



CITY OF PETALUMA
 ADMINISTRATIVE POLICY
 Established: January 2021

Wildfire Smoke Policy

Purpose:

This policy specifies safe work practices when the air quality equals or exceeds the Air Quality Index (AQI) of 151, for particulate matter (PM) 2.5 or smaller, due to wildfire smoke. This program applies to employees exposed to such conditions for greater than one (1) cumulative hour per work shift.

This program covers the City safe work practices and procedures for preventing injury and illness from wildfire smoke in accordance with the City Injury and Illness Prevention Program (IIPP) and California Code of Regulations, Title 8, General Industry Safety Orders, Division 1, Chapter 4, Section 5141.1, Protection from Wildfire Smoke.

Scope:

This Policy applies to all City employees, contractors, persons performing voluntary work or any other person who is authorized to work in any capacity for the City of Petaluma.

Compliance:

The City of Petaluma intends to fully and faithfully comply with any and all applicable laws, including, but not limited to, the Americans with Disabilities Act (“ADA”), as amended by the ADA Amendments Act of 2008 (“ADAAA”), and the California Fair Employment and Housing Act (“FEHA”) in the administration of this policy and associated protocol. Please contact the Human Resources Department with regard to any inquires related to reasonable accommodations.

Terms Used in this Policy:

A. “Air Quality Index”

The Air Quality Index is the method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis. Current AQI is also referred to as the “NowCast”, and represents data collected over time periods of varying length in order to reflect present conditions as accurately as possible. The current AQI is divided into six categories as shown in the table below, adapted from Table 2 of Title 40 Code of Federal Regulations, Part 58 Appendix G.

Air Quality Index (AQI) for Particulate Matter (PM) 2.5 Microns in Diameter or less	Levels of Health Concern
<u>0 to 50</u>	<u>Good</u>
<u>51 to 100</u>	<u>Moderate</u>

<u>101 to 150</u>	<u>Unhealthy for Sensitive Groups</u>
<u>151 to 200</u>	<u>Unhealthy</u>
<u>201 to 300</u>	<u>Very Unhealthy</u>
<u>301 to 500</u>	<u>Hazardous</u>
<u>Note: 1 Micron = 1/25,000th inch</u>	

B. “NIOSH”

The National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention (NIOSH) is the federal agency that tests and approves respirators for use in the workplace.

NIOSH Link: <https://www.cdc.gov/niosh/topics/respirators/default.html>

C. “PM2.5”

PM2.5 is solid particles and liquid droplets suspended in air, known as Particulate Matter (PM), with an aerodynamic diameter of 2.5 micrometers or smaller.

D. “Wildfire Smoke”

Wildfire Smoke is emissions from fires in wildlands; i.e. sparsely populated areas covered primarily by grass, brush, trees, crops, or a combination thereof.

Policy:

If employees may be exposed to wildfire smoke, then the applicable supervisor is required to determine the current AQI applicable to the worksite. If the current AQI for PM2.5 is 151 or greater, the supervisor is required to:

- (1) Check the current AQI before and periodically during each shift;
- (2) Provide training to employees;
- (3) Reduce employee exposures;
- (4) Provide and encourage use of personal respirator protection.

IDENTIFICATION OF HARMFUL EXPOSURES

For worksites covered by this program, departments shall determine employee exposure to PM2.5 prior to each shift and, periodically thereafter, as needed to protect the health of the employee, by any of the following methods:

- (1) Check AQI forecasts and the current AQI for PM2.5 from any of the following:
 - U.S. EPA AirNow website at <https://www.airnow.gov/>
 - U.S. Forest Service Wildland Air Quality Response Program website
 - California Air Resources Board website
 - Bay Area Air Quality Management District website at <http://www.baaqmd.gov/>
 - Or any other local air pollution control district website; or
- (2) Obtain AQI forecasts and the current AQI for PM2.5 directly from the EPA, California Air Resources Board, Bay Area Air Quality Management District or any

other local air pollution control district, by telephone, email, text, or other effective method; or

(3) Measure PM2.5 levels at the worksite and convert the PM2.5 levels to the corresponding AQI.

The City does not need to periodically check employee exposure to PM2.5 if the City assumes the current AQI for PM2.5 is greater than 500 and uses that assumption to comply with this policy.

Employees are encouraged to download the EPA's "AIRNow" iPhone application for instantly available AQI and related health information. (See Appendix A, Training, for further information on how to download the application)

Note: Worksites covered by this policy are to include any site where it can be reasonably anticipated that employees may be exposed to wildfire smoke.

The following City worksites and operations are **exempt** from this policy:

- A. Enclosed buildings or structures in which the air is filtered by a mechanical ventilation system and the department ensures that windows, doors, bays, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- B. Enclosed vehicles in which the air is filtered by a cabin air filter and the department ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- C. The City demonstrates that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to a current AQI of 151 or greater by measuring PM2.5 levels at the worksite.
- D. Employees exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.
- E. Firefighters engaged in wildland firefighting.

