Wildfire Smoke Program

I. **Purpose**

This program provides guidance to CSUF employees on implementing appropriate measures to provide protection from wildfire smoke and poor air quality, consistent with California Code of Regulations (CCR), Title 8, 5141.1 Protection from Wildfire Smoke.

II. **Authority**

California Code of Regulations, Title 8, Section 5141.1 – Protection from Wildfire Smoke

III. **Scope**

A. This program is in effect when the Air Quality Index for PM2.5 is 151 or greater, regardless of the AQI for other pollutants.

B. Per CCR Title 8, 5141.1, the following work places are exempt from this section:

1. Enclosed buildings or structures in which the air is filtered by a mechanical ventilation system and the employer ensures that windows, doors, bays, and other openings are kept closed, except when it is necessary to open doors to enter or exit.

2. Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed, except when it is necessary to open doors to enter or exit the vehicle.

3. Employees exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.

IV. **Definitions**

**Wildfire Smoke** – Emissions from fires in “wildlands,” as defined in Title 8, section 3402, or in adjacent developed areas.

**Air Quality Index (AQI)** – The method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis.
**PM2.5** – Solid particles and liquid droplets suspended in air, known as particulate matter, with an aerodynamic diameter of 2.5 micrometers or smaller.

**NIOSH** - The National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention. NIOSH tests and approves respirators for use in the workplace.

**V. Identification of Harmful Exposures**

A. Environmental Health and Safety

1. Shall determine employee exposure to PM2.5 for worksites before each shift and periodically thereafter, as needed to protect the health of the employee, by any of the following methods:

   a. Check AQI forecasts and the current AQI for PM2.5 from any of the following: South Coast Air Quality Management District website, U.S. EPA AirNow website, U.S. Forest Service Wildland Air Quality Response Program website, California Air Resources Board website, local air pollution control district website, or local air quality management district website; or

   b. Measure PM2.5 levels at the worksite and convert the PM2.5 levels to the corresponding AQI in accordance with Appendix A.

**V. Communication**

As required by the Illness and Injury Prevention Program (IIPP) a system of communicating wildfire smoke hazards shall be implemented in a language and manner that is readily understandable by employees (Appendix B). The system shall include methods of:

A. Informing employees of

   1. The current AQI for PM2.5

   2. Protective measures available to reduce wildfire smoke exposures.

B. Encourage employees to report:

   1. Worsening air quality or changes in conditions.

   2. Adverse symptoms that may be a result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain.

**VII. Training and Instruction**
As required by the Injury & Illness Prevention Program, the employer shall provide employees with effective training and instruction in a language and a manner that is readily understandable by employees on the following:

A. The health effects of wildfire smoke

B. The right to obtain medical treatment without fear of reprisal.

C. How employees can obtain the current Air Quality Index (AQI) for PM2.5.

D. The requirements in Cal/OSHA’s Title 8, section 5141.1 about wildfire smoke.

E. The employer's two-way communication system.

F. The employer's methods to protect employees from wildfire smoke.

G. The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.

**VIII. Control of Harmful Exposures to Employees**

A. In emergencies, including rescue and evacuation, subsections (f)(2) and (f)(3) do not apply, and employers shall comply with subsection (f)(4). Emergencies include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response.

B. Engineering Controls. The employer shall reduce employee exposure to PM2.5 to less than a current AQI of 151 by engineering controls whenever feasible, for instance by providing enclosed buildings, structures, or vehicles where the air is filtered. If engineering controls are not sufficient to reduce exposure to PM2.5 to less than a current AQI of 151, then the employer shall reduce employee exposures to the extent feasible.

C. Administrative Controls. Whenever engineering controls are not feasible or do not reduce employee exposures to PM2.5 to less than a current AQI of 151, the employer shall implement administrative controls, if practicable, such as relocating work to a location where the current AQI for PM2.5 is lower, changing work schedules, reducing work intensity, or providing additional rest periods.

