

Wildfire Smoke Exposure Control Program

University of Oregon

I. INTRODUCTION

When wildfires occur, the university monitors local air quality to assess the impact on operations and implements controls protective of employee health.

This program is intended to provide consistent standards for wildfire smoke intrusion within University of Oregon (UO) owned and occupied facilities, in compliance with [OAR 437-002-1081](#). The primary objective is to prevent injury or illness within the University community, and to protect University assets from resultant damages. This program establishes guidelines for departments and staff focusing on AQI action levels, building operations during periods of smoke intrusion, indoor & outdoor work parameters, hazard communications, and monitoring during events.

II. SCOPE

This program applies to UO employees and UO owned or occupied facilities. Certain operations and activities are exempt from this program:

- Employees working inside enclosed structures or vehicles provided with a mechanically filtered ventilation system, and with openings kept closed except as necessary for entry and exiting.
- Employees working at home.
- Affected employer operations that are suspended to prevent employee exposure.
- Work activities with intermittent employee exposure, individually <15 minutes in duration and <60 minutes total per 24-hour period.
- Certain emergency operations.

III. RESPONSIBILITIES

Environmental Health and Safety (EHS) is responsible for administrative oversight of this written program, employee training materials, air quality monitoring, and support to loss control efforts during and after a smoke intrusion event.

Safety and Risk Services (SRS) maintains listings of supervisors known to have exposed employees. During wildfire season and as relevant AQI thresholds are crossed, SRS immediately communicates to those supervisors regarding changing conditions and requirements.

Units, Departments, Supervisors, and Employees are responsible for implementation of actions to protect personnel as specified by this program.

Facility maintenance and operations departments are responsible for implementing protective building systems' operations as specified by this program.

IV. AIR MONITORING

Regional air monitoring is conducted by federal, state and local environmental regulatory authorities. SRS AQI Notifier (Canary) notifies SRS staff when AQI crosses action thresholds.

Site-specific air monitoring may be conducted by trained technicians with direct read meters, including particulate matter in the PM_{2.5} size range. Monitoring is conducted as triggered by AQI's as described in section V. ACTION LEVELS. Air monitoring is conducted, prioritized, and data interpreted as follows.

A. Site-specific monitoring methodology:

- 1) Meters are calibrated to measure particulates in at least the PM_{2.5} size range. Larger particle sizes may also be considered, if a limitation of the field measurement device, but shall be consider PM_{2.5} and smaller for the purposes of this program.
- 2) Meters are factory calibrated as recommended by the device manufacturer.
- 3) Meters are field calibrated daily according to the manufacturer's recommendations.
- 4) Technicians are trained and knowledgeable regarding use of the equipment.
- 5) Monitoring records include the date and time of assessment, location assessed, PM_{2.5} concentration, person making the assessment, and assessment method.

B. Locations selected for monitoring are based on the following prioritization schedule at the discretion of EHS and/or the Incident Management Team (IMT):

- 1) Protection of the health & safety of university students, faculty, staff, and other users of university facilities.
- 2) Protection of university assets, including property and research.

V. ACTION LEVELS & EXPOSURE ASSESSMENT

A. The actionable AQI is determined as follows:

- 1) As provided by AirNow (www.airnow.gov) for the zip code where UO facilities reside. Next-day forecast AQI is used after 2pm daily during wildfire season to initiate proactive operational changes for UO facilities and associated messaging to UO employees.
- 2) As provided by a local or state regulatory agency when that agency has deployed calibrated instruments to monitor site conditions at specific UO facilities or events.
- 3) Additionally, AQI may be determined based on PurpleAir sensors with region-specific correction factor, the [5-3-1 Visibility Chart](#), or using the table for PM_{2.5} field measurements.

AQI Range (PM _{2.5})	PM _{2.5} (µg/m ³)
0-50	0-9
51-100	9.1-35.4
101-150	35.5-55.4
151-200	55.5-125.4
201-250	125.5-174.9

251-276	175.9-201.1
277-300	202.1-225.4
301-350	225.5-250
351-400	250.6-275.1
401-450	275.7-300.2
451-500	300.8-325.4
501-550	325.9-350.5
551-600	351-375.6
601-650	376.1-400.7
651-700	401.2-425.8
701-750	426.3-450.9
751-800	451.4-476
801-849	476.5-500.6
849	500.6

In May 2024, the Environmental Protection Agency (EPA) modified how the AQI is calculated based on 24-hour exposure to PM_{2.5}. While the EPA modified how AQI is defined, that change had no effect on Oregon OSHA requirements for how PM_{2.5} concentration is measured, or on the particulate concentration action levels for protection against hazards of PM_{2.5}.

The following actions are implemented to protect outdoor and indoor workers, and to preserve building systems. To minimize fluctuating operations throughout the day, the operational stance for the highest anticipated AQI may be used to set the day's operations. Additionally, in periods of fluctuating outdoor conditions, it may be determined that a return to normal operating conditions will not occur until improved outdoor conditions have demonstrated stability.