COMMUNICATION

As required by CCR section 3203, departments shall implement a system for communicating wildfire smoke hazards in a form readily understandable to affected employees.

Methods of communication shall include, but not be limited to, pre-job/pre-task planning meetings, daily briefings, emails, text messaging, conference calls, and other effective means. Employees shall be informed of the current AQI for PM2.5 and protective measures available to employees to reduce their wildfire smoke exposures.

Employees are encouraged to inform their supervisor of any wildfire smoke hazards at the worksite and of any worsening outdoor conditions. They also should report any adverse symptoms resulting from wildfire exposure. Employees shall not be retaliated against for

informing the City of any wildfire smoke hazards, worsening conditions, or symptoms. Departments, through management or supervisory personnel, shall alert employees when the air quality is harmful and what protective measures are available to employees.

The City shall also provide employees with effective training and instruction as required by section 3203.

HAZARD CONTROL METHODS FOR EMPLOYEE EXPOSURES

The City recognizes that some employees may experience a more severe reaction to exposure to PM_{2.5} based on pre-existing medical conditions. Employees with such pre-existing medical conditions should provide Human Resources with an appropriate certification from a medical professional identifying any specific restrictions, including application of the following engineering and administrative controls at a lower PM_{2.5} threshold.

- A. **Engineering Controls:** Departments shall reduce the employee exposure to PM_{2.5} 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 enough to reduce exposure to PM_{2.5} to less than a current AQI of 151, then the department shall reduce employee exposure as much as feasible.
- B. **Administrative Controls:** Whenever engineering controls are not feasible, or do not reduce employee exposures to PM_{2.5} 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 PM_{2.5} is lower, changing work schedules, reducing work intensity, or providing additional rest periods.
- C. **Emergencies:** In emergencies, including rescue and evacuation, the Engineering Controls and Administrative Controls discussed in subsections A and B do not apply. Emergencies include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response.
- D. **Personal Protective Equipment (N95 particulate respirators):**
 - 1. Where the current AQI for PM_{2.5} is equal to or greater than 151, but does not exceed 500, the department shall provide N95 particulate respirators to all affected employees for voluntary use in accordance with Title 8 CCR, §5144 and encourage employees to use respirators. Respirators shall be National Institute for Occupational Safety and Health (NIOSH) approved devices that effectively protect the users from inhalation of PM_{2.5}, such as N95 filtering face piece respirators. The N95 particulate respirator is the minimum level of protection required for wildfire smoke. In addition to N class respirators, R and P class units with efficiency ratings of 95, 99, and 100 are also acceptable under NIOSH guidelines.
 - 2. Respirators shall be cleaned, stored, maintained, and replaced so that they do not present a health hazard to users. Respirators must be replaced at least every eight hours, or sooner if the respirator becomes damaged, soiled, or breathing becomes difficult. An adequate supply of N95 particulate respirators shall be made readily available at each affected worksite when necessary.

Note: For voluntary use of filtered respiratory protection face pieces, such as N95 particulate respirators, fit testing and medical evaluations are not required.

3. Where the current AQI for PM2.5 exceeds 500, a higher level of respirator use is required in accordance with Title 8 CCR, §5144. The City shall provide respirators with an assigned protection factor such that the PM2.5 levels inside the respirator correspond to an AQI less than 150. Refer to the City policy or contact the City Risk Manager for assistance in such a circumstance.
4. 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. The proper way to put on a respirator depends on the type and model of the respirator.
5. How to properly don, use, and maintain particulate respirators:
 - Step 1. Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
 - Step 2. Pinch the metal sealing strip (if there is one) of the respirator over the top of the nose so it fits securely.



For a respirator that relies on a tight seal to the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.

Respirators must be replaced if they get damaged, deformed, dirty, or difficult to breathe through. Particulate respirators are disposable respirators that cannot be cleaned or disinfected. At a minimum, replace particulate respirators at the beginning of each shift. If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help if necessary.

RESPONSIBILITIES

Management shall:

- A. Ensure the elements of this policy are followed by all affected employees, personal service contractors, interns, and volunteers under their supervision.
- B. Ensure employees are provided the resources and training necessary to safely implement this program.
- C. Ensure all potentially exposed departmental job classifications and tasks affected by this program are identified.
- D. Ensure periodic audits and inspections of the workplace are conducted to maintain compliance with this and all other departmental safety programs.

Supervisors shall:

- A. Ensure training is provided for all affected employees under their supervision.
- B. Maintain accurate training records.
- C. Ensure effective two-way communication exists between employees and management.
- D. Monitor employee exposure to unhealthy AQI of 151 or greater during the work shift.
- E. Ensure adequate supplies of approved particulate respirators are readily available at the worksite.
- F. Periodically monitor the AQI when the index is equal to or exceeds 151 and ensure this information is effectively communicated in a form readily understandable to all employees.
- G. Ensure employees have access to prompt medical care without fear of reprisal.

