



Unhealthy Air Events

OPERATIONAL GUIDELINE

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I. INTRODUCTION

The purpose of this operational guideline (OG) is to provide guidance for City of Portland officials to make recommendations to the Disaster Policy Council during unhealthy air events, and to provide recommendations for curtailing certain City services. Additionally, it provides guidance on messages that could lower risks to employees’ respiratory health.

This policy will be solely for employees as it relates to work activities. It is geared towards wildfire smoke specifically, but could be adapted for use during high pollution, heavy wood smoke or other fires which release hazardous chemicals or particulate matter into an urban setting.

A prolonged unhealthy air event may impact essential functions, and therefore may be an opportunity to activate a bureau Continuity of Operations Plan (COOP).

The employees at risk due to unhealthy air include, but are not limited to:

- **All staff** travelling to and from work, especially those travelling by foot, bike or public transit.
- **Firefighters and police officers** work in all quadrants of the City at all hours. Fire apparatus are equipped with self-contained breathing apparatus which are only used during emergency responses which require specific respiratory protection.”
- **Field staff** in several bureaus work in all quadrants of the city beginning early in the morning.
- **Parks employees** who work outside with the public:
 - **Field staff** who work in all quadrants of the City beginning early in the morning (7 days/week; 6:30 am in the summer, and into the evening).
 - **Recreation program staff** who work with seniors and children (who may have increased sensitivities); summer camps, outdoor pools, summer lunch programs.
 - **Staff working large events sponsored and coordinated by PP&R** such as summer movies/concerts, new park grand openings, Sunday Parkways, and special celebrations.
 - **Staff working large events held at PP&R locations by a third party** such as Waterfront Blues Festival, Rose Festival, Portland Marathon.

II. CONCEPT OF OPERATIONS

1. RECOMMENDED CITY ACTIONS

This table outlines recommended City of Portland actions to protect employee health at each air quality level.

Air Quality Rating	AQI ¹	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Recommended City Actions
Good	0-50	0-12	None
Moderate	51-100	13-35	None
Unhealthy for sensitive groups ²	101-150	36 – 55, expected to remain or worsen for several hours	<ul style="list-style-type: none"> • PBEM Duty Officer should add AQI current and forecasted data to Daily Log. <ul style="list-style-type: none"> ○ Emergency Management Steering Committee should forward Daily Log as needed within their bureau. • Bureau Safety Managers, managers of

¹ Air Quality Index (AQI) and Particulate Matter (PM) 2.5 levels are from the Environmental Protection Agency (EPA) *Wildfire Smoke: A Guide for Public Health Officials*, Revised May 2016

² Seniors, children, and people with increased sensitivities

Air Quality Rating	AQI ¹	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Recommended City Actions
			<p>employees who work outside, and their employees should check recommended data sources (<i>see References section</i>).</p> <ul style="list-style-type: none"> • Bureaus with outdoor recreation activities and events should use the state toolkit guidance for schools to inform decisions about outdoor activities and events programming.
Unhealthy for all groups	151-200	56 – 150, expected to remain or worsen for several hours	<ul style="list-style-type: none"> • Same as above • PBEM Duty Officer should: <ul style="list-style-type: none"> ○ Upgrade City operational level to Enhanced Operations, notify EMSC and DPC, and set a daily Situation Status Report schedule; and ○ Include advice in Sit Stat report to limit the time spent outdoors, avoid strenuous work or exercise outdoors, or any other relevant health messaging provided by Multnomah County or state agencies. • Bureau emergency managers and the DPC will read and share Sit Report as needed, and use to inform bureau safety actions. This can include notification by email and/or Everbridge alert to a pre-assigned group of bureau managers and/or employees who are working outside (see Everbridge templates below). • Bureaus directors should approve messaging. Everbridge text alerts should be brief, and voice recording should be completed in advance. • Bureaus directors with staff working outdoor recreation activities and events should consider: closing pools, cancelling outdoor events, alternate work assignments, and/or flex time.

Air Quality Rating	AQI ¹	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Recommended City Actions
			<ul style="list-style-type: none"> ● Managers should: <ul style="list-style-type: none"> ○ Use discretion whether to decide to allow field worker flex time and/or alternate work assignments; and ○ Consult with Bureau Safety Managers for appropriate Personal Protective Equipment (PPE) for employees. ● PIOs should: Ramp up the Joint Information System to coordinate messaging.
Very unhealthy	201-300	151-250	<ul style="list-style-type: none"> ● Same as above ● PBEM Duty Officer should: <ul style="list-style-type: none"> ○ Recommend convening a DPC conference call; and ○ Include information in Sit Stat report about: shelter in place procedures, advice to avoid driving when possible, run A/C on “re-circulate”. ● The DPC should: <ul style="list-style-type: none"> ○ Plan for potential school closures; ○ Consider impacts to public health and employees of multiple bureaus for large City-sponsored outdoor events; ○ Consider Multnomah County, Oregon Health Authority and OR DEQ guidance; ○ Consider sending a Citywide email directive from the Mayor and pre-approved Everbridge alert message for flex time, working remotely, alternate work assignments, and/or closing City facilities; and ○ Consider sending other pre-approved Inclement Weather Notifications.