D. Control by Respiratory Protective Equipment

1. Where the current AQI for PM2.5 is equal to or greater than 151, but does not exceed 500, the employer shall provide respirators to all employees for voluntary use in accordance with section 5144 and encourage employees to use respirators. Respirators shall be NIOSH-approved devices that effectively protect the wearers from inhalation of PM2.5, such as N95 filtering face-
piece respirators. Respirators shall be cleaned, stored, maintained, and replaced so that they do not present a health hazard to users. See Appendix C to this section for training regarding voluntary use of respirators.

   i. **NOTE:** For voluntary use of filtering face-pieces, such as N95 respirators, some of the requirements of section 5144 do not apply, such as fit testing and medical evaluations.

   2. Where the current AQI for PM2.5 exceeds 500, respirator use is required in accordance with section 5144. The employer shall provide respirators with an assigned protection factor, as listed in section 5144, such that the PM2.5 levels inside the respirator correspond to an AQI less than 151.

E. **AQI-Based Decision Making Matrix**

   1. This matrix takes into account AQI levels, and is meant to aid in decision making for various campus stakeholders. This can be found in Appendix D.

Appendix A Measuring PM2.5 Levels at the Worksite  
Appendix B Information to be Provided to Employees  
Appendix C Training on Voluntary Respirator Use  
Appendix D AQI-Based Decision Making Matrix

**Responsible Executive:** Vice President for Administration and Finance  
**Responsible Office:** Environmental Health and Safety  
**Originally Issued:** 11/2020  
**Revised:** 03/2022
Appendix A to CSUF Wildfire Program
Measuring PM2.5 Levels at the Worksite

A. An employer may use a direct-reading particulate monitor to determine PM2.5 levels if the employer can demonstrate that it has complied with this appendix and selected a monitor that:

   a. Does not underestimate employee exposures to wildfire smoke; or

   b. May underestimate wildfire smoke exposures, but information on the possible error of the monitor was obtained from the manufacturer and has been accounted for when determining exposures to PM2.5 to ensure that employee exposure levels are not underestimated.

B. The monitor shall be designed and manufactured to measure the concentration of airborne particle sizes ranging from an aerodynamic diameter of 0.1 micrometers up to and including 2.5 micrometers. The employer may use a monitor that measures a particle size range beyond these limits, if the employer treats the results as the PM2.5 levels.

C. The employer shall ensure that the monitor is calibrated and maintained.

D. The employer shall use the following table to convert the PM2.5 concentration to the AQI for PM2.5.

<table>
<thead>
<tr>
<th>PM2.5 in Micrograms per Cubic Meter (μg/m³)</th>
<th>Air Quality Index (AQI) – Categories for PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 12.0</td>
<td>0 to 50</td>
</tr>
<tr>
<td>12.1 to 35.4</td>
<td>51 to 100</td>
</tr>
<tr>
<td>35.5 to 55.4</td>
<td>101 to 150</td>
</tr>
<tr>
<td>55.5 to 150.4</td>
<td>151 to 200</td>
</tr>
<tr>
<td>150.5 to 250.4</td>
<td>201 to 300</td>
</tr>
<tr>
<td>250.5 to 500.4</td>
<td>301 to 500</td>
</tr>
</tbody>
</table>

E. The person supervising, directing, or evaluating workplace monitoring for PM2.5 shall have the training or experience necessary to apply this section and to ensure the correct use of the monitor and the interpretation of the results, so that exposures are not underestimated.
### Air Quality Guide for Particle Pollution