Employees shall:

- A. Follow the procedures and safe work practices of this policy.
- B. Inform their supervisor if they notice air quality is getting worse or they are suffering symptoms due to poor air quality.
- C. Attend safety training on the application of this program and inform their supervisors if they do not understand any of the provisions herein.

REFERENCES/RESOURCE MATERIALS

Appendix A - Employee Training Standards
Appendix B - Training Handout / Poster

If this policy conflicts with current statutory or case law, the law prevails.

Approved:

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Peggy Flynn, City Manager

3/10/2022

Date

APPENDIX A EMPLOYEE TRAINING STANDARDS

Employee Training Interval:

1. Initial training shall be provided to all potentially affected employees.
2. Retraining shall be required upon changes to this program.
3. Annual refresher training is recommended.

Departments shall ensure that all potentially affected employees are trained on the following:

A. The health effects of wildfire smoke.

Although there are many hazardous chemicals in wildfire or any combustible smoke environment, 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. 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. People over 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects.

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.

Departments 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. Departments 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 or any combustible smoke environment, smoke exposure; i.e. access to contacting “911” would constitute an effective provision.

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

The City method for finding 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. Alternatively, the current AQI is also available from the U.S. Forest Service at <https://tools.airfire.org/> or the Bay Area Air Quality Management District at (1-800-HELP-AIR) or visit their website at <http://www.baaqmd.gov/>. Employees who do not have access to the internet can contact their supervisor 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.

As an additional resource, the EPA ‘AIRNow’ application for iPhone and Android allows for immediate access to current and forecasted AQI.

If you need assistance having the application installed on a City smartphone contact the Information Technology Department.

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

Respirators can be an effective way to protect employee health by reducing exposure to wildfire or any combustible smoke environment, 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.

When the current AQI for PM2.5 is 151 or greater, departments shall provide their workers with NIOSH approved particle respirators for voluntary use. If the current AQI is greater than 500, a higher level of respirator use is required. A respirator should be used properly and kept clean.

The following precautions shall be taken:

- (1) Departments shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification must appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example).

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 particulate respirator, is the minimum level of protection for wildfire smoke.

- (2) 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 face piece respirators.
- (3) 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.
- (4) Employees should keep track of their respirator so that they do not mistakenly use someone else's.
- (5) Employees who have a heart or lung problem should ask their doctor before using a respirator.

APPENDIX B TRAINING HANDOUT / POSTER

Wildfire smoke can irritate your eyes, nose, throat, and lungs. It can make you cough and wheeze, and can make it hard to breathe. If you have asthma or another lung disease, or heart disease, inhaling wildfire smoke can be especially harmful.

If you cannot leave the smoky area, good ways to protect your lungs from wildfire smoke include staying indoors and reducing physical activity. Wearing a special mask called a “particulate respirator” can also help protect your lungs from wildfire smoke. These respirators should be used mostly by people who have to go outdoors.

Will a respirator protect me from wildfire smoke?

Respirators labeled NIOSH N95 or N100 provide protection – they filter out PM2.5 particles but not hazardous gases (such as Carbon Monoxide or organic vapors). Contact your supervisor to request a filtering facepiece respirator.

- Choose an N95 or N100 respirator that has two straps that go around your head. Don’t choose a one-strap paper dust mask or a surgical mask that hooks around your ears – these don’t protect against the fine particles in smoke.
- Choose a size that fits over your nose and under your chin. It should seal tightly to your face. These respirators don’t come in sizes that fit young children
- Don’t use bandanas or towels (wet or dry) or tissue held over the mouth and nose. These may relieve dryness but they won’t protect your lungs from wildfire smoke.

Anyone with lung or heart disease or who is chronically ill should check with their health care provider before using any respirator. Using respirators can make it harder to breathe, which may make existing medical conditions worse. The extra effort it takes to breathe through a respirator can make it uncomfortable to use them for very long. Respirators should be used mostly by people who have to go outdoors.

Respirators shouldn’t be used on young children – they don’t seal well enough to provide protection. They also don’t seal well on people with beards.

How do I use my respirator?

- Place it over your nose and under your chin, with one strap placed below the ears and one strap above. Adjust the mask so that air cannot get through at the edges.
- Pinch the metal sealing strip tightly over the top of your nose.
- The respirator fits best on clean shaven skin.
- Throw it away when breathing through it gets difficult, if it gets damaged or dirty. Replace respirators at least once per shift.
- It’s harder to breathe through a respirator, so take breaks often if you work outside.
- If you feel dizzy or nauseated, go to a less smoky area, take it off, notify your supervisor and get medical help if you don’t feel better.

<https://www.dir.ca.gov/dosh/Worker-Health-and-Safety-in-Wildfire-Regions.html>



N95 respirators can help protect your lungs from wildfire smoke. Straps must go above and below the ears.



A one-strap paper mask will **NOT** protect your lungs from wildfire smoke.



A surgical mask will **NOT** protect your lungs from wildfire smoke.