governor’s Office	Located in Salem
16. Governor’s Office Regional Solutions Centers	Located in different regions of the state
17. 211info	Located in counties
18. Oregon Department of Human Services	Located in Salem and around the state
<b>Local</b>	
18. Local Public Health Authorities	See <i>Appendix A</i> for locations and contact information
19. Lane Regional Air Protection Agency (LRAPA)	Located in Springfield, Lane County

20. School Districts	In counties affected by wildfire smoke
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### 3. Agency Areas of Expertise and Involvement

*Table 2* identifies the general areas of expertise of each agency or organization, as an indication of the assistance that would be provided and the level of involvement anticipated. The level of involvement is relative to the severity of the wildfire smoke and the effect on air quality. Some agencies would be expected to play a leading role, requiring more frequent daily communication and coordination, while other agencies would be involved as needed.

**Table 2**

Contact Agency	General Area of Expertise/Assistance	Anticipated Level of Involvement
<b>Federal</b>		
1. Federal Land Managers (U.S. Forest Service and BLM)	Wildfire management on federal lands	Extensive – depends on size of fire, often the lead agency
2. FEMA	Federal response agency for natural disasters	Low – unless smoke levels and fire danger pose an extreme threat
3. EPA Region 10	Coordination with tribes, related to air quality on tribal lands/reservations	Low – unless smoke levels are affecting tribal lands and reservations
4. NWS	Coordinates with federal, state and tribal governments in the Pacific Northwest Area (Oregon, Washington and Idaho) as it relates to weather	Extensive – provides weather briefing during smoke coordination call and disseminates air quality alerts on public websites, social media and other NWS communication systems
5. US Forest Service (USFS)- Air Resource Advisor (ARA) – reports to Incident Command and/or Agency Administrator	Technical specialist who works with Incident Command Team during major wildfires and has expertise in air quality forecasting, monitoring, assist with public health messaging, transportation safety, and firefighter safety	Extensive – these positions provide assistance during incidents, and facilitate state response to air quality smoke impacts from major wildfires See Appendix G for an Oregon ARA welcome packet.
<b>National</b>		
6. American Red Cross	Provides aid and assistance for natural disasters, mass care support for sheltering, feeding and distributing relief supplies	Depends on severity of smoke impact and risk to public health
7. 211info	Provides a statewide “go-to public phone number” for health information about wildfire smoke impacts	Depends on severity of smoke impact and risk to public health
<b>Tribal</b>		

Contact Agency	General Area of Expertise/Assistance	Anticipated Level of Involvement
8. Tribal Government	Coordinates with other agencies and national partners to determine health risk from smoke, need to cancel outdoor events, tribal safety issues, and notify local businesses. Shares information with community about health effects, mitigation, strategies, and notify public and media of health risks from smoke.	High – if wildfire impact is severe and smoke is affecting tribal lands/reservations
<b>State</b>		
9. DEQ (For wildfire smoke affecting Lane County, contact LRAPA. See #19 above and Appendix A #13)	Monitors air quality in the state*, determining if health standards are being exceeded, identifying areas at greatest risk, public/media outreach and coordination with Federal Land Managers, OHA, ODF, county health departments, others as needed (*except Lane County see LRAPA)	Extensive – during periods of elevated smoke levels hosts smoke coordination calls, provides air quality forecasting and leads advisory development
10. OHA	Advises state, federal, tribal, and local authorities on health risk from smoke and potential public health interventions to mitigate it. Assists DEQ, Oregon OSHA, and local and tribal health departments in communication and outreach. Assesses health impacts as indicated by the situation.	Extensive- depends on severity and extent to which local and tribal health officials need assistance, or whether a local or tribal health authority has primary jurisdiction in the affected areas, and provides hosting support.
ODHS	Mass care sheltering, coordination with Red Cross on mass care needs, community cleaner air spaces (shelter piece, not indoor AQ)	Varies- Depends on severity and duration of smoke event and level of activity related to any displacements caused by wildfire evacuations. Helps build local capacity for cleaner air spaces in community/public spaces and other types of mass care shelters.  Can activate all-hazards contract with 211INFO.  Ensures local partners inform 211 of available cleaner air spaces via grant mechanisms.  May be able to deploy air scrubbers to affected communities.
11. OEM	Coordinates and facilitates emergency planning, with state emergency support function, and local emergency services agencies and organizations	Low – unless smoke levels and fire danger pose an extreme threat or there is a specific request by local emergency management agencies for state assets.  High – involvement if Governor declares state of emergency.

Contact Agency	General Area of Expertise/Assistance	Anticipated Level of Involvement
12. Oregon OSHA	Address health and safety of workers and state/private firefighters through enforcement of <a href="#">Oregon OSHA's permanent rules</a> for protection from wildfire smoke and/or consultation. Can assist in evaluating air quality concerns in employment settings.	Depends on severity and specific requests for worker protection
13. ODF	Provide current fire operations and activity information from Pacific Northwest Incident Command Group meetings to DEQ. Provides incident information for fires on ODF protected land.	Variable – depends on fire location
14. State Fire Marshal	Lead agency for response to structural protection for Conflagrations in Wildland Urban Interface Fires. Coordinates the same as ODF to provide the Incident Management Team (IMT) updates as needed to required agencies.	Low – primary response to fire danger and suppression, less on smoke risk
15. ODOT	Provides safety information for roads and possible closures, travel hazards. Provides traffic management where needed.	Moderate – provides safety updates on calls and provides similar information for the smoke blog
16. Oregon Governor's Office	Coordinate with multiple agencies, especially if Governor declares a state of emergency	Low – updated on as-needed basis, unless state of emergency is declared
17. Governor's Office, Regional Solution Centers	Coordinate with multiple agencies, especially if Governor declares a state of emergency	Low – updated on as-needed basis, unless state of emergency is declared
18. Oregon Department of Land Conservation and Development (DLCD)	Help to coordinate on Natural Hazards Mitigation with Tribes and local agencies or counties	Low – primary response is to help Tribes and agencies prepare plans and coordinate activities in anticipation of emergencies.
<b>Local</b>		
19. Local Public Health Authorities (LPHAs)	Notify public and media of health risk from smoke. Coordinate with DEQ, OHA, Federal Land Managers and Oregon OSHA determining health risk to community.	Extensive – during periods of unhealthy to hazardous smoke levels. Can provide current information on local smoke impacts.
20. School Districts	With assistance, determine if student health is at risk, the need to cancel school events or announce school closures	Low – as-needed basis during periods of unhealthy to hazardous smoke levels
21. City and Local Government	With assistance help coordinate public safety, need to cancel outdoor events, notify local businesses, alert fire and police to the health risks.	Low – as-needed basis during periods of unhealthy to hazardous smoke levels.

Contact Agency	General Area of Expertise/Assistance	Anticipated Level of Involvement
22. ODHS Community cleaner air space grantees	Information about their own cleaner air space's location, hours of operations, contact, etc.	Varies- Involvement will depend on organizational capacity, duration and severity of smoke event. Minimally responsible for ensuring 211 has space information,

#### 4. Agency Actions and Desired Outcomes

*Table 3* describes the different actions needed during major wildfires, the agency or organization expected to take such action and the desired outcome.

**Table 3: Agency Actions and Desired Outcomes**

Action Needed	Lead Agency and Action Taken	Desired Outcome
<b>1. Air Monitoring</b>		
Measuring ambient air quality	Mostly <b>DEQ</b> as lead agency, but Air Resource Advisors ( <b>ARA</b> ) may provide additional monitoring equipment via national cache resources and assist in deployment and data collection	Ability to track ambient air quality levels in populated areas as well as in communities receiving the heaviest smoke impact, and identify smoke-free areas where air quality is good
Indoor air quality exposure	<b>Oregon OSHA</b> is lead agency to evaluate air quality concerns for workers. <b>DEQ</b> and <b>OHA</b> can provide advice to schools and non-occupational settings.	Ability to monitor indoor smoke levels in work environments and schools
<b>2. Smoke and Weather Forecasting</b>		
Weather Forecast	<b>NWS</b> (meteorologists) is the lead agency. <b>DEQ</b> assists in coordination. <b>NWS</b> can also be contacted to provide “spot weather forecasts” for wildfire.	Provide advance notice of possible smoke movement and impacts, improve public notification, reduce risk of public exposure to high smoke levels
Smoke Forecasting	<b>DEQ</b> provides smoke forecasting and compares estimates to advisory threshold. <b>ARAs</b> provide daily smoke outlooks for the areas adjacent to their assigned fires.	Complementary to above
<b>3. Issuing Health Warnings</b>		
Provide public with frequent smoke updates on potential health risk and recommended public health actions via the web and other media	Coordination between the <b>Incident Management Team, DEQ, ARA, OHA, Tribes, LPHA</b> , local government, and 211 info. Assistance from federal land managers on fire status, and from wildfire forecasting.	Frequent coordinated updates provided to the public via Oregon Smoke Blog, DEQ, OHA, local government websites, press releases and media outreach. 211 info is provided current health-related information



Action Needed	Lead Agency and Action Taken	Desired Outcome
Provide advisories to specific areas and on multiple agency media platforms	Coordination between NWS offices, <b>DEQ, LRAPA, SWCAA</b> , Dept. of Ecology, and other local air programs and local public health authorities	Discuss current AQ conditions, forecasted smoke travel, location of likely impacts and duration to coordinate advisory messaging on NWS platforms and AQ Agency information outlets
<b>4. Website Management</b>		
Updating the Oregon Smoke Blog and DEQ social media (see description under section 6)	Blog <b>updated by DEQ Public Affairs</b> staff on behalf of protocol participants, and local and tribal partners	Provide the public with comprehensive “one-stop” website/social media on wildfire status, air quality levels, health risk, cleaner air spaces, press releases and other critical info
Updating DEQ, OHA, ODF and local websites	Managed by respective agency and supplements the Oregon Smoke Blog	Complements the above website
<b>5. Public Actions</b>		
Cancel or modify public events, outdoor and business activities	Decision made within affected jurisdiction, by <b>local or city government or local and tribal public health authorities</b> in consultation with local health authorities, and as needed, DEQ, ARA, OHA, federal land managers, and possibly Oregon OSHA.	Prompt action taken, via notification of media, 211 info, and posting info on Oregon Smoke Blog and other websites
Consult with schools on limited hours or closure. Decisions about protecting schools or other public buildings from smoke intrusion	Decision made within affected jurisdiction, by <b>local or tribal public health authorities, or city government</b> in consultation with OHA, ARA, local public health, DEQ, or Oregon OSHA as needed.	Identification of measures to protect schools and users of public buildings from smoke
Set up general population shelters	ODHS and <b>Red Cross</b> may support the setup and management of general population shelters based on decisions by local health officials.	When determined necessary, general population shelters will be established and opened in coordination with local public health authority and emergency management