<table>
<thead>
<tr>
<th>AQI Level</th>
<th>Description</th>
<th>Tips for Unusually Sensitive People</th>
<th>Tips for Everyone Else</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good (0-50)</td>
<td>It's a great day to be active outside.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (51-100)</td>
<td>Some people who may be unusually sensitive to particle pollution.</td>
<td>Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Everyone else: It's a good day to be active outside.</td>
<td></td>
</tr>
<tr>
<td>Unhealthy for Sensitive Groups (101-150)</td>
<td>Sensitive groups include people with heart or lung disease, older adults, children and teenagers.</td>
<td>Sensitive groups: Reduce prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.</td>
<td>People with asthma should follow their asthma action plans and keep quick relief medicine handy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</td>
<td></td>
</tr>
<tr>
<td>Unhealthy (151-200)</td>
<td>Everyone</td>
<td>Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.</td>
<td>Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.</td>
</tr>
<tr>
<td>Very Unhealthy (201-300)</td>
<td>Everyone</td>
<td>Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better.</td>
<td>Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.</td>
</tr>
<tr>
<td>Hazardous (301-500)</td>
<td>Everyone</td>
<td>Everyone: Avoid all physical activity outdoors. Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.</td>
<td></td>
</tr>
</tbody>
</table>
The following information must be provided to affected employees of wildfire smoke:

A. The health effects of wildfire smoke, including:

   I. Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is “particulate matter,” the tiny particles suspended in the air.

   II. Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death.

   III. People over 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects.

   IV. The smallest, and usually the most harmful, particulate matter is called PM2.5 because it has a diameter of 2.5 micrometers or smaller.

B. The right to obtain medical treatment without fear of reprisal.

   I. Employers shall allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not punish affected employees for seeking such treatment. Employers shall also have effective provisions made in advance for prompt medical treatment of employees in the event of serious injury or illness caused by wildfire smoke exposure.

C. How employees can obtain the current Air Quality Index (AQI) for PM2.5.

   I. Various government agencies monitor the air at locations throughout California and report the current AQI for those places. The AQI is a measurement of how polluted the air is. An AQI over 100 is unhealthy for sensitive people and an AQI over 150 is unhealthy for everyone.

   II. Although there are AQIs for several pollutants, Title 8, section 5141.1 about wildfire smoke only uses the AQI for PM2.5.

   III. The easiest way to find the current and forecasted AQI for PM2.5 is to go to www.AirNow.gov and enter the zip code of the location where you will be working. The current AQI is also available from the U.S. Forest Service at https://tools.airfire.org/ or a local air district, which can be located at
www.arb.ca.gov/capcoa/dismap.htm. Employees who do not have access to the internet can contact their employer for the current AQI. The EPA website www.enviroflash.info can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

D. The requirements in Title 8, section 5141.1 about wildfire smoke.

I. If employees may be exposed to wildfire smoke, then the employer is required to find out the current AQI applicable to the worksite. If the current AQI for PM2.5 is 151 or more, the employer is required to:
   1. Check the current AQI before and periodically during each shift.
   2. Provide training to employees.
   3. Lower employee exposures.
   4. Provide respirators and encourage their use.

E. The employer's two-way communication system.

I. Employers shall alert employees when the air quality is harmful and what protective measures are available to employees.

II. Employers shall encourage employees to inform their employers if they notice the air quality is getting worse, or if they are suffering from any symptoms due to the air quality, without fear of reprisal.

F. The employer's methods to protect employees from wildfire smoke.

I. Employers shall take action to protect employees from PM2.5 when the current AQI for PM2.5 is 151 or greater. Examples of protective methods include:
   1. Locating work in enclosed structures or vehicles where the air is filtered.
   2. Changing procedures such as moving workers to a place with a lower current AQI for PM2.5.
   3. Reducing work time in areas with unfiltered air.
   4. Increasing rest time and frequency, and providing a rest area with filtered air.
   5. Reducing the physical intensity of the work to help lower the breathing and heart rates.

G. Distribution E-Mail that is sent out to campus employees by EHS.
Campus Community:

Two major local wildfires, the Silverado Fire near Irvine and the Blue Ridge Fire near Yorba Linda, are affecting air quality conditions in the region. The fires are producing substantial amounts of smoke and impacting air quality conditions throughout the region, including the CSUF campuses. Unhealthy or higher AQI levels due to PM2.5 concentrations are possible in areas of direct smoke impacts.

Smoke from wildfires contain chemicals, gases, and fine particles (PM2.5) that can harm health and cause reduced lung function, worsen asthma or other existing heart and lung conditions, and cause coughing, wheezing, and difficulty breathing.