- 1) $AQI \leq 100$ — No mitigation actions.
- 2) $AQI \geq 101$ - 276
 - a. Provide a notification to the campus community that a wildfire smoke intrusion event exists. Provide a reminder of the steps taken if the event worsens. Include a reminder that all building doors and windows are required to be closed except for entry or exit.
 - b. Provide exposed employees with the information indicated in section VII. TRAINING; Provide for effective two-way communication between exposed employees and their supervisors; and, **either** implement engineering and administrative controls to reduce employee exposures below AQI 101 **or** provide for exposed employee access to a NIOSH-approved filtering face piece respirator for voluntary use.
 - c. EHS implements daily monitoring of PM_{2.5} particulate concentrations. See IV. AIR MONITORING for additional information.
 - d. Where possible, building HVAC Systems are turned to Smoke Mode. See section VI. BUILDING OPERATION for additional information.
 - e. Consider implementation of portable air scrubbers in facilities critically sensitive to indoor air quality.

3) AQI 277 - 848

- a. Exposed employees are required to be provided and are required to use a NIOSH-approved filtering face piece respirator following provisions of the Wildfire Smoke Respiratory Protection Program, Appendix A of. [OAR 437-002-1081](#)

4) AQI > 849

- a. Exposed employees are required to be provided and are required to use a NIOSH-approved respirator following all provisions of the UO Respiratory Protection Program and OAR 437-004-1041.
- b. Campus closures may be implemented according to Inclement Weather protocols.

B. Operation of Intercollegiate Athletics events during Wildfire Smoke Events follows applicable Oregon OSHA workplace requirements, and specific NCAA conference and UO Department of Athletics rules and requirements.

VI. BUILDING OPERATION

The following section addresses management of UO facilities in preparation of and during wildfire smoke events.

- C. Facility engineering departments responsible for building HVAC systems identify available HVAC controls, including:
 - 1) Nature and Type of HVAC filtration (e.g. MERV rating, filter type)
 - 2) Nature and Type of HVAC system controls (e.g. manual, programmable, remote)
 - 3) Limitations of HVAC system adjustments based on building design. For example, laboratory HVAC systems require 100% outside air if indoor use of hazardous materials is allowed to continue during a wildfire smoke event.
- D. Where feasible during wildfire smoke events, facility maintenance and operations staff implement HVAC operation protocols to minimize introduction of outside air and maximize the recirculation of indoor air. These protocols are activated as indicated in V. ACTION LEVELS & EXPOSURE ASSESSMENT.
- E. In extreme conditions, the Campus Incident Management team may require temporary HVAC shutdown and/or building closures.

It is understood that University buildings utilize a variety of ventilation systems with varying control capabilities. Appendix C provides a listing of academic and administrative buildings on the Eugene campus having filtered mechanical ventilation systems and identifies those in which HVAC control procedures described in item VI.B. are implemented.

VII. TRAINING

During wildfire smoke events, exposed employees shall be provided with the information on the symptoms and health effects of wildfire smoke exposure, mechanisms of personal protection, mechanisms of accessing current local air quality, mechanisms of two-way communication, and mechanisms of reporting and treating work-related illness or injury. Training is required before performance of the work incurring the exposure, and annually thereafter for exposed employees.

Supervisors are responsible for ensuring employees are trained and that documentation of training is retained.

Training content and materials are made publicly available on the Human Resources and Safety and Risk Services websites:

<https://safety.uoregon.edu/wildfire-smoke>

<https://safety.uoregon.edu/injury-reporting>

<https://hr.uoregon.edu/annual-notifications>

VIII. **RECORDKEEPING**

Training records are retained in university learning management systems, or in departmental records.

Records created in accordance with this program are maintained and accessed according to applicable records retention regulations and university policy.

IX. **DOCUMENTATION**

Original Preparation Date: August 10, 2021

Latest Revision Date: March 19, 2025

Latest Revision Number: 5

X. **APPENDIX**

Appendix A – [Mandatory Workplace Guidance for the Use of Filtering Facepiece Respirators to address Wildfire Smoke, OAR 437-002-1081 Appendix A](#)

Appendix B – Building Filtered Mechanical Ventilation Systems (Eugene Campus)

University buildings with filtered mechanical ventilation systems		
Building air recirculation mode		Building air is not recirculated
Anstett		1600 Millrace
Allen		1715 Franklin
Berwick		1900 Millrace
Casanova		38 NW Davis, PDX
Central Power Station		510 Oak
Chapman		Baker Downtown Center
Chiles Business Center		Black Cultural Center
Clinical Services Building		Carson
Computing Center		Central Kitchen
Deschutes		Collier House
Ford Alumni		CPFM Administration
Frohnmayr Music		EC Cares
Gerlinger Annex		Fenton
Hatfield-Dowlin		Huestis
Jaqua Center		Klamath
Jordan Schnitzer Museum		Knight Campus Building 1
Knight Law		McArthur Court
Knight Library		Olum Childrens Center
Lillis		Onyx Bridge/EHS

Lokey Education		Pacific
Matthew Knight Arena		PeaceHealth North
McKenzie		PSC/Science Library
Miller Theatre		Rainier
Moss Childrens Center		Streisinger
Museum Natural & Cultural History		Thompson's University Center
Oregon		Transportation Services
Peterson		UOPD East Station
PLC		Residence Hall common spaces
Straub		*Specific areas in buildings not listed may be served locally by mechanically filtered air conditioning systems.
Student Rec Center		
University Health Services		

XI. REFERENCES

[Division2, Subdivision Z, 437-002-1081 Protection from Wildfire Smoke](#)

Oregon Health Authority, Wildfires and Smoke.

<https://www.oregon.gov/oha/PH/Preparedness/Prepare/Pages/PrepareForWildfire.aspx#health>.

Accessed December 28, 2020.

Air Now. AQI Basics. <https://www.airnow.gov/aqi/aqi-basics/>. Accessed December 7, 2020