Action Needed	Lead Agency and Action Taken	Desired Outcome
Establish or identify public cleaner air spaces	Decisions made within affected jurisdiction, by <b>local or tribal public health authorities</b> with support from ODHS and in consultation with DEQ, ARA, OHA, or Oregon OSHA as needed.	When determined necessary, prompt action taken to set up or identify cleaner air spaces, using guidance for “Identification of Cleaner Air Spaces for Protection from Wildfire Smoke” <a href="https://www.oregon.gov/oha/PH/PR/EPAREDNESS/PREPARE/Documents/IdentificationOfCleanAirShelters.pdf">https://www.oregon.gov/oha/PH/PR/EPAREDNESS/PREPARE/Documents/IdentificationOfCleanAirShelters.pdf</a> . Some communities may have a Community Response Plan for prescribed fires. These may contain guidance on setting up cleaner air spaces that can be applied to wildfires.
Recommended evacuation/relocation of sensitive populations or populations in general	Decision made at local level, by health officials and tribal/local government ( <b>Sheriff or local emergency management</b> ), <b>OEM</b> , in consultation with DEQ, ARA, OHA, ODHS, federal land managers and possibly Oregon OSHA.	Prompt action taken if dangerous smoke levels are expected to persist for a prolonged period. Requires close communication with DEQ, OHA, ODHS, federal land managers, OEM, Oregon OSHA, 211info, and possibly Red Cross, State Fire Marshal and State Police.

## 5. Recommended Public Health Actions, Based on Level and Anticipated Duration of Smoke Exposure

Wildfire smoke is a mixture of gases and fine particles that can irritate eyes and respiratory systems, worsen chronic heart and respiratory diseases, and precipitate other poor health outcomes. The quantity and duration of smoke exposure, as well as a person’s age and degree of susceptibility, play a role in determining if someone will experience smoke-related health effects. Persons with pre-existing health conditions such as asthma or other chronic respiratory conditions and cardiovascular disease, people older than 65 years, infants and children, pregnant women, and smokers are particularly sensitive to smoke. Individuals who are more likely to be exposed to smoke for long periods of time are also more likely to experience health effects. These include people who work outdoors such as migrant and seasonal farm workers; those who live outdoors or are experiencing homelessness; those with access and functional needs; and those with low income who are more likely to live in housing that does not provide adequate protection from smoke. Also, communities of color and those with lower income tend to experience these vulnerabilities more often due to inequities in social determinants of health. Both sensitivity and vulnerability should be considered in providing alerts and conducting outreach.

Particulate matter, small airborne particles, in smoke poses a serious risk to public health. The potential health effects vary depending on the size of the particles and composition of the smoke. Particles larger than 10 micrometers usually irritate eyes, nose, and throat. Particles 10 micrometers and smaller (PM10) are inhalable and can be deposited in the upper airways of the lungs and cause tissue damage and lung inflammation. Particles 2.5 micrometers and smaller (PM2.5) can be inhaled deeply into the lungs and enter the bloodstream, increasing the risk of cardiovascular and respiratory problems. When smoke levels are high, even healthy people may experience symptoms.

*Table 4* is designed for use by affected jurisdictions in consultation with the Oregon Department of Environmental Quality, Oregon Health Authority and other parties to this protocol. The table identifies recommended public health actions based on the concentration and expected duration of smoke exposure. The Air Quality Index levels in *Table*

4 are based on the U.S. Environmental Protection Agency’s NowCast method and integrated into the AirNow network. They account for the level of key air pollutants over the prior 12 hours, as well as the most recent rapid increases or decreases in air pollution. Decisions about which public health actions to recommend are based on monitoring data and the projected smoke duration. The duration of smoke exposure noted in the table uses a cut-off of twenty-four hours as the basis for two sets of recommended health actions.

Recommendations in **Table 4** are for cumulative smoke exposure time. The recommended actions for each increasing level and duration of exposure should be followed in addition to the lower Air Quality Index (AQI) level recommendations unless the listed actions supersede previous ones.

In the absence of any PM2.5 monitoring data, a visual evaluation can be made by using the visibility index (based on the viewing distance) in the column next to the Air Quality Index category. This index is referred to as the “[5-3-1 Visibility Index](#)” for estimating smoke levels, as described further below **Table 4**. Both the Air Quality Index category and 5-3-1 Visibility Index are intended to be used together to identify the public health risk and mitigation actions.

**Table 4**

Air Quality Index Category	5-3-1 Visibility Index <sup>1</sup>	Recommended Public Health Actions	
		Projected Smoke Exposure Under 24 Hours	Projected Smoke Exposure Over 24 Hours
<b>Good/Green</b> (0-50)	<b>&gt; 5 Miles with no noticeable haze in the air</b>	<ul style="list-style-type: none"> <li>• If a smoke event is forecasted in your area we suggest reviewing the following: this Protocol, the <a href="#">Crisis and Emergency Risk Communication Toolkit for Wildfires</a><sup>2</sup>, Frequently Asked Questions about Wildfire Smoke and Public Health document, and more health tips on the Oregon Public Health Division webpage.<sup>3</sup></li> <li>• The Oregon Smoke Blog has information about the latest air quality and other wildfire information: <a href="http://oregonsmoke.org">http://oregonsmoke.org</a></li> </ul>	
<b>Moderate/Yellow</b> (51-100)	<b>5-15 Miles with noticeable haze in the air</b>	<ul style="list-style-type: none"> <li>• Distribute information (i.e., FAQs<sup>2</sup>) to public health partners and the public</li> <li>• Identify and provide information to vulnerable populations</li> <li>• Refer people to Oregon Smoke Blog for more information</li> <li>• Recommend sensitive groups use an air cleaner at home during wildfires<sup>2</sup></li> </ul>	<p><i>Follow recommended actions to the left and in the rows above, plus:</i></p> <ul style="list-style-type: none"> <li>• Respond to media inquiries. (Use the Crisis and Emergency Risk Communication toolkit<sup>2</sup> for guidance)</li> </ul>
<b>Unhealthy for Sensitive Groups/ Orange</b> (101-150)	<b>3-5 Miles</b>	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> <li>• LPHA issues a press release stating recommended protective actions for sensitive and vulnerable groups and encouraging them to reduce exposure. Use the Crisis and Emergency Risk Communication toolkit and FAQs<sup>2</sup> document for guidance and see Appendix B for a template.</li> <li>• If school is in session or an outdoor function with children is planned, refer to <a href="#">Public Health Guidance for School Outdoor Activities during Wildfire Events</a><sup>2</sup></li> </ul>	<p><i>Follow actions to the left &amp; above, plus:</i></p> <ul style="list-style-type: none"> <li>• In the release, include consideration of sensitive groups leaving area until air quality improves or if that is not feasible, using an air cleaner at home<sup>4</sup> or spending time in a cleaner-air space in the community (e.g., air-conditioned library).</li> <li>• Consider opening cleaner-air spaces for sensitive and vulnerable groups.</li> <li>• DEQ will review conditions and may issue an air quality advisory.</li> </ul>

Air Quality Index Category	5-3-1 Visibility Index <sup>1</sup>	Recommended Public Health Actions	
		Projected Smoke Exposure Under 24 Hours	Projected Smoke Exposure Over 24 Hours
<b>Unhealthy/Red</b> (151-200)	<b>1-3 Miles</b>	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> <li>• Consider cancelling public events held outdoors.</li> <li>• Recommend the public limit strenuous outdoor activities.</li> <li>• Recommend that smoke sensitive groups shelter in place using an air cleaner<sup>4</sup> or consider leaving area until air quality improves. If they can't, recommend spending time in a cleaner-air space in the community (i.e., air-conditioned library)<sup>2</sup> or sheltering in place at home.</li> <li>• Recommend groups at higher risk of exposure to smoke limiting outdoor labor, improve use of adequate PPE and seek cleaner air sheltering</li> </ul>	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> <li>• Consider opening and publicizing cleaner-air spaces for sensitive and vulnerable groups. While there is community spread of respiratory illnesses (e.g. Influenza, RSV, COVID-19), accommodate appropriate mitigation. (e.g. physical distancing in such spaces).</li> <li>• Review health benefits for sensitive groups of leaving area until air quality improves or using an air cleaner, and that intermittent time in cleaner-air spaces or sheltering in-place without an air cleaner might not be as protective.</li> <li>• Provide information on the benefits and limitations of respirators; ensure information on proper use is available (e.g. EPA palm card and Oregon OSHA video)<sup>2</sup> for those choosing to wear one.</li> </ul>
<b>Very Unhealthy/Purple</b> (201-300)	<b>1 Mile</b>	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> <li>• Cancel outdoor events.</li> <li>• If school is in session, measure indoor air quality if possible, discuss school closure with school administrators.</li> <li>• Recommend shelter-in-place for general population.</li> <li>• Share information about periods of improved air quality to guide essential outdoor activity and ventilation of dwellings (refer to FAQs<sup>2</sup> for more information).</li> </ul>	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> <li>• Open and publicize cleaner-air spaces for the public [While there is community spread of respiratory illness, accommodate physical distancing in such spaces]. Consider strategies for adequate air changes inside including the use of portable or integrated air cleaners.</li> <li>• Share information about periods of improved air quality to guide essential outdoor activity and ventilation of dwellings (refer to FAQs<sup>2</sup> for more information).</li> </ul>
<b>Hazardous/Dark Purple</b> (>300)	<b>&lt;1 Mile</b>	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> <li>• Recommend voluntary evacuation for sensitive and vulnerable groups</li> </ul> <p>Provide information on the benefits and limitations of respirators; ensure information on proper use is available (e.g. EPA palm card and OR OSHA video<sup>2</sup>) for those choosing to wear one.</p>	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> <li>• Open and publicize cleaner-air spaces for the public [While there is community spread of respiratory illness, accommodate physical distancing in such spaces] Consider strategies for adequate air changes inside including the use of portable or integrated air cleaners.</li> </ul>

<sup>1</sup>For use of the **5-3-1 Visibility Index**, see below. The visibility test is not appropriate or effective in areas with high humidity, such as in Western Oregon near or on the coast, where water vapor (fog) may limit visibility.