Ways to limit your exposure to wildfire smoke:

- Remain indoors with windows and doors closed or seek alternate shelter.
- Avoid vigorous physical activity.
- Run your air conditioner if you have one. Make sure it has a clean filter and that it is recirculating the indoor air to prevent bringing additional smoke inside. Avoid using a whole-house fan or a swamp cooler with an outside air intake.
- Create a clean air space in your home by using a portable air cleaner instead of or in addition to your air conditioner.
- Avoid using indoor or outdoor wood-burning appliances, including fireplaces and candles.
- Do not rely on dust masks or cloth face coverings for protection. Paper “dust masks” and cloth face coverings can block large particles, such as sawdust, but do not protect your lungs from the small particles or gases in wildfire smoke. Disposable respirators such as N-95 or P-100 respirators can offer some protection if they are worn properly and have a tight fit.
• Older adults, young children, pregnant women, and people with heart diseases or lung diseases (such as asthma) may be especially sensitive to health risks from wildfire smoke.

Training:

• For information/training on protection from wildfire smoke and the voluntary use of N95 respirators, please click on the following hyperlink: Protection from Wildfire Smoke (CSU).

Additional Information:

• Current information on the Silverado Fire can be found on the Incident Information System at: https://www.fire.ca.gov/incidents/2020/10/26/silverado-fire/
• Current information on the Blue Ridge Fire can be found on the Incident Information System at: https://www.fire.ca.gov/incidents/2020/10/26/blue-ridge-fire/
• South Coast AQMD Advisory updates can be found at the following link: http://www.aqmd.gov/advisory
• To subscribe to air quality alerts, advisories, and forecasts by email, go to http://AirAlerts.org
• To view current air quality conditions by region in an interactive map, see http://www.aqmd.gov/agimap
• For real-time air quality information, maps, notifications, and health alerts in your area, download our award-winning South Coast AQMD app at: http://www.aqmd.gov/mobileapp
• Air quality forecasts are available at http://www.aqmd.gov/forecast
• For a map of South Coast AQMD Forecast Areas, see http://www.aqmd.gov/ForecastAreas
A. The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.

   I. Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke, when they are properly selected and worn. Respirator use can be beneficial even when the AQI for PM2.5 is less than 151, to provide additional protection.

   II. When the current AQI for PM2.5 is 151 or greater, employers shall provide their workers with proper respirators for voluntary use. If the current AQI is greater than 500, respirator use is required.

   III. A respirator should be used properly and kept clean.

   IV. Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandannas will not provide protection against wildfire smoke. An N95 filtering facepiece respirator, shown in the image below, is the minimum level of protection for wildfire smoke.

      1. Read and follow the manufacturer's instructions on the respirator's use, maintenance, cleaning and care, along with any warnings regarding the respirator's limitations. The manufacturer's instructions for medical evaluations, fit testing, and shaving should also be followed, although doing so is not required by Title 8, section 5141.1 for voluntary use of filtering facepiece respirators.

      2. Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect employees against gases or vapors, and it will not supply oxygen.

      3. Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.

      4. Employees who have a heart or lung problem should ask their doctor before using a respirator.

B. How to properly put on, use, and maintain the respirators provided by the employer.

   I. To get the most protection from a respirator, there must be a tight seal around the face. A respirator will provide much less protection if facial hair interferes with the seal. Loose-fitting powered air purifying respirators (PAPRs) may be worn by people with facial hair since they do not have seals that are affected by facial hair.

   II. The proper way to put on a respirator depends on the type and model of the respirator.

   III. For those who use an N95 or other filtering face-piece respirator mask that is made of filter material:

      1. Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
2. Pinch the metallic tab (if there is one) of the respirator over the top of the nose so it fits securely.

