

# Santa Clara University

## Air Quality Decision Matrix for Wildfire Smoke

Prolonged and significant poor air quality can pose a variety of negative impacts on the campus population and campus operations. Any impact will vary dramatically based on location (indoor vs. outdoor), level and duration of physical activities etc. Depending on the air quality severity and the forecasted duration, it may become necessary to:

- Move outdoor activities to indoor spaces having mechanical ventilation and air filtration, or
- Postpone/ cancel activities.

The following matrix summarizes the primary areas where University level decisions may be needed and provides guidance to assist decision makers in determining when to adjust or cancel certain activities. This matrix references EPA's AQI for air quality and associated level(s) of concern. AQI forecasts and real time measurements can be used to supplement and improve decision making when available. *Departments are encouraged to work with staff and students to voluntarily adjust these guidelines which may follow stricter AQI threshold levels.*

**All AQI readings will be taken from AirNow website for zip codes [95053](#) and [94709](#).**

For actions listed in the table below, departments are to direct activities based on guidance provided by Campus Safety Services.

Overview of Procedures:

- Campus Safety Services monitors AQI, and discusses proposed action internally using EPA's AirNow, NOAA's National Weather Service, and other tools.
- AQI levels at, or exceeding 200 for a period of 24 hours or more will trigger the activation of the EOC. The EOC then advises the EAG who determines the final decision regarding campus activities and informs stakeholders.
- Each department sends a specific email notifying their affected staff or groups of identified action items. General wildfire smoke impacts may be communicated via SCU Bronco Alert.

*This document is intended as general guidance for the institution when making decisions during wildfire smoke events based on air quality. These are definitive actions that must take place when, but not before, the AQI threshold is met.*

----- Actions -----

AQI Level of Health Concern	Current AQI Value	Persons Likely Affected	Classes and Instructional Activities	Outdoor Work and Indoor Work with Unfiltered Air	Indoor Work	Athletics and Campus Recreation	Outdoor Events and Camps
<b>Good</b>	<b>0-50</b>	None Expected	No Action Anticipated	No Action Anticipated	No Action Anticipated	No Action Anticipated	No Action Anticipated
<b>Moderate</b>	<b>51-100</b>	Unusually sensitive to air Pollution. People with lung and heart disease	No Action Anticipated	Unusually sensitive people may require work accommodations	No Action Anticipated	No Action Anticipated	No Action Anticipated
<b>Unhealthy for Sensitive Groups</b>	<b>101-150</b>	Members of sensitive groups may experience health effects. The general public is not likely to be affected	No Action Anticipated for indoor classes. Consider moving outdoor classes to remote or indoors	Consider limiting work outdoors or in unfiltered locations  Sensitive groups may require work accommodations and N95 masks	Keep doors and windows closed. Building HVAC set to recirculation if available	<b>Athletics and Campus Recreation staff should consult with individuals who fall into sensitive groups about participation in outdoor practice, competition and events</b>	At the higher end of the AQI range, consider moving activities indoors.  For youth camps consider cancellation if activities cannot be moved to indoor facilities.

<p><b>Unhealthy</b></p>	<p><b>151-200</b></p>	<p>Everyone</p>	<p>No Action Anticipated for indoor classes with filtered air</p> <p>Move all outdoor classes to remote or indoors with filtered air</p>	<p><b>Provide N95 respirator for voluntary use indoor and outdoors</b></p> <p><b>Cease outdoor work except for outdoor emergency repairs.</b></p> <p><b>For non-emergency operations, cease outdoor work, reassign staff indoors or advise sensitive individuals to not to report for work.</b></p>	<p>Keep doors and windows closed. Building HVAC set to recirculation if available</p>	<p><b>Shorten or modify recreational activity to limit prolonged or heavy exertion</b></p> <p><b>Campus Recreation practice, competition and events should be canceled</b></p> <p>For outdoor practice, competition and events, move indoors if possible or cancel. If AQI exceeds 150, end within 1 hour</p>	<p>Consider cancellation of more complex outdoor events or move events indoors to filtered air or online</p>
<p><b>Very Unhealthy</b></p>	<p><b>201-300</b></p>	<p>Everyone</p>	<p><b>In consultation with the President and Provost Offices, cancel or restructure classes if current AQI levels have maintained in this range and are expected to continue for a period exceeding 24 hours</b></p>	<p><b>Suspend work where possible. For Critical Operations, provide N95 respirator for voluntary use</b></p>	<p>To the extent possible, curtail campus operations</p> <p>Keep doors and windows closed</p>	<p><b>Outdoor Athletic practice, competition and events, should be moved indoors or rescheduled/relocated</b></p> <p>Decisions regarding cancellation of Athletic events will be made in accordance with NCAA policy.</p>	<p><b>Cancel outdoor events involving physical activity</b></p> <p><b>Consider cancellation of outdoors events that do not involve physical activity</b></p>