<sup>2</sup> Crisis and Emergency Risk Communication Toolkit for Wildfires: [www.healthoregon.org/cerc](http://www.healthoregon.org/cerc)

The kit includes many tools including:

- FAQs available in multiple languages
- Important Public Health Guidance for School Outdoor Activities during Wildfire Events
- Guidance for clinicians “Clean Air at Home” a fact sheet about using air filters at home. Guidance for the Identification of Cleaner Air Shelters/Spaces for Protection from Wildfire Smoke.
- EPA Palm Card

- *Link to OR OSHA video on how to wear respirators* [www.youtube.com/watch?v=ucmx\\_hj1SW8](https://www.youtube.com/watch?v=ucmx_hj1SW8)

*Most tools are available in ten or more languages.*

<sup>3</sup> *Public Health Division wildfires webpage:* [www.healthoregon.org/wildfires](http://www.healthoregon.org/wildfires).

<sup>4</sup> *Detailed guide to air cleaners (EPA):* [https://www.epa.gov/sites/default/files/2018-11/documents/indoor\\_air\\_filtration\\_factsheet-508.pdf](https://www.epa.gov/sites/default/files/2018-11/documents/indoor_air_filtration_factsheet-508.pdf) [https://www.epa.gov/sites/production/files/2018-07/documents/guide\\_to\\_air\\_cleaners\\_in\\_the\\_home\\_2nd\\_edition.pdf](https://www.epa.gov/sites/production/files/2018-07/documents/guide_to_air_cleaners_in_the_home_2nd_edition.pdf) [https://www.airnow.gov/sites/default/files/2020-10/indoor-air-filtration-factsheet\\_1.pdf](https://www.airnow.gov/sites/default/files/2020-10/indoor-air-filtration-factsheet_1.pdf)

Considerations that may influence implementation of the above mitigating actions:

- Clear/predictable fluctuations in air quality throughout the day can allow for modifications in the recommendations from the above table. For example, schools could delay recess instead of canceling it if there is a pattern of clearing in the afternoon. Also, if cleaner air spaces are provided, they should be open and available at the times of day that smoke is heaviest, including at night.
- If smoke is predicted to be heavy for short durations (i.e., a few hours) the public health messaging should encourage people to avoid spending time outdoors during those times.
- Indoor air quality may be poor in older dwellings. These may include schools, community centers, nursing homes, or group homes. When air quality is “unhealthy” for an extended duration, it may be worthwhile to assess indoor air quality for these and other types of facilities where people who are sensitive to smoke live or stay. Oregon OSHA can assist employers in assessing indoor air quality. Consider strategies for adequate air changes inside including the use of portable or integrated air cleaners. Consider HVAC or other systems to control indoor air temperature during smoke events that coincide with high temperatures.
- The ability of the jurisdiction to implement smoke guidance and respiratory guidance simultaneously. See CDC's COVID-19 Ventilation in Buildings webpage and OHA's COVID-19 webpage for more detailed information and guidance <https://govstatus.egov.com/OR-OHA-COVID-19>. It must be stressed that NIOSH-approved N95 and P100 respirators and comparable or better devices are currently the only masks that may offer some protection from fine particulate matter (PM<sub>2.5</sub>) in the air or from smoke. Common face coverings like cloth masks and dust masks offer little or no protection from PM<sub>2.5</sub> in these situations.

### Using the 5-3-1 Visibility Index

Since wildfires often occur in remote areas, air monitoring equipment may not be available. Smoke levels can rise and fall rapidly depending on weather conditions including wind direction. Making visual observations using the 5-3-1 visibility index is a simple way to estimate smoke levels and what precautions to take, as noted in **Table 4**. While this method can be useful, you should always use caution and avoid spending time outside if visibility is limited, especially if you are sensitive to smoke.

The procedure for using this visibility index is as follows:

1. Determine the limit of your visual range by looking for distant targets or familiar landmarks such as mountains, mesas, hills, or buildings at known distances. The visual range is that point at which these targets are no longer visible. Generally, if you can clearly see the outlines of individual trees on the horizon it is less than five miles away.
2. Ideally, looking at distant targets should be done with the sun behind you. Looking into the sun or at an angle increases the ability of sunlight to reflect off the smoke, making the visibility estimate less reliable and appearing worse than it is.
  - A. Once distance has been determined, follow this simple guide: If visibility is well over five miles and with no noticeable haze in the air, the air quality can be considered generally good.
  - B. Even if visibility is five miles away but generally hazy, air quality could be considered moderate and beginning to deteriorate, and is generally healthy, except possibly for smoke-sensitive persons. The general public should avoid prolonged exposure if conditions are smoky to the point where visibility is closer to the five-mile range. See **Table 4**.

- C. If under five miles, the air quality is unhealthy for young children, adults over age 65, pregnant women, and people with heart or lung disease, asthma, or other respiratory illness. These people should minimize outdoor activity. See *Table 4*.
- D. If under three miles, air quality is unhealthy for everyone. Young children, adults over age 65, pregnant women, and people with heart or lung disease, asthma, or other respiratory illness should avoid all outdoor activities. See *Table 4*.
- E. If under one mile, the air quality is hazardous. Everyone should avoid all outdoor activities. See *Table 4*.

## 6. Oregon Smoke Blog Website

The Oregon Smoke Blog ([www.oregonsmoke.org](http://www.oregonsmoke.org)) provides the public current air quality and health information on smoke impacts from wildfires. It features a map that shows active fires and current air quality readings from DEQ's network of air quality monitors and provides links to various agency websites and important guidance documents. This blog is managed by DEQ with assistance from the U.S. Forest Service. Federal and state agencies, and local and tribal public health authorities may contribute content through DEQ. DEQ also maintains a related Twitter account (@ORSmokeInfo) to distribute information. The schedule and contact information for DEQ Public Affairs staff during wildfire season are in *Appendix D*.

## 7. Annual Pre-Wildfire Season Conference Call

Each year prior to the summer wildfire season, in late May or early June, representatives from the participating agencies and organizations listed in this protocol will hold a conference call to prepare for the upcoming season. The purpose of this call is to review this protocol, discuss any changes or specific preparation needs for the summer, and update the contact list of staff expected to be using this protocol if major wildfires occur. This contact list is provided in *Appendix A*, or the main call distribution list will be used.

## 8. As-Needed Wildfire Conference Calls and Briefings

- a. Conference calls will be held as needed during major wildfires to brief the parties identified in this protocol. These conference calls and briefings can be requested by any party, with concurrence then sought out amongst OHA, DEQ, USFS and NWS as available, and will usually take place in the morning. Unless otherwise announced, conference calls will be held on an as-needed basis from 8:30-9:30 A.M.

The calls will include updates on the status of major on-going wildfires and provide an opportunity to discuss current air quality conditions, smoke forecasts, local health impacts, recommended public actions, communications, emergency actions (such as evacuation) and any other relevant topic. These briefings will include a wildfire status update from public information officers (if available) associated with Incident Command and any Air Resource Advisor assigned to the wildfire.

The lead agencies hosting these calls will be DEQ with OHA providing backup as needed. For major wildfires in neighboring states (Washington, Idaho, Nevada, and California) that are affecting Oregon, the daily briefing may include the appropriate contacts in those states that have essential information. In situations where a smaller group conference call is needed, such as between state and local health officials to discuss specific local public health issues, or with DEQ to discuss air quality levels in areas being heavily affected by wildfire smoke, the calls will be convened as needed. Requests for such calls should be made to either DEQ or OHA, depending on the primary topic of concern.



- b. If an advisory is being extended and no additional areas are being impacted, decisions regarding the extension may be done through email communications instead of by hosting a call. If an advisory is being extended with the same or fewer areas of impact, decisions regarding the extension may also be limited to emails. If new areas are being considered for inclusion in the advisory extension, an advisory call will be hosted. Advisory extension notices will be sent by DEQ PIO's using the same steps as a full advisory. Local jurisdictions should continue to follow Table 4 and consult their smoke response plans in these situations to guide their local communication efforts.
- c. When wildfire smoke is present, but air quality is not impacted to the extent that a DEQ-issued air quality advisory is warranted, DEQ, OHA, and/or local public health authorities may determine public messaging is warranted. DEQ messaging may include social media posts but will not include a full DEQ advisory or posting to the DEQ Smoke Blog. Local jurisdictions should continue to follow Table 4 and consult their smoke response plans in these situations to guide their local communication efforts.

Below is an agenda outline for the calls. The order of the agenda may be changed to accommodate those who have time constraints. An email announcing the call will be sent by the call host to the participants the day before the call. Hosts will try to have a notification out by 3:30 the day prior to, however, in rapidly evolving conditions notification may come after hours. Any participant who wishes to suggest additional discussion topics for the agenda should inform the host in advance. Unless previously arranged, discussions should be limited to the participating protocol entities.