*Drawing Showing Proper Fitting of a Filtering Facepiece Respirator (shaving is not required for voluntary respirator use)*
<table>
<thead>
<tr>
<th>Levels of Health Concern</th>
<th>PM2.5 (24hr avg; μm/m³)</th>
<th>Current AQI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive Groups</td>
<td>35.5-55.4</td>
<td>Unhealthy</td>
</tr>
<tr>
<td></td>
<td>55.5-100</td>
<td>Hazardous</td>
</tr>
<tr>
<td></td>
<td>101-200</td>
<td>Very Unhealthy</td>
</tr>
<tr>
<td></td>
<td>201-500</td>
<td>Hazardous</td>
</tr>
<tr>
<td></td>
<td>&gt;500</td>
<td>Hazardous</td>
</tr>
<tr>
<td></td>
<td>&gt;650</td>
<td>Hazardous</td>
</tr>
</tbody>
</table>

### Levels of Health Concern
- **Sensitive Groups**: Individuals with heart or lung disease, older adults, pregnant women, and children.
- **Unhealthy**: Everyone.
- **Very Unhealthy**: Everyone.
- **Hazardous**: Everyone.
- **Beyond the AQI**: Everyone.

### Actions
- **Outdoor Workers/Volunteers**: Consider making N95 respirators available for voluntary use.
- **Classes**: Consider modifying class schedules and adjusting for extreme heat.
- **Campus Operations**: Consider modifying services to reduce outdoor air intake.
- **Health System Operations**: Consider modifying staff schedules to reduce outdoor air intake.
- **Athletics & Outdoor Rec**: Consider modifying practices and implementing mitigation actions.
- **Outdoor Camps/Events**: Consider making N95 respirators available for voluntary use.
- **Children’s Center**: Follow recommendations for the Very Unhealthy category.

### Recommendations
- For outdoor activities, cancel events that are necessarily or absolutely necessary.
- For indoor activities, consider making N95 respirators available for voluntary use.
- For all outdoor activities, take breaks and do less intense activities.
- For these activities, consider moving activities indoors or rescheduling them to another day or time.

### Health System Operations
- Consider modifying family practice operations and implementing mitigation actions.
- Consider modifying practice schedules and adjusting for extreme heat.

### Academic Affairs
- Consider modifying coursework and implementing mitigation actions.
- Consider modifying academic activities and adjusting for extreme heat.

### Patients
- Consider modifying patient care areas and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.

### Wildfire Smoke Program
- Follow recommendations for the Very Unhealthy category.
- Follow recommendations for the Very Unhealthy category.
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- Follow recommendations for the Very Unhealthy category.

### Appendix D to CSUF Wildfire Smoke Program

<table>
<thead>
<tr>
<th>PM2.5 (24hr avg; μm/m³)</th>
<th>Current AQI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good 32-95</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Moderate 32.1-35.4</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Unhealthy for Sensitive Groups 35.5-55.4</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Unhealthy 55.5-100</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Very Unhealthy 101-200</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Hazardous 200-500</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Beyond the AQI &gt;500.4</td>
<td>No Action Anticipated.</td>
</tr>
<tr>
<td>Everyone.</td>
<td>No Action Anticipated.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who is Affected?</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone.</td>
<td>Follow recommendations for the Very Unhealthy category.</td>
</tr>
<tr>
<td>Everyone.</td>
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<td>Everyone.</td>
<td>Follow recommendations for the Very Unhealthy category.</td>
</tr>
</tbody>
</table>

### Recommendations
- For outdoor activities, consider making N95 respirators available for voluntary use.
- For indoor activities, consider making N95 respirators available for voluntary use.
- For all outdoor activities, take breaks and do less intense activities.
- For these activities, consider moving activities indoors or rescheduling them to another day or time.

### Health System Operations
- Consider modifying patient care areas and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.

### Academic Affairs
- Consider modifying coursework and implementing mitigation actions.
- Consider modifying academic activities and adjusting for extreme heat.
- Consider modifying academic activities and adjusting for extreme heat.
- Consider modifying academic activities and adjusting for extreme heat.
- Consider modifying academic activities and adjusting for extreme heat.
- Consider modifying academic activities and adjusting for extreme heat.

### Patients
- Consider modifying patient care areas and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
- Consider monitoring indoor air quality and implementing mitigation actions.
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### Wildfire Smoke Program
- Follow recommendations for the Very Unhealthy category.
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