<b>Hazardous</b>	<b>301-500</b>	Everyone	Follow recommendations for the Very Unhealthy category	<p><b>Follow recommendations for the Very Unhealthy category</b></p> <p><b>At AQI levels over 500, outdoor work should be totally suspended</b></p> <p><b>Staff must use N95 respirators for AQI levels over 500</b></p>	<b>Follow recommendations for the Very Unhealthy category</b>	<p><b>Cancel or move indoors all outdoor Athletic practice, competition and events</b></p> <p>Consider cancellation of indoor practice, competition and events based on indoor air quality measurements</p>	<p><b>Cancel all outdoor events and camp activity</b></p> <p>Consider cancellation of indoor camps that require participants or families to travel to and from campus</p>
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**Key Matrix Characteristics:**

- The matrix is designed for use when wildfire smoke conditions result in worsening and unhealthy air quality for the Santa Clara Valley. It does not apply if there is a direct threat of wildfire and/or other significant hazard to the location, or for smog-related air quality conditions.
- Suggested required actions are in **bolded red text**. These are definitive actions that must take place when, but not before, the corresponding AQI threshold is met.
- Non-bolded actions are recommended for consideration and should be implemented at the discretion of University staff.
- The matrix is not a stand-alone document. It should be used in conjunction with existing response plans, protocols, and procedures including the Emergency Operations Plan.

## 2024 - Final Updates to the Air Quality Index (AQI) for Particulate Matter

- On February 7, 2024, the U.S. Environmental Protection Agency (EPA) announced a final rule to strengthen the nation's National Ambient Air Quality Standards (NAAQS) for fine particle pollution, also known as fine particulate matter (PM<sub>2.5</sub>) or soot. EPA is setting the level of the primary (health-based) annual PM<sub>2.5</sub> standard at 9.0 micrograms per cubic meter (µg/m<sup>3</sup>) to provide increased public health protection, consistent with the available health science.
- EPA is changing some breakpoints in the U.S. Air Quality Index (AQI) to reflect the revised level of the primary annual PM<sub>2.5</sub> standard and to reflect recent health science on PM<sub>2.5</sub>. The AQI is EPA's color-coded tool for communicating air quality to the public.
- The AQI updates will become effective May 6, 2024. EPA will update its tools for communicating the AQI to reflect the changes. This includes the AirNow website.
- The daily AQI must be reported for metropolitan areas with more than 350,000 people. The final rule requires that the daily AQI be reported seven days a week. EPA made this change, because many states are already doing this. The updated reporting requirement applies for all AQI pollutants.
- Technology also makes it possible for EPA to estimate a near-real time AQI, called the "NowCast AQI." Using automated processes, state, local and Tribal air quality agencies provide hourly air quality monitoring information to the AirNow program for nearly 900 areas across the country. The agencies provide this information as a public service.
- AirNow converts the monitoring data to the NowCast AQI and displays it on the AirNow website and app. AirNow and the air quality agencies provide this information to help people make decisions about their outdoor activities based on the most recent monitoring data. Many agencies also report the NowCast AQI on their own websites and applications.

**Updates to the EPA's AQI for particulate matter, specifically PM2.5, will affect AQI readings in several ways:**

1. **Lower Thresholds for PM2.5 Levels:** The AQI will now reflect the stricter annual PM2.5 standard of 9  $\mu\text{g}/\text{m}^3$ , down from the previous 12  $\mu\text{g}/\text{m}^3$ . This means that the same concentration of PM2.5 will now result in higher AQI values, indicating worse air quality than before. For example, an AQI reading that previously indicated "moderate" air quality might now indicate "unhealthy for sensitive groups" due to the stricter standards.
2. **Increased Frequency of High AQI Days:** Areas that previously met the older PM2.5 standards might now exceed the new lower limits more frequently. This will result in more days with higher AQI values, signaling poorer air quality and potentially triggering more frequent air quality alerts and advisories.
3. **Enhanced Public Awareness and Health Warnings:** The updated AQI will provide more precise information about health risks associated with PM2.5 exposure. This will help the public, especially sensitive groups such as children, the elderly, and those with respiratory or cardiovascular conditions, to take necessary precautions during high pollution days.
4. **More Detailed AQI Categories:** The AQI categories may be adjusted to reflect finer distinctions between different levels of PM2.5 pollution. This can include more granular breakdowns within the "good," "moderate," "unhealthy," and other categories to provide clearer guidance on health impacts.