**Oregon Wildfire Conference Call, Briefings Agenda Example**  
**8:30 –9:30 a.m. Pacific Time**

<b>AGENDA</b>	
<b>8:30 – 9:30 a.m. (Pacific)</b>	
<b>Topic</b>	<b>Anticipated Discussion Leader</b>
Opening/Intro	Host
Statewide Weather Briefing	NWS
The current fire situation (location, size, etc.) and maps showing fire locations and detail as available	Incident Command PIO, ARA, USFS staff
Smoke and Air Quality Forecast (Location, duration, and concentration)	DEQ
Current Epidemiological Report (Focus on Impact Areas)	OHA
Community needs and any emergency issues for all to be aware	OEM/ODOT/OHA/OSHA/Tribes/LPHA Note that local entities (e.g.- schools) are asked to route updates or questions through their local public health agency for health concerns and county emergency management for other concerns.
Air Quality Advisory Development and Public Health & Safety Message Coordination (yes/no, impacted area, duration, etc.). Plan for issuing advisory and news release. Supplemental information for smoke blog, Tribes and local public health authority press releases.	DEQ with additional on-the ground input from: tribal governments and LPHA DEQ PIO with OHA PIO, ODOT PIO if issuing jointly
Set date and time of next call as needed and adjourn	Host

## 9. Air Quality Advisory Coordination with National Weather Service

The National Weather Service offices and air quality agencies in Oregon and Southwest Washington developed a procedure for the coordination of air quality events (advisories and alerts) and the associated messaging. Events which may create the need for a coordination call between the National Weather Service offices and air quality agencies include:

- Forest fires and associated transport of smoke
  - Air quality approaching unhealthy levels
  - Weather pattern conducive to deteriorating air quality
1. During weekends if conditions improve to the point of good or a green AQI category and are expected to remain stable for an area with an existing advisory, the National Weather Service offices considering dropping or expiring their advisory will attempt to contact the responsible air quality agencies to evaluate the situation. If no contact can be made, the National Weather Service offices can proceed to stop messaging and drop the advisory from their dissemination systems. Also, if conditions are deteriorating to unhealthy levels over the weekend and there might be a need for air quality agencies to issue an advisory, either the National Weather Service offices or air quality agency point of contact can coordinate the need for an air quality alert. The National Weather Service offices will not originate an advisory for smoke impacts on their own.
  2. The National Weather Service system of messaging includes web services, email distribution, social media, National Oceanic and Atmospheric Administration (NOAA) Port, NOAA Weather Wire and several others that reach the public, broadcast media, social media outlets, emergency managers, and many more. The air quality agencies agree to email the press release containing the air quality advisory message to the National Weather Service offices. The National Weather Service agrees to disseminate air quality advisories from the air quality agencies as a National Weather Service product. National Weather Service offices will give attribution to the air quality agency and include a link to the air quality website in the product. The National Weather Service product amplifies the message from the air quality agencies to further reach the public with important information involving weather.

## 10. Indoor Air Monitoring Equipment

Wildfire smoke can affect indoor air quality. Research has shown that when there are heavy outdoor smoke levels, a significant amount of smoke can still infiltrate indoors, even when windows and doors are closed. Many commercial buildings and schools mechanically draw in the outdoor air through air filtration systems. However, standard heating and cooling air filters will not remove most of the ultrafine smoke particles. More information about the use of air filters, cleaners and other ways to reduce indoor smoke levels can be found in the document cited in **Section 11** below [Wildfire Smoke: A Guide for Public Officials \(2019\)](#).

There are different types of indoor air monitors that can be used to indicate the potential health risk when indoors. This monitoring equipment is generally focused on PM2.5 but may also detect carbon monoxide and other toxic gases. Other features include measuring temperature and relative humidity. Indoor monitoring equipment is typically less expensive than outdoor equipment, is relatively low maintenance, and can provide the same real-time measurements in micrograms per cubic meter, via handheld or portable monitors. These monitors can be purchased, or in some cases rented, during wildfires. US EPA has additional background on air quality sensors and monitors: <https://www.epa.gov/indoor-air-quality-iaq/low-cost-air-pollution-monitors-and-indoor-air-quality>. As noted in Table 3 of the protocol, DEQ is responsible for monitoring air quality outdoors and does not have equipment for indoor air monitoring. For questions about employee health and possible indoor air monitoring in the workplace, contact an Oregon OSHA field office ([Oregon OSHA Field Office](#)) or visit [OR-OSHA Wildfires: Addressing Worker Concerns](#).



## 11. Other References, Resources, and Links

**Wildfire Smoke: A Guide for Public Officials.** The smoke exposure levels listed in Table 4 are adapted from the 2019 guidance document [Wildfire Smoke: A Guide for Public Health Officials \(2019\)](#). This document is currently used in many states as a reference guide for how public agencies can best protect public health during wildfires.

In addition to providing background information on the composition of smoke, potential health effects, and recommended actions, it contains specific strategies on how to reduce smoke exposure, such as indoor air filters and cleaners, use of masks and respirators, setting up cleaner air spaces, and examples of public service announcements for wildfire. This document is referenced here as general guidance to provide additional information, and like this protocol, is not intended to replace, interfere with, or limit any action taken by a public agency in the course of performing its official duties, nor does it represent a legally binding document.

**Wildfire-Related Websites.** In addition to the [Oregon Smoke Blog](#), these web links can provide current information on wildfire and smoke:

- **InciWeb (Incident Information System)** – information on fires in the nation and the Northwest: <https://inciweb.nwcg.gov/>
- **Northwest Coordination Center** – information on fires in the NW: <https://gacc.nifc.gov/nwcc/index.aspx>
- **Oregon Department of Forestry** – information on fires handled by ODF: [Oregon Wildfire Information](#)
- **National Weather Service** – information on air quality and smoke maps: <https://airquality.weather.gov/sectors/pacnorthwest.php>
- **RAPTOR** - Oregon Emergency Management’s real-time web mapping application allows the public to view incident data about wildfires, areas impacted by flooding, live weather radar, contact information for county emergency managers and more. <https://www.oregon.gov/oem/emops/Pages/RAPTOR.aspx>

### Air Quality Related Websites:

- **Oregon DEQ Air Quality Index** and **OregonAir** smartphone app (current Oregon air quality conditions): <https://www.oregon.gov/deq/wildfires/Pages/default.aspx>
- **AirNow** – AQI and related information across the nation: <https://www.airnow.gov/>

**Webcams Websites:** The following are links to live webcams that can be used to view wildfire smoke conditions around the state. However, many are designed to show only traffic and road conditions, and do not provide very good image resolution for viewing smoke.

- **Oregon Department of Transportation Trip Check.** Has a custom feature that allows multiple webcams to be viewed on the same [page: www.tripcheck.com/Pages/ CamerasEntry.asp](http://www.tripcheck.com/Pages/CamerasEntry.asp)
- **Northwest Webcams.** This website is a comprehensive list of all the webcams in Oregon. Note that some may no longer be operational, have broken links, or not good image quality: <http://www.northwestwebcams.com/oregon-web-cams.shtm>
- **ALERTWildfire Cameras.** ALERTWildfire is a consortium of three universities - The University of Nevada, Reno, University of California San Diego and the University of Oregon. Cameras are located throughout seven states in the West and provide real-time footage of both forestland and populated areas for wildfire detection and monitoring. <https://www.alertwildfire.org/region/oregon>

**Map of Wildfire Risk Areas in Oregon.** ODF maps areas with Significant Fire Potential, those areas with the potential for fires costing more than \$25,000 (frequently updated): <https://apps.odf.oregon.gov/SignificantFirePotential> and [the National Interagency Coordination Center provides predicted national significant multi-month and 7-day significant fire potential: https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm](#)

**OSHA Wildfire Resources for Employers and Workers.** <https://osha.oregon.gov/pages/topics/wildfires.aspx>

**OHA - Health Effects From Wildfire Smoke.** Oregon Health Authority maintains information to support communication about the health effects of wildfire smoke and strategies to minimize these effects. OHA's Wildfires and Smoke webpage contains general information about wildfire smoke and health. [www.healthoregon.org/wildfires](http://www.healthoregon.org/wildfires).

**OHA Wildfire Smoke Crisis and Emergency Risk Communication Toolkit** contains sample press releases, approved talking points, fact sheets, sample social media posts and more. It was developed for local and tribal health authorities to support clear, consistent and coordinated statewide public information during a severe smoke event. Updates to the kit can occur so check the Crisis and Emergency Risk Communication website throughout this season for updated materials. Most materials are available in ten or more languages. Find it at [www.healthoregon.org/cerc](http://www.healthoregon.org/cerc). See *Appendix E* in this protocol for more specific information about smoke guidance as it related to COVID-19 response efforts.

## 12. Other Air Monitoring Networks, AQI Pages and Apps

DEQ primarily recommends checking air quality via the following sources:

- Oregon Smoke Blog- [www.oregonsmoke.org](http://www.oregonsmoke.org)
- OregonAir app
- The Oregon DEQ AQI webmap (<https://aqi.oregon.gov/>)
- EPA Fire and Smoke Map ([fire.airnow.gov](http://fire.airnow.gov))

Other air monitoring networks or sites showing AQI values are now available online. These are private networks or data displaying systems that measure or show PM<sub>2.5</sub> to varying degrees of accuracy. One network more known than others is the Purple Air network. It has good data once it has been adjusted, however, is generally not presented in an adjusted or corrected manner. It has been found to report values 1.5 to 2 times higher in Oregon than actual PM<sub>2.5</sub> values. Viewing this data should be done in a cautious manner and it may be used for possible trending information, such as where smoke is and if concentrations are improving or deteriorating.

Exercise caution when viewing other AQI apps or monitoring networks. Only the data represented on DEQ's website, the OregonAir app, EPA's AirNow website, and as shown on the Oregon Smoke Blog should be considered valid.

## 13. Appendices

**A. Current Agency Contact List.** *Appendix A* of this protocol is a contact list of representatives from the agencies and organizations identified in this protocol. Annual updating of this contact list will be necessary and should be conducted at the annual pre-wildfire season conference call, as noted in section. 7 above.

**B. Examples of Wildfire Smoke Public Announcements.** *Appendix B* of this protocol provides an example of DEQ's public announcement/press releases from prior years, which can be used as a guide for future announcements.

**C. Monitoring Network in Oregon for PM<sub>2.5</sub> AQI.** The monitoring network and current data can be viewed on the DEQ webpages as shown in the wildfire related websites link and the locations can be viewed in the appendix for general information. The locations of the various monitors for 2023 is shown here in *Appendix C*. Note that some additional PM 2.5 estimate monitors are being installed and updates to the DEQ AQ APP, our AQI monitoring web pages and the wildfire blog will happen accordingly, but may not be reflected in this protocol map.

**D. Oregon DEQ Public Affairs Schedule: Wildfire Season 2023.** *Appendix D* of this protocol outlines the rotating schedule of Public Affairs Specialists assigned during the 2023 wildfire season.

**E. Respiratory Illnesses and Wildfire Smoke: A 2023 Guide.** *Appendix E* of this protocol outlines available resources and messaging around smoke guidance as it related to COVID-19 response efforts.