Air Quality Rating	AQI ¹	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Recommended City Actions
Hazardous	>300	Above 250	<ul style="list-style-type: none"> • Same as above • PBEM should consider voluntary evacuation of sensitive groups.

2. ROLES AND RESPONSIBILITIES

1. The **Disaster Policy Council (DPC)** will use this guideline and current and forecasted air quality data to decide which recommended actions to implement at each meeting convened by the Mayor. Key decision makers are Mayor, HR Director, City Attorney, and Parks Director.
2. **The PBEM Duty Officer** should include air quality information and health guidance in the Duty Officer Daily Log and Situation Status Report, if applicable. They should recommend a DPC meeting at the appropriate level.
3. **Bureau emergency managers** should monitor air quality in summer months. They should alert the safety manager as needed.
4. **Bureau safety managers** are responsible for Oregon Occupational Safety and Health Administration (OSHA) compliance.
5. **Bureau Everbridge administrators** should create bureau-specific templates for unhealthy air messaging, train users, and ensure employee SAP information is correct.
6. **Supervisors of employees who work outside, and their employees** should read forwarded emails from internal City sources such as the PBEM Duty Officer. They should also monitor air quality throughout the day on days with elevated unhealthy air levels using mobile apps like "Weather Underground", "AirQuality" and "OregonAir".
7. **Employees** who are sensitive to unhealthy air levels should alert their manager if they feel unable to work outside without proper protective equipment, and request alternate work assignments or flex time. Employees with a medical condition covered under the Americans with Disabilities Act can request reasonable accommodations.
8. **Managers** should notify Labor Relations if the event requires a structured agreement to accommodate a longer duration than normal.

3. RESPIRATORS AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

Bureaus should have appropriate PPE available for employees, based on their hazard assessments. In an air quality event, Bureaus should follow their PPE and respiratory protection programs for selection and use of PPE. Respiratory and ocular protection may be warranted. It should be noted that when an employee voluntarily chooses to wear a respirator and the employer allows the employee to use a respirator, certain elements of the Oregon OSHA Respiratory Protection Program (1910.134) must be established and implemented.

Respirators are approved by the National Institute for Occupational Safety and Health (NIOSH). **Do not rely on a non-NIOSH approved respirator for protection.** Paper "comfort" or "dust" masks commonly found at hardware stores trap large particles, such as sawdust. These masks will not

protect your lungs from smoke, small particulates, or hazardous gases. Additionally, NIOSH approved N95 or N100 masks may offer some protection; however, they will not filter out hazardous gases typically associated with wildfire smoke.

For assistance with safety programs and PPE, contact City Risk.

4. EVERBRIDGE TEMPLATES

The following Everbridge templates are available for use by any bureau Everbridge administrator, to use as directed by their bureau director.

Text

“Air quality levels may be unhealthy. Please check your email for guidance.”

Email

“Recognizing that the City has an obligation to perform essential functions and recognizing that the City has an obligation to protect its employees, here are some items to consider.

- 1.If possible, minimize staff’s exposure to outside air to the extent possible. While ensuring that essential services are continued, prioritize other tasks that can be performed indoors.
2. Encourage your staff to take frequent breaks indoors. Ensure that they are well hydrated. To the extent possible, reduce their physical exertion.
3. Communicate with your staff, and make sure your staff can communicate with supervisors. If anyone is experiencing health effects, or have concerns due to respiratory conditions, please support them taking accrued leave for the balance of their shifts. Encourage any with health concerns to consult their physicians.
4. Paper masks are ineffective. Please consult with your bureau safety officer or City Risk for appropriate protection.

As this hot, dry summer continues, it could be well into October before fire season ends. Please continue to monitor DEQ’s web site when needed.”

III. REFERENCES

1. STATE OF OREGON AND MULTNOMAH COUNTY

Below is the same EPA/DEQ Air Quality Index as above, with corresponding Multnomah County and State recommended public messaging and health actions.

