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 damage. This program establishes guidelines for wildfire smoke monitoring and action levels, hazard communication, worker safety precautions, and operation of buildings.

II. SCOPE

This program applies to UO employees and UO owned or occupied facilities.

Exemptions are:

- Employees working inside enclosed structures or vehicles provided with a mechanical ventilation system with filtration, and with openings to the exterior kept closed except as necessary for entry and exiting.
- Employees working at home.
- Affected employer operations that are suspended to prevent employee exposure.

Partial exemptions are:

- 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 assessment, and support to loss control efforts during and after a smoke intrusion event.

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

Facility engineering 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.

The UO WeatherSTEM weather station provides air quality data specific to local conditions at the Eugene campus. Additional site-specific air monitoring may be conducted by trained technicians using field operations equipment and is conducted and data interpreted as follows.

A. Field instrument monitoring method:

1) Monitoring equipment capable of measuring particulate in the PM2.5 size range.
2) Monitoring equipment calibrated and maintained as recommended by the device manufacturer.
3) Technicians trained and knowledgeable regarding use of their equipment.
4) Monitoring records include the date and time of assessment, location assessed, PM2.5 concentration, person making the assessment, and assessment method.
4) Air Quality Index is derived from PM2.5 particulate matter concentrations using the EPA calculator or the following table. Rows highlighted in yellow indicate Action Levels:

AIR QUALITY CONVERSION CHART	
AQI (PM2.5)	**PM2.5 (µg/m³)**
0 – 50	0 – 9
51 – 100	9.1 – 35.4
101	35.5
101 – 150	35.5 – 55.4
151 – 276	55.5 – 200.8
277	200.9
278 – 300	203.2 – 225.4
301 – 848	225.5 – 500
849	500.4

B. Monitoring conducted by EHS staff is 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. EXPOSURE ASSESSMENT & ACTION LEVELS

A. Outdoor Air Quality exposure assessment methods are as follows:

1) **At the Eugene campus:** as provided by UO WeatherSTEM station AirLink PM2.5 sensor (https://lane.weatherstem.com/uo).
2) At UO facilities or field **locations other than Eugene**: as provided by the AQI NowCast at AirNow (www.airnow.gov) for the location's zip code.
3) As provided by a local or state regulatory agency when that agency has deployed monitoring equipment in service of specific UO facilities or events.
4) As determined via this program's field instrument monitoring method.
5) As determined via the 5-3-1 Visibility Chart when other methods are not possible.

B. The following actions are implemented incrementally and in an additive fashion to protect outdoor and indoor workers, and to preserve building mechanical systems.

1) $PM2.5 < 35.5\ \mu g/m^3$ (AQI ≤ 100) — No mitigation actions. During wildfire season, department duty phones and supervisors are expected to maintain awareness of weather conditions affecting their employees, including any weather-related notifications from the university.
2) $PM2.5 \geq 35.5\ \mu g/m^3$ (AQI ≥ 101)
    a. Building and vehicle windows and doors are required to be kept closed, except for entry or exit.
    b. Supervisors are responsible for:
        i. Ensuring exposed employees have been provided with the information indicated in section VII. TRAINING.
        ii. Providing for effective two-way communication with exposed employees.
        iii. **EITHER** implementing engineering and administrative controls to reduce exposures below the PM2.5 35.5 $\mu g/m^3$ threshold, **OR** providing for exposed employee access to a NIOSH-approved filtering face piece respirator for voluntary use (e.g. N95).
        iv. Continuing to monitor wildfire smoke conditions and adjust employee exposure protection requirements as conditions change.
    c. Where possible, building HVAC systems use a recirculation mode (e.g. Smoke Mode) to preserve indoor air quality.
    d. EHS staff assess indoor air quality concerns.
    e. Portable air scrubbers may be deployed to facilities critically sensitive to indoor air quality.

3) PM2.5 ≥ 202.1 µg/m^3 (AQI ≥ 277)

   a. Supervisors are required to **EITHER** implement engineering and administrative controls to reduce exposure below the PM2.5 202.1 µg/m^3 threshold, **OR** require that exposed employees be provided and 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) PM2.5 > 500.6 µg/m^3 (AQI > 849)

   a. Supervisors are required to EITHER implement engineering and administrative controls to reduce exposed employees exposure below the PM2.5 500.6 µg/m3 threshold, OR require that exposed employees 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. Inclement Weather protocols may result in campus closures.

C. 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

University buildings utilize a variety of ventilation systems with varying control capabilities.

A. Facility engineering departments are responsible for identifying available HVAC controls and measures protective of HVAC system function, 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 and use. For example, laboratory HVAC systems require 100% outside air if indoor use of hazardous materials is allowed to continue during a wildfire smoke event.

B. 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.

C. In extreme conditions, the Campus Incident Management Team may require temporary HVAC shutdown and/or building closures.

Appendix C provides a listing of academic and administrative buildings on the Eugene campus having filtered mechanical ventilation systems, and identifies those capable of HVAC control procedures described in item VI.B.

VII. TRAINING

During wildfire smoke events, exposed employees shall be provided with 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 available on the Human Resources and Safety and Risk Services websites:

https://safety.uoregon.edu/ehssafetytraining#W
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:	April 21, 2026
Latest Revision Number:	6

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
Frohnmayer 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