F. Air Resource Advisor Information. ARA's are technical specialists assigned to incidents along with Incident Management Teams. ARA's provide timely smoke impact and forecast information and may install and operate temporary air quality monitors near fire perimeters. They are able to provide state and local agencies information on fire activity and projected smoke production. ARA's draft Smoke Forecast Outlooks that are published to the following website: <https://outlooks.wildlandfiresmoke.net/outlook>

## Appendix A.1 – Oregon Protocol Contact List

Agency/Organization	Staff Contact
<b>1. Federal Land Managers (USFS &amp; BLM)</b>	<b>Rick Graw</b> , Pacific Northwest Region, Air Quality Program Manager. 503-347-5688 (also serves as BLM contact) <a href="mailto:richard.graw@usda.gov">richard.graw@usda.gov</a>
<b>2. Air Resource Advisor National Coordinator</b>	n/a (if assigned to major wildfire event) <b>Pete Lahm</b> , Wildland Fire Air Quality Response Program (USFS) 202-205-1084, cell: 602-432-2614 <a href="mailto:plahm@fs.fed.us">plahm@fs.fed.us</a> <a href="mailto:Pete.lahm@gmail.com">Pete.lahm@gmail.com</a>
<b>3. NWS</b>	<p><b>Medford</b>  <b>Ryan Sandler</b>, Warning Coordination Meteorologist                      4003 Cirrus Drive, Medford, OR 97504                      541-776-4303 ext. 223  <a href="mailto:ryan.sandler@noaa.gov">ryan.sandler@noaa.gov</a>  <a href="http://www.weather.gov/Medford">www.weather.gov/Medford</a></p> <p>Please send all Air Quality Alerts to <a href="mailto:mfr.operations@noaa.gov">mfr.operations@noaa.gov</a> or call 541-776-4326 or 541-773-1067.</p> <p><b>Portland</b>  <b>Treena Jensen</b>, Warning Coordination Meteorologist                      NOAA’s National Weather Service                      5241 NE 122<sup>nd</sup> Ave., Portland, Oregon 97230                      503-326-2340 ext. 223, cell: 503-853-4121  <a href="mailto:treena.jensen@noaa.gov">treena.jensen@noaa.gov</a></p> <p>Please send all Air Quality Alerts to <a href="mailto:pqr.ops@noaa.gov">pqr.ops@noaa.gov</a> or call 503-326-2356.</p> <p><b>Pendleton</b>  <b>Katy Branham</b>, Warning Coordination Meteorologist                      National Weather Service, Pendleton, Oregon                      541-276-7832 ext 223  <a href="mailto:katy.branham@noaa.gov">katy.branham@noaa.gov</a></p> <p>To post air quality alerts, please call or send e-mail to: <a href="mailto:pdt.operations@noaa.gov">pdt.operations@noaa.gov</a></p> <p><b>Boise</b>  <b>Jay Breidenbach</b>, Warning Coordination Meteorologist (Administration)                      National Weather Service, Boise, Idaho                      208-334-9861 ext. 223  <a href="mailto:jay.breidenbach@noaa.gov">jay.breidenbach@noaa.gov</a></p> <p>To post air quality alerts, please call or send e-mail to Boise Operations:  <a href="mailto:boise.weather@noaa.gov">boise.weather@noaa.gov</a>                      208-334-9518 or 208-334-9508</p>

<p><b>4. American Red Cross</b></p>	<p><b>Chad Carter</b>, Regional Communications Director 971-978-9353 <a href="mailto:chad.carter@redcross.org">chad.carter@redcross.org</a></p> <p>To request Red Cross response assistance, contact the Red Cross Duty Officer: 1-888-680-1455 (<b>duty officer</b>)</p>
<p><b>5. DEQ</b></p>	<p><b>Margaret Miller</b>, Air Quality Planner, Headquarters cell: 503-347-5028 <a href="mailto:Margaret.Miller@deq.oregon.gov">Margaret.Miller@deq.oregon.gov</a></p> <p><b>Jennifer Horton</b>, Air Quality Specialist, Western Region cell: 503-333-5812 <a href="mailto:jennifer.horton@deq.oregon.gov">jennifer.horton@deq.oregon.gov</a></p> <p><b>Scott Peerman</b>, Air Quality Specialist, Northwest Region cell: 503-887-8856 <a href="mailto:scott.peerman@deq.oregon.gov">scott.peerman@deq.oregon.gov</a></p> <p><b>Neda Khosravi</b>, Meteorologist, DEQ Lab Cell: 503-933-8336 <a href="mailto:Neda.khosravi@deq.oregon.gov">Neda.khosravi@deq.oregon.gov</a></p> <p><b>Tom Roick</b>, Air Quality Monitoring Laboratory Manager 503-693-5719, cell: 503-593-2705 <a href="mailto:tom.roick@deq.oregon.gov">tom.roick@deq.oregon.gov</a> <i>Retiring summer 2023</i></p> <p><b>Daniel Johnson</b>, Air Quality Monitoring Section 503-693-5713, cell: 971-806-5323 <a href="mailto:daniel.johnson@deq.oregon.gov">daniel.johnson@deq.oregon.gov</a></p> <p><b>Harry Esteve</b>, Communications Manager cell: 503-951-3856 <a href="mailto:Harry.Esteve@deq.oregon.gov">Harry.Esteve@deq.oregon.gov</a> <i>Retiring August 15, 2023</i></p> <p><b>Laura Gleim</b>, Public Affairs, Bend Office, Eastern Region cell: 503-577-3697 <a href="mailto:laura.gleim@deq.oregon.gov">laura.gleim@deq.oregon.gov</a></p> <p><b>Dylan Darling</b>, Public Affairs, Eugene Office, Western Region cell: 541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a></p> <p><b>Lauren Wirtis</b>, Public Affairs, Portland Office, Northwest Region cell: 503-568-3295 <a href="mailto:Lauren.Wirtis@deq.oregon.gov">Lauren.Wirtis@deq.oregon.gov</a></p> <p><b>Jennifer Flynt</b>, Public Affairs, Headquarters cell: 503-730-5924 cell <a href="mailto:jennifer.flynt@deq.oregon.gov">jennifer.flynt@deq.oregon.gov</a></p> <p><b>Greg Svelund</b>, Public Affairs, Bend Office, Eastern Region Cell: 541-647-4194 <a href="mailto:Greg.svelund@deq.oregon.gov">Greg.svelund@deq.oregon.gov</a></p> <p><b>Michele Thompson</b>, Communications/Blog, Headquarters 503-863-0940 <a href="mailto:Michele.thompson@deq.oregon.gov">Michele.thompson@deq.oregon.gov</a></p>

	<p><b>Susan Mills</b>, Public Affairs, Headquarters, social media  cell: 503-956-9648  <a href="mailto:susan.mills@deq.oregon.gov">susan.mills@deq.oregon.gov</a></p>
<b>6. OHA</b>	<p><b>Jamie Bash</b>, Risk Communications Analyst, Health Security Preparedness and Response  cell: 503-754-3190  <a href="mailto:jamie.p.bash@oha.oregon.gov">jamie.p.bash@oha.oregon.gov</a></p>
	<p>Jonathan Modie, Media Relations Officer, External Relations Division  cell: 971-246-9139  <a href="mailto:jonathan.n.modie@oha.oregon.gov">jonathan.n.modie@oha.oregon.gov</a>  On-call PIO: <a href="mailto:PHD.Communications@oha.oregon.gov">PHD.Communications@oha.oregon.gov</a></p>
	<p><b>Amelia Reynolds</b>, Wildfire Planner, Health Security, Preparedness and Response  503-758-5918  <a href="mailto:amelia.reynolds@oha.oregon.gov">amelia.reynolds@oha.oregon.gov</a></p>
	<p><b>Ali Hamade</b>, Deputy State Epidemiologist, Environmental Toxicologist  971-673-5390  <a href="mailto:ali.k.hamade@oha.oregon.gov">ali.k.hamade@oha.oregon.gov</a></p>
	<p><b>Carol Trenga</b>, Surveillance Epidemiologist, Environmental Health  971-599-0081  <a href="mailto:Carol.a.trenga@oha.oregon.gov">Carol.a.trenga@oha.oregon.gov</a></p>
	<p><b>Position Currently Vacant</b>, Chief Medical Officer, Health Security Preparedness and Response</p>
<b>7. Tribal Government and Indian Health Service</b>	<p><b>Confederated Tribes of the Umatilla Indian Reservation</b>  <b>Caleb Minthorn</b>, Energy and Environmental Sciences Program  541-429-7422  <a href="mailto:oaq@ctuir.org">oaq@ctuir.org</a></p>
	<p><b>Confederated Tribes of Warm Springs</b>  <b>Danny Martinez</b>, Air Quality  541-553-0497  <a href="mailto:danny.martinez@wstribes.org">danny.martinez@wstribes.org</a></p> <p>-----</p> <p><b>Matthew Ellis</b>, US Public Health Service, Emergency Management Coordinator  Indian Health Services  <a href="mailto:Matthew.Ellis@ihs.gov">Matthew.Ellis@ihs.gov</a></p>
	<p><b>Cow Creek Band of Umpqua Tribe of Indians</b>  <b>Ryan Bochart</b>, Temp. Director of Emergency Services  541-677-5551, cell: 541-671-0196  <a href="mailto:rbochart@cowcreek.com">rbochart@cowcreek.com</a></p>
	<p><b>Confederated Tribes of Coos, Lower Umpqua, &amp; Siuslaw Indians</b>  <b>Ali Grove</b>, Air Protection Specialist  541-435-7156, cell 541-294-6136  <a href="mailto:agrove@ctclusi.org">agrove@ctclusi.org</a></p>
	<p><b>Armando Martinez II</b>, Emergency Management Coordinator  541-435-7228, cell 541-999-4151  <a href="mailto:amartinez@ctclusi.org">amartinez@ctclusi.org</a></p>