				State Recommended Public Health Actions	
Air Quality Rating	AQI ³	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Multnomah County Recommended Public Messaging	Projected Smoke Exposure under 24 hours	Projected Smoke Exposure over 24 hours
Good	0-50	0-12	n/a	<ul style="list-style-type: none"> If smoke event is forecast in your area, review this Protocol, Crisis and Emergency Risk Communication Toolkit for Wildfires, Frequently Asked Questions about Wildfire Smoke and Public Health document, and more health tips on the Oregon Public Health Division webpage. The Oregon Smoke Blog has information about the latest air quality and other wildfire information: http://oregonSmoke.blogspot.com 	
Moderate	51-100	13-35	n/a	<ul style="list-style-type: none"> Distribute information (i.e., FAQs) to public health partners and the public Identify and provide information to vulnerable populations Refer people to Oregon Smoke Blog for more information Recommend sensitive groups use an air cleaner at home during wildfires 	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> Respond to media inquiries. (Use the Crisis and Emergency Risk Communication toolkit for guidance)
Unhealthy for sensitive	101-150	36 – 55, expected to remain or	<ul style="list-style-type: none"> Basic health messaging 	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> Issue a press release, outlining sensitive groups and encouraging 	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> In the release, include

³ Air Quality Index (AQI) and Particulate Matter (PM) 2.5 levels are from the Environmental Protection Agency (EPA) *Wildfire Smoke: A Guide for Public Health Officials*, Revised May 2016

				State Recommended Public Health Actions	
Air Quality Rating	AQI ³	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Multnomah County Recommended Public Messaging	Projected Smoke Exposure under 24 hours	Projected Smoke Exposure over 24 hours
groups		worsen for a period of several hours		<p>them to reduce exposure. (Use the Crisis and Emergency Risk Communication toolkit and FAQs document for guidance.)</p> <ul style="list-style-type: none"> If school is in session, refer to Public Health Guidance for School Outdoor Activities during Wildfire Events 	<p>consideration of sensitive groups leaving area until air quality improves or if that is not feasible, using air cleaner at home or spending time in a clean-air setting in the community (e.g., air-conditioned library)</p> <ul style="list-style-type: none"> Consider opening a clean-air shelter for sensitive groups
Unhealthy for all groups	151-200	56 – 150, expected to remain or worsen for a period of several hours	<ul style="list-style-type: none"> Recommendations for reduced outdoor exposure and activity for sensitive groups Reinforcement of disease management plans and strategies to improve indoor air quality 	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> Consider cancelling public events held outdoors Recommend public limit strenuous outdoor activities Recommend that sensitive groups consider leaving area until air quality improves. If they can't, recommend spending time in a clean-air setting in the community (i.e., air conditioned library) or sheltering in place at home 	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> Open and publicize clean-air shelters for sensitive groups Review health benefits for sensitive groups of leaving area until air quality improves, and that intermittent time in clean-air shelters or sheltering in-place might not be as protective
Very unhealthy	201-300	151-250	<ul style="list-style-type: none"> Reflect avoidance of outdoor exposure and activity by sensitive groups Reinforcement of disease 	<p><i>Above, plus:</i></p> <ul style="list-style-type: none"> Cancel outdoor events If school is in session, measure indoor air quality if possible, discuss school closure with school administrators Recommend shelter-in-place for 	<p><i>Follow recommended actions to the left and above, plus:</i></p> <ul style="list-style-type: none"> Open and publicize clean-air shelters for sensitive groups

				State Recommended Public Health Actions	
Air Quality Rating	AQI ³	PM2.5 Concentration 24-hour average (micrograms/cubic meter)	Multnomah County Recommended Public Messaging	Projected Smoke Exposure under 24 hours	Projected Smoke Exposure over 24 hours
			management plans and strategies to improve indoor air quality	general population <ul style="list-style-type: none"> Share information about periods of improved air quality to guide essential outdoor activity and ventilation of dwellings (refer to FAQs for more information) 	
Hazardous	>300	Above 251	<ul style="list-style-type: none"> Reflect avoidance of outdoor activity by all groups, unless necessary Reinforcement of disease management plans and strategies to improve indoor air quality 	<i>Above, plus:</i> <ul style="list-style-type: none"> Recommend voluntary evacuation for sensitive groups 	<i>Follow recommended actions to the left and above, plus:</i> <ul style="list-style-type: none"> Open and publicize clean-air shelters for the general public

2. OREGON HEALTH AUTHORITY

Crisis and Emergency Risk Communication – Wildfire Smoke Toolkit:

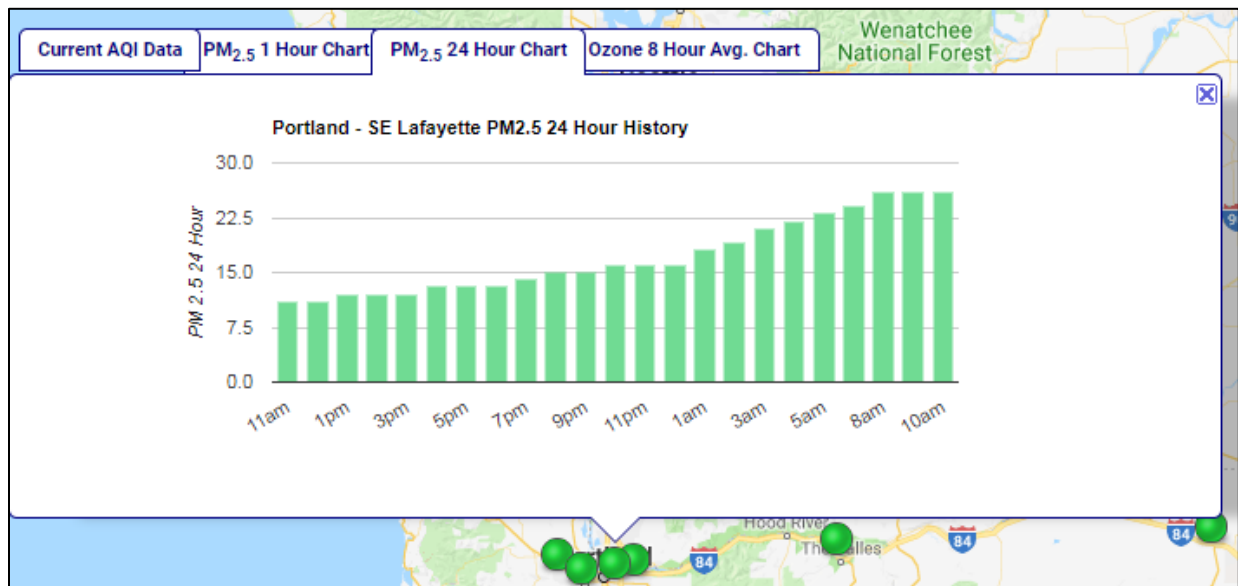
<http://www.oregon.gov/oha/PH/Preparedness/Partners/Pages/riskcommunicationtools.aspx>

FAQ, Fact sheets, school guidance, videos, social media messaging, talking points about smoke, reducing exposure, masks and past press releases in English, Spanish, Russian, Simplified Chinese, Somali, and Vietnamese.

3. OREGON DEQ

DEQ Oregon Wildfire Response Protocol for Severe Smoke Episodes:

<http://www.oregon.gov/deq/FilterDocs/WFresponse.pdf>. Version 5.2, Aug 2017. This Protocol outlines which state agency is responsible for specific actions during severe smoke episodes, and provides recommended public health actions based on PM2.5 levels. It also includes links to relevant references and a contact list.

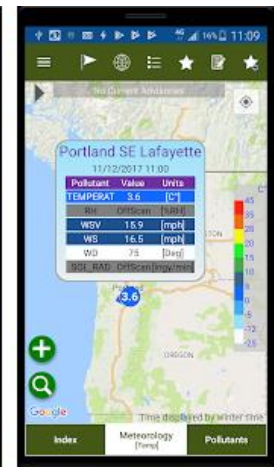


DEQ Air Quality Index: <http://www.deq.state.or.us/aqi/>

Hourly concentrations: <http://www.deq.state.or.us/lab/aqm/rt/rtHourlyConc.aspx>

Smartphone app: OregonAir. (Does not show Vancouver air monitor data.) Air Monitoring Stations near Portland:

- Sauvie Island
- Gresham
- SE Portland
- Beaverton
- Hillsboro
- The Dalles



4. OREGON SMOKE INFORMATION BLOG

<http://oregonsmoke.blogspot.com/>. This site is an effort by many city, county, tribal, state and federal agencies to coordinate and aggregate information for Oregon communities affected by wildfire smoke.

5. BLUE SKY

<https://www.airfire.org/data/bluesky-daily/>. Shows satellite imagery of wildfire smoke plumes.

6. NATIONAL WEATHER SERVICE

During the summer season, NWS Portland posts daily fire weather briefings:

<https://www.wrh.noaa.gov/pqr/fwb.php>.

Heat Risk tool, which is similar to the AQI table: <https://www.wrh.noaa.gov/wrh/heatrisk>.

7. NATIONAL AGENCIES

Wildfire Smoke, A Guide for Public Health Officials, revised May 2016. U.S. Environmental Protection Agency, U.S. Forest Service, U.S. Centers for Disease Control and Prevention, California Air Resources Board. https://www3.epa.gov/airnow/wildfire_may2016.pdf.

IV. OPERATIONAL GUIDELINE LOCATION AND REVIEW

- Location: PBEM Shared Drive S:\3. EMERGENCY OPERATIONS\6. Duty Officer\1. Operational Guidelines
- This OG should be revisited at the end of each summer’s wildfire season for potential updates by a PBEM Operations section member.
- PDF copies will be distributed to the DPC, City Risk, City Attorney, OMF, HR, and to bureau safety and emergency managers.

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Created date	5/17/19
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Approved date	5/17/19