	<p><b>Klamath Tribes</b>  <b>Steve Rondeau</b>, Director of Natural Resources  <a href="mailto:steve.rondeau@klamathtribes.com">steve.rondeau@klamathtribes.com</a></p> <p>For other tribal contacts <sup>1</sup>: Legislative Commission on Indian Services - <a href="#">Natural Resources Cluster – Tribal Contacts</a></p>
<b>8. Oregon Department of Emergency Management</b>	<p><b>Traci Nguyen</b>, Communications Representative  971-673-8899  <a href="mailto:traci.t.nguyen@oem.oregon.gov">traci.t.nguyen@oem.oregon.gov</a></p>
	<p><b>Chris Crabb</b>, Public Affairs Officer  971-719-0089  <a href="mailto:chris.crabb@oem.oregon.gov">chris.crabb@oem.oregon.gov</a></p>
	<p><b>April L. Davis</b>, Public Affairs Officer and Digital Media Strategist  971-600-8016  <a href="mailto:april.l.davis@oem.oregon.gov">april.l.davis@oem.oregon.gov</a></p>
	<p><b>OEM Duty Officer</b>  Oregon Emergency Response System (OERS)  1-800-452-0311 Or 503-378-6377</p>
<b>9. Oregon OSHA</b>	<p><b>Penny Wolf-McCormick</b>, Health Enforcement Manager, Emergency Preparedness Coordinator  cell: 971-707-0867  <a href="mailto:Penny.l.wolf-mcmormick@oregon.gov">Penny.l.wolf-mcmormick@oregon.gov</a></p>
	<p><b>Aaron Corvin</b>, Public Information Officer  cell: 971-718-6973  <a href="mailto:Aaron.corvin@oregon.gov">Aaron.corvin@oregon.gov</a></p>
	<p><b>Dave McLaughlin</b>, Standards and Appeals Manager  971-701-5491  <a href="mailto:dave.mclaughlin@oregon.gov">dave.mclaughlin@oregon.gov</a></p>
<b>10. ODF</b>	<p><b>Stacy Mcarter</b>, Mitigation Program Manager  (503) 701-0236  <a href="mailto:stacy.mccarter@odf.oregon.gov">stacy.mccarter@odf.oregon.gov</a></p>
	<p><b>Jessica Prakke</b>, Public Information Officer  503-983-3367  <a href="mailto:jessica.prakke@odf.Oregon.gov">jessica.prakke@odf.Oregon.gov</a></p>
<b>11. Governor’s Office Regional Solutions Centers</b>	<p><a href="http://www.oregon.gov/gov/admin/regional-solutions/Pages/default.aspx">http://www.oregon.gov/gov/admin/regional-solutions/Pages/default.aspx</a></p>
<b>12. ODOT</b>	<p><b>Christina LeClerc</b>, ODOT Emergency Operations Coordinator  503-986-4488  <a href="mailto:Christina.LECLERC@odot.state.or.us">Christina.LECLERC@odot.state.or.us</a></p>
	<p><b>Jessica Gourley</b>, State Emergency Operations Manager  503-986-3020  <a href="mailto:Jessica.K.Gourley@odot.state.or.us">Jessica.K.Gourley@odot.state.or.us</a></p>
<b>13. Office of State Fire Marshal</b>	<p><b>Mariana Ruiz-Temple</b>, Oregon State Fire Marshal  503-934-8238  <a href="mailto:mariana.ruiz-temple@state.or.us">mariana.ruiz-temple@state.or.us</a></p>

<b>14. Lane Regional Air Protection Agency</b>	<b>Travis Knudsen</b> , Public Affairs 541-736-1056 ext. 217, cell: 303-523-2661 <a href="mailto:travis@lrapa.org">travis@lrapa.org</a>
<b>15. Local Public Health Authorities</b>	<b>Each Oregon County has points of contact listed</b> <a href="http://public.health.oregon.gov/ProviderPartnerResources/LocalHealthDepartmentResources/Pages/lhd.aspx">http://public.health.oregon.gov/ProviderPartnerResources/LocalHealthDepartmentResources/Pages/lhd.aspx</a>
<b>16. 211info</b>	<b>Ciara Doyle</b> , MSW, CIRS, Director of Contract Center and Programs 503-416-2704, cell: 919-434-5458 <a href="mailto:ciara.doyle@211info.org">ciara.doyle@211info.org</a> <a href="http://www.211info.org/">www.211info.org/</a>
<b>17. EPA Region 10</b>	<b>Randall Ruddick</b> , Smoke Management Coordinator 206-553-1999 <a href="mailto:ruddick.randall@epa.gov">ruddick.randall@epa.gov</a>

<sup>1</sup> Oregon Tribal Contact List - may not be the actual contact for wildfire smoke and air quality issues.

## Appendix A.2 – Out-of-State Contact List

<b>AGENCY OR ORGANIZATION</b>	<b>STAFF CONTACT</b>
<b>18. Idaho Department of Environmental Quality</b>	<b>Boise, ID</b> <b>Mark Boyle</b> , Smoke Management Program Coordinator Air Quality Division 208-666-4607 <a href="mailto:Mark.Boyle@deq.idaho.gov">Mark.Boyle@deq.idaho.gov</a>
<b>19. Washington Department of Ecology</b>	<b>Yakima, WA</b> <b>Sean Hopkins</b> , Smoke Management Team Lead Central Regional Office 509-575-2804 <a href="mailto:seho461@ecy.wa.gov">seho461@ecy.wa.gov</a>
<b>20. Southwest Clean Air Agency</b>	<b>Vancouver, WA</b> <b>Uri Papish</b> , Executive Director 360-574-3058 x112 <a href="mailto:Uri@swcleanair.org">Uri@swcleanair.org</a>
<b>21. Nevada Division of Environmental Protection</b>	<b>Carson City, NV</b> <b>Sig Jaunarajs</b> , Supervisor Environ. Scientist IV Bureau of Air Quality Planning 775-687-9392 <a href="mailto:sjaunara@ndep.nv.gov">sjaunara@ndep.nv.gov</a>
	<b>Sheryl Fontaine</b> , Air Quality Scientist 775-687-9359 <a href="mailto:sfontaine@ndep.nv.gov">sfontaine@ndep.nv.gov</a>
	<b>Daren Winkelman</b> , Air Monitoring Supervisor 775-687-9342 <a href="mailto:dwinkelman@ndep.nv.gov">dwinkelman@ndep.nv.gov</a>



<b>22. California Air Resources Board</b>	<b>Sacramento, CA</b> <b>Charles Pearson</b> , Monitoring and Laboratory Division Office of Emergency Response 916-322-7054, cell: 916-322-7054 <a href="mailto:cpearson@arb.ca.gov">cpearson@arb.ca.gov</a>
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## Appendix B – Example Air Quality Advisory News Release



Oregon Department of Environmental Quality

# Air Quality Advisory

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Release date:

## Air quality advisory for \_\_\_\_\_ [Aviso sobre la calidad del aire]

### QUICK FACTS

Location:

End date:

Smoke source:

The Oregon Department of Environmental Quality [and Lane Regional Air Protection Agency/Washington Southwest Clean Air Agency] [extended/issued] an air quality advisory [day of week] for [area/location under advisory] due to smoke from [name/location of fires].

\*\* [Información en español](#) \*\*

DEQ expects the air quality advisory to last until at least [day of week, morning/afternoon/evening]. DEQ and partner agencies will continue to monitor smoke in the area. {DEQ expects intermittent smoke [in area/location]. Air quality may improve [during the morning/afternoon/evening or day of week] but smoke is likely to return [morning/afternoon/evening or day of week].

Smoke levels can change rapidly depending on weather. Check current conditions on the [Oregon Smoke Information Blog](#), [DEQ's Air Quality Index](#), or by downloading the free [OregonAIR app](#) on your smartphone.

Smoke can irritate the eyes and lungs and worsen some medical conditions. People most at risk include infants and young children, people with heart or lung disease, older adults and pregnant women.

Protect yourself and your family when smoke levels are high:

- Stay inside if possible. Keep windows and doors closed. If it's too hot, run air conditioning on recirculate or consider moving to a cooler location.
- Avoid strenuous outdoor activity.
- Use high efficiency particulate air (HEPA) filters in indoor ventilation systems or portable air purifiers. Or [create your own air purifying filter by following these instructions](#).
- Be aware of smoke in your area and avoid places with the highest levels of smoke.

- When air quality improves to moderate or healthy (yellow or green on the Air Quality Index), open windows and doors to air out homes and businesses.
- If you have a breathing plan for a medical condition, be sure to follow it and keep any needed medications refilled.

**Cloth, dust and surgical masks don't protect from the harmful particles in smoke.** [Certain respirators approved by NIOSH](#) can offer protection, but they must be properly selected and worn. Select a NIOSH-approved respirator with a N, R, or P alongside the number 95, 99 or 100. [Learn how to put on and use a respirator](#). Respirators won't work for children as they don't come in children's sizes. People with heart or lung conditions should consult their health care provider before wearing a respirator.

**Additional resources:**

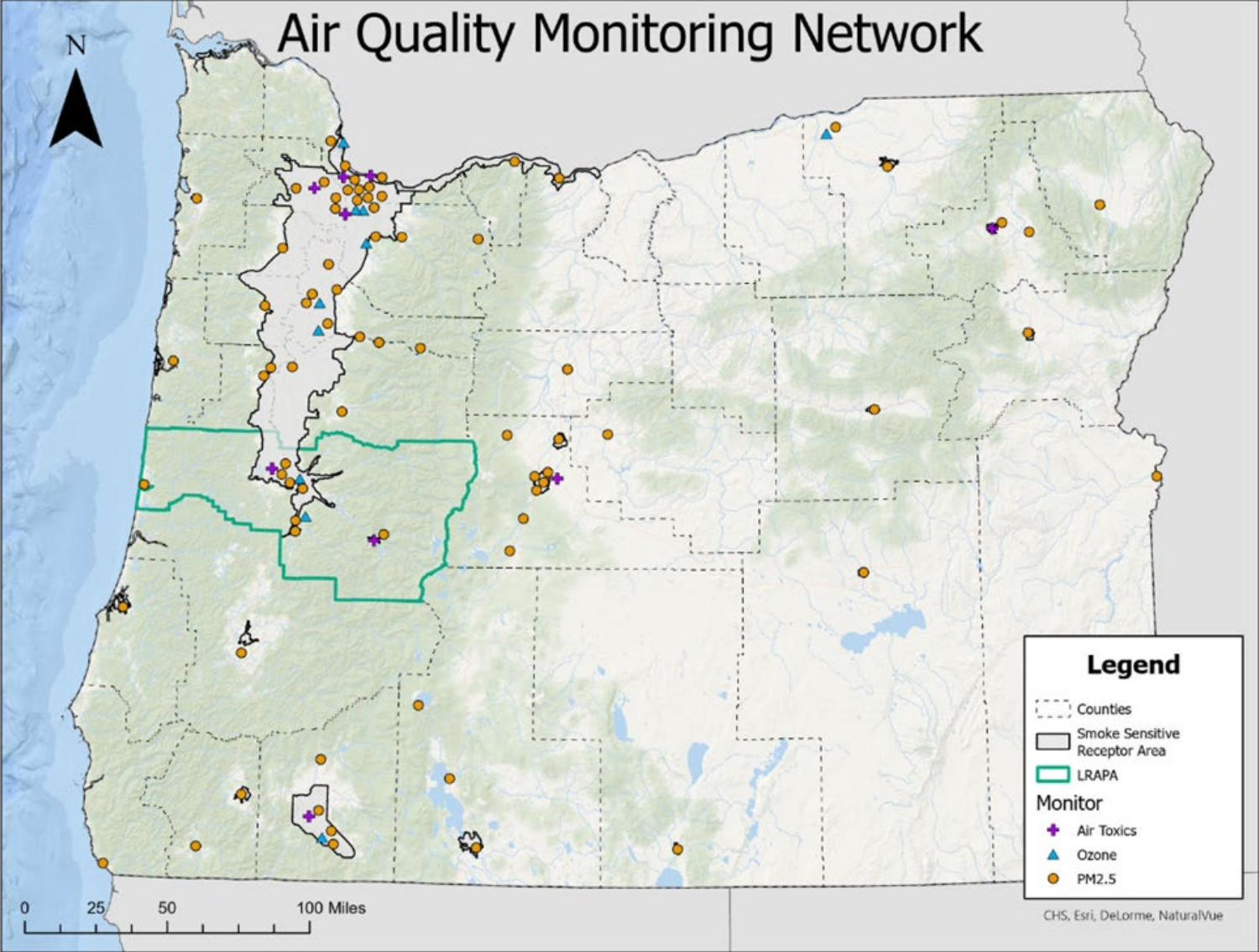
- Find a cleaner air space in your area: Visit [211info.org](http://211info.org), click "Find Resources" and search in the Community Resource Database for "Wildfire Related Clean Air Shelters." Or call 211 any time or day.
- [Learn more about protecting your health during wildfires](#)

**Media contacts:**

- Name, DEQ public affairs specialist, phone, email
- [Local and Tribal contacts](#)

##

# Appendix C – Oregon 2023 Monitor Network



## Appendix D – Oregon DEQ Staffing Schedule: Wildfire Season 2023

Updated: 6/13/2023

### Public Affairs Staffing Schedule - 2023

To provide consistent and nimble communications support during the wildfire season, DEQ has established a rotating schedule of public affairs specialists to handle news releases, blog updates and other needs.

Date	On duty	Contact	Backup
May 30 – June 9	Laura Gleim	503-577-3697 <a href="mailto:laura.gleim@deq.oregon.gov">laura.gleim@deq.oregon.gov</a>	Dylan
June 12 – 23	Dylan Darling	541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a>	Greg
June 26 – July 7	Greg Svelund	541-647-4194 <a href="mailto:greg.svelund@deq.oregon.gov">greg.svelund@deq.oregon.gov</a>	Dylan
July 10 – 14	Dylan Darling	541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a>	Harry/Michele
July 17 – 21	Harry Esteve/Michele Thompson	503-951-3856 <a href="mailto:harry.esteve@deq.oregon.gov">harry.esteve@deq.oregon.gov</a>  503-863-0940 <a href="mailto:michele.thompson@deq.oregon.gov">michele.thompson@deq.oregon.gov</a>	Laura
July 24 – Aug 4	Laura Gleim	503-577-3697 <a href="mailto:laura.gleim@deq.oregon.gov">laura.gleim@deq.oregon.gov</a>	Lauren
Aug 7 – 11	Lauren Wirtis	503-568-3295 <a href="mailto:lauren.wirtis@deq.oregon.gov">lauren.wirtis@deq.oregon.gov</a>	Dylan
Aug. 14-Aug. 18	Greg Svelund	541-647-4194 <a href="mailto:greg.svelund@deq.oregon.gov">greg.svelund@deq.oregon.gov</a>	Lauren/Harry
Aug. 21	Harry Esteve	503-951-3856 work cell 503-432-6685 pers cell <a href="mailto:Harry.esteve@deq.oregon.gov">Harry.esteve@deq.oregon.gov</a>	Lauren
Aug. 21-Sept. 1	Dylan Darling	541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a>	Greg
Sept. 5-Sept. 8	Lauren Wirtis	503-568-3295 <a href="mailto:lauren.wirtis@deq.oregon.gov">lauren.wirtis@deq.oregon.gov</a>	Dylan/Harry
Sept. 11-Sept. 15	Greg Svelund	541-647-4194 <a href="mailto:greg.svelund@deq.oregon.gov">greg.svelund@deq.oregon.gov</a>	Laura
Sept. 18-Sept. 29	Laura Gleim	503-577-3697 <a href="mailto:laura.gleim@deq.oregon.gov">laura.gleim@deq.oregon.gov</a>	Dylan
Note: Dylan covering Sept. 21 and 22	Dylan Darling	541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a>	
Oct. 2-Oct. 27	Dylan Darling	541-600-6119 <a href="mailto:dylan.darling@deq.oregon.gov">dylan.darling@deq.oregon.gov</a>	Lauren

*The on-duty comms lead may set up a back-up within their shifts to allow for days off or other work. October is a month-long shift, but may be adjusted to two shifts if fire season stretches into Fall.*

Weekends and holidays	Harry Esteve	503-951-3856 work cell 503-432-6685 pers cell <a href="mailto:Harry.esteve@deq.oregon.gov">Harry.esteve@deq.oregon.gov</a>	Backup is Jennifer Flynt 503-730-5924, <a href="mailto:jennifer.flynt@deq.oregon.gov">jennifer.flynt@deq.oregon.gov</a>
Social media	Susan Mills	503-956-9648 <a href="mailto:Susan.mills@deq.oregon.gov">Susan.mills@deq.oregon.gov</a>	Backup is Jennifer Flynt 503-730-5924, <a href="mailto:jennifer.flynt@deq.oregon.gov">jennifer.flynt@deq.oregon.gov</a>

*Harry Esteve's expected end date is August 15, so the acting or new Communications Manager will take over weekend duties.*

## AQI Monitoring and Maintenance Staffing Schedule - 2023

Air Quality Monitoring will be monitoring the AQI daily and troubleshooting if a station goes down. Here is a list of who's doing what:

- Kathleen Schuckman (cell 503-509-6383): lead on maintaining the AQI.
- Dan Johnson (cell 971-806-5323): lead on answering AQI questions and backup for Kathleen - the AQI web page includes an email box and phone number [AQM.Questions@deq.oregon.gov](mailto:AQM.Questions@deq.oregon.gov) or call 503-693-5861. For general questions we should start by referring people to the Frequently Asked Questions and Health Impacts tabs on the AQI: <https://aqi.oregon.gov/>, or our fabulous Oregon Smoke Blog <https://oregonsmoke.org>
- Patrick Irvine (cell 971-200-9822) is our IT lead on posting air advisories to the AQI, Nelly Bernuy (cell 971-563-6370) is backup.
- Tom Roick: Air Quality Monitoring manager (cell 503-593-2705), retiring summer 2023
- Shane Sevey: Lab IT staff manager (cell 503-933-2806)

AQI maintenance on-call weekend coverage:

Dates	Staff	Contact
June 3,4	Kathleen Schuckman	503-509-6383
June 10,11	Dan Johnson	971-806-5323
June 17,18	Zach Koch	971-806-3161
June 24,25	Matt Shrensel	971-806-4993
July 1,2,4	Ben Ayres	971-303-2537
July 8,9	Kathleen Schuckman	503-509-6383
July 15,16	Dan Johnson	971-806-5323
July 22,23	Zach Koch	971-806-3161
July 29,30	Matt Shrensel	971-806-4993
Aug 5,6	Ben Ayres	971-303-2537
Aug 12,13	Kathleen Schuckman	503-509-6383

Aug 19,20	Dan Johnson	971-806-5323
Aug 26,27	Zach Koch	971-806-3161
Sept 2,3,4	Matt Shrensel	971-806-4993
Sept 9,10	Kathleen Schuckman	503-509-6383
Sept 16,17	Ben Ayres	971-303-2537
Sept 23,24	Dan Johnson	971-806-5323
Sept 30, Oct 1	Zach Koch	503-509-6383

## Appendix E – Respiratory Illnesses and Wildfire Smoke

It is important to avoid wildfire smoke while also slowing the spread of respiratory illnesses such as Flu, RSV and COVID-19. Some strategies used to reduce exposure to wildfire smoke, such as use of respirators and air filtration systems, are like those used to slow the spread of respiratory illnesses. Unless adapted, other strategies used to minimize smoke exposure could increase opportunities for respiratory illnesses to spread.

Cleaner air spaces are an important way to protect the public’s health against wildfire smoke. Not everyone is able to create a cleaner air space at home, particularly people with low incomes or who lack permanent housing. Those who cannot create a cleaner air space at home often use public spaces to access cleaner air. Though respiratory illnesses concerns are easing somewhat because of COVID-19 vaccination efforts, respiratory illness precautions are still encouraged at community cleaner air spaces while respiratory illnesses are circulating. In some cases, this includes the need for masking and physical distancing in some circumstances. As described in **Table 3** of this protocol, local or tribal public health authorities should consult with DEQ, ARA, OHA and OR-OSHA to determine if a cleaner air space should be opened, or if there are other protective strategies that should be deployed. **If you open a cleaner air space in your jurisdiction, provide clear messaging about the capacity of the space, disease prevention measures that will be taken, and other strategies people can use to limit health effects from smoke.**

People who can create a cleaner air space at home should be encouraged to do so. Staying home helps minimize the risk of exposure to respiratory diseases. The harmful particles found in smoke, known as PM2.5, can only be filtered out of indoor air with high efficiency particulate filters (HEPA) or non-ozone producing electrostatic precipitator (ESP) filters. This level of filtration is especially important for people in smoke-sensitive groups, many of which overlap with [groups at higher risk of COVID-19 and other respiratory illnesses](#). An appropriate level of filtration can be achieved using HEPA air filters on compatible heating and cooling systems, or portable HEPA and non-ozone producing ESP devices.

There are several strategies for avoiding respiratory illnesses. These include being vaccinated against those diseases for which a vaccine exists (e.g. flu, COVID-19) vaccination, staying 6 or more feet away from others, washing hands frequently, and avoiding close contact with people who are ill with fever, cough, difficulty breathing, or other COVID-19 symptoms. Individuals trying to decide whether their symptoms might be from wildfire smoke or COVID-19 may consult [OHA's fact sheet](#) and [CDC's COVID-19 Self-Checker](#).

Face coverings can also prevent the spread of respiratory illnesses. Jurisdictions are encouraged to follow the most current guidance on masking for respiratory illness in congregate settings. Although cloth face coverings reduce the risk of transmission for respiratory illness, they do not protect the wearer from many of the harmful particles in wildfire smoke.



For individuals who must be outdoors during a smoke event, particulate respirators, commonly known as N95s may offer some protection from the harmful particles found in smoke. Care should be taken to select a **NIOSH-approved** respirator with a 'N', 'R', or 'P' alongside the number 95, 99 or 100. Users should become familiar with their limitations and proper use. People with pre-existing health conditions should speak with their healthcare provider prior to using a particulate respirator. Wearers need to select a mask that fits properly to ensure a protective seal around the face. The type of respirator that filters out harmful smoke particles is not available in children's sizes. For the most protection it is important to understand how to put a respirator on, properly position it on your face and how to remove it. Please note that the emergency use authorization from the US Food and Drug Administration has been rescinded for KN95s. KN95s are no longer permitted under their smoke rules because the EUA is no longer in place, and because the more reliable, NIOSH approved respirators are no longer in short supply.

N95 or equivalent respirators are important personal protective equipment for healthcare and essential workers who must continue to work with regular public interactions. Supplies of these respirators have improved. As with any product, supply may change with time based on demand and the ability of the supply chain to meet demand. Language requesting the public reserve PPE for health care personnel may be added or dropped based on state and national PPE supply and current conditions.

### **Resources:**

Know the difference between smoke exposure and COVID-19:

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le3277.pdf>

Wildfire evacuation protocol for people isolating and quarantining due to COVID-19:

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le3257.pdf>

Statement from OR OSHA an OHA on Particulate Respirators and Masks

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le3304.pdf>

Oregon OSHA Summary of Heat and Wildfire Rules: <https://osha.oregon.gov/OSHArules/adopted/2022/heat-wildfire-smoke-rule-summary-2022.pdf>

COVID-19 Public Health Recommendations: Houseless Shelters:

[https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le2256\\_R.pdf](https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le2256_R.pdf)

Identification of Clean Air Spaces:

<https://www.oregon.gov/oha/PH/Preparedness/Prepare/Documents/IdentificationOfCleanAirShelters.pdf>



## Appendix F – Archived Smoke Blog Resource Links

Below are the resources links that were previously available on the Oregon Smoke Blog prior to the 2021 blog revamping.

### Fire Information

- [National Interagency Fire Center](#) –The nation’s support center for wildland firefighting.
- [InciWeb](#) – Provides updates on wildfires and controlled burns across the country, with current information, maps and more.
- [Oregon Department of Forestry](#) – Information and statistics, restrictions and closures, fire prevention and more. Visit ODF’s [wildfire blog](#) for the latest fire info.
- [Central Oregon Fire Info](#) – Current fire and smoke information for Central Oregon.
- [Oregon Department of Forestry Southwest Oregon District Fire Blog](#) – Jackson and Josephine counties.
- [Ashland Forest Resilience Project](#)
- [Blue Mountains Prescribed Fire Council](#) – Umatilla and Wallowa Whitman National Forests
- [Blue Mountains Interagency Fire Dispatch Center](#)

### Smoke Forecasting

- [National Weather Service alerts](#) – Search for weather alerts by city, state or zip code.
- [BlueSky Daily Runs](#) – Use meteorological data to forecast smoke.
- [HRRR Smoke Model](#) – High Resolution Rapid Refresh Smoke model
- [Pacific Northwest Smoke Forecast](#) – Provides [National Weather Service](#) data on ozone, smoke and dust concentrations.
- [AirPact 5 – Air quality forecasting for the Pacific Northwest](#) – Provides timely air quality information for the Pacific Northwest.
- [Canadian Wildfire Smoke Prediction System](#) – Provides daily smoke forecast maps from early April to late October.
- [Western Region Climate Center](#)
- [MODIS Today](#) and [GOES West Visible Imagery](#) – Satellite images of smoke

### Webcams

- [Oregon Department of Transportation’s Trip Check](#)
- [Crater Lake](#)
- [Joseph Oregon](#)
- [Columbia River Gorge Area](#)
- [Black Butte Ranch in Sisters](#)
- [Downtown Bend](#)
- [Mount Hood South](#)
- [Mount Hood Ski Bowl](#)
- [Timberline Lodge](#)
- [Alert Wildfire Camera Network](#)

# Appendix G – Oregon Air Resource Advisor – State Welcome Packet

## Air Resource Advisor Guide to Oregon Wildfire Smoke Advisory Calls

This document is intended to help guide you in your deployment as an ARA while in Oregon. Wildfires burn an average of 660,000 acres in Oregon each year and the number of days with air quality that is unhealthy for sensitive groups or worse continues to increase. We greatly appreciate ARA input during advisory calls and find the smoke outlooks useful both throughout wildfire season and when it is necessary to complete an exceptional event demonstration for the Environmental Protection Agency.

If you are being provided this Guide as a standalone document, the full Oregon Wildfire Response Protocol for Severe Smoke Episodes can be found at: <https://www.oregon.gov/deq/FilterDocs/WFresponse.pdf>. The Protocol includes information for participating agencies, their area of expertise and their involvement in wildfire and smoke response, action taken during advisory calls and the call agenda, contact lists, and an air quality advisory template. Air quality advisories are posted on the Oregon Smoke Blog ([www.oregonSmoke.org](http://www.oregonSmoke.org)), with messaging amplified by partner agencies.

When air quality is impacted by wildfire smoke, advisory calls are hosted on an as-needed basis by the Oregon Department of Environmental Quality and the Oregon Health Authority, along with partner agencies including the Oregon Department of Forestry, the National Weather Service, the US Forest Service, the Lane Regional Air Protection Agency, and local public health authorities. Calls are scheduled from 8:30 – 9:30 AM PDT and email invitations are sent the day before when possible. One of the key objectives of calls is to make decisions about the location and duration of air quality advisories. During these calls, about five to ten minutes is dedicated to ARA updates on fire activity and smoke production/forecasts. We appreciate if you could provide the following information during that time:

- Name
- Incident to which you are assigned
- If you have recently taken off for someone, their name
- Where you are physically located
- Which communities are included in your forecast area
- Current fire information including size, growth in the past 24 hours, percent contained
- Expected changes in the rate of fire growth, fire operations activities, or fuels which could result in a significant change in smoke emissions
- Location and duration of the placement of any temporary monitors
- Which, if any, smoke forecasting models you rely on, if you agree with their predictions and why/why not
- Your smoke predictions
- Any smoke concerns being expressed by fire management or the community
- Upcoming community meetings or events and their location and time

Meetings are held using Microsoft Teams and screen sharing is utilized for each agencies report. The agenda includes:

- Introduction – Host (DEQ or OHA)
- Statewide weather briefing – National Weather Service
- Current fire situation – ARA(s)
- Smoke and air quality forecast – DEQ
- Epidemiological report – OHA
- Any community needs or emergency issues to be considered – can be provided by state or local attendees
- Air quality advisory development and supplementary public health and safety messaging – group can comment but led by DEQ PIO

- Date for next call – Host (DEQ or OHA)

Coordination with DEQs Meteorologist outside of air quality advisory calls is recommended, when possible, as a useful tool in preparing forecasts and comparing information and resources.

A list of main contacts is included below, with a more inclusive list included in the Protocol. The Protocol also contains online resources including websites related to wildfire information, air quality information, OHA resources for public health and risk communications, and Oregon webcams.

Agency	Contact Information
Oregon DEQ Smoke Team	<a href="mailto:smoke@deq.oregon.gov">smoke@deq.oregon.gov</a> – Team members listed below
DEQ	<b>Margaret Miller</b> , Air Quality Planner, Headquarters cell: 503-347-5028 <a href="mailto:Margaret.Miller@deq.oregon.gov">Margaret.Miller@deq.oregon.gov</a>
DEQ	<b>Jennifer Horton</b> , Air Quality Specialist, Western Region cell: 503-333-5812 <a href="mailto:jennifer.horton@deq.oregon.gov">jennifer.horton@deq.oregon.gov</a>
DEQ	<b>Scott Peerman</b> , Air Quality Specialist, Northwest Region cell: 503-887-8856 <a href="mailto:scott.peerman@deq.oregon.gov">scott.peerman@deq.oregon.gov</a>
DEQ	<b>Neda Khosravi</b> , Meteorologist, DEQ Lab Cell: 503-933-8336 <a href="mailto:Neda.khosravi@deq.oregon.gov">Neda.khosravi@deq.oregon.gov</a>
OHA	<b>Jamie Bash</b> , Risk Communications Analyst 971-673-1394, cell: 503-754-3190 <a href="mailto:jamie.p.bash@dhsosha.state.or.us">jamie.p.bash@dhsosha.state.or.us</a>
OHA	<b>Amelia Reynolds</b> , Wildfire Planner, Health Security, Preparedness and Response, 503-758-5918 <a href="mailto:amelia.reynolds@dhsosha.state.or.us">amelia.reynolds@dhsosha.state.or.us</a>
ODF	<b>Stacey McCarter</b> , Mitigation Manager (503) 701-0236 <a href="mailto:Stacey.Mccarter@odf.oregon.gov">Stacey.Mccarter@odf.oregon.gov</a>
USFS	<b>Rick Graw</b> , Air Quality Program Manager 503-347-5688 <a href="mailto:Richard.graw@usda.gov">Richard.graw@usda.gov</a>
Lane Regional Air Protection Agency	<b>Travis Knudsen</b> , Public Affairs 541-736-1056 ext. 217, cell: 303-523-2661 <a href="mailto:travis@lrpa.org">travis@lrpa.org</a>

If you have additional questions related to the Protocol or advisory calls in Oregon, please reach out to one of the DEQ or OHA staff listed above. To be added to the email list for advisory call invitations, visit <http://cepurl.com/gp0zvr>.