Environment, Health & Safety
FACILITIES PLANNING & MANAGEMENT
UNIVERSITY OF WISCONSIN–MADISON

UW-Madison Air Quality Guidance

Outdoor air pollutants can affect health by causing short-term symptoms like shortness of breath or coughing. They can also play a role in causing diseases like asthma or respiratory illnesses. Individuals engaging in physical activity are at greater risk of inhaling a variety of pollutants. People with pre-existing pulmonary or cardiac conditions are at a greater risk for health impacts related to the inhalation of pollutants.

The AirNow website should be utilized to monitor air quality for individuals completing physical activity outdoors. In Dane County, poor air quality is usually caused by elevated levels of ozone or fine particulate matter.

Ozone

Ground level ozone is created when emissions from cars and businesses mixes with other chemicals in the air and chemically react in the presence of sunlight and heat.

Fine Particulate Matter (PM 2.5)

Particulate matter is tiny pieces of dust, dirt and other materials in the air we breathe. It can make the air look dirty, hazy, or brown. Sources of particulate matter include:

- vehicle exhaust
- power plants and other industrial processes
- stoves, fireplaces, and home wood burning
- smoke from wildfires

Air pollutants can play a role in causing asthma, other respiratory illnesses, and cardiovascular diseases. Older adults, children, and people with certain health conditions like asthma, emphysema, and heart and lung conditions are at a higher risk of experiencing symptoms when air quality is poor. Breathing in ozone or particulate matter can cause:

- throat irritation
- shortness of breath
- coughing or wheezing
- chest pain
- asthma attacks
- worsening of other health conditions

The Air Quality Index (AQI)

Air Quality Index (AQI) measures how polluted the air is. The AQI is a single number, presented on a scale of 0 – 300+. The higher the AQI number, the worse the pollution and the greater the health risk. An AQI of 100 or below is usually considered acceptable. When it exceeds 100, air quality may pose health concerns—initially affecting sensitive groups like children, the elderly, or people with respiratory conditions. As values increase, the risks extend to the general population. AQI readings above 300 indicate hazardous conditions for everyone.

Activity modification suggestions based on AQI

Daily AQI Color	Levels of Concern and Value	Description of Air Quality	Suggested Activity Modifications
Green	Good (0 to 50)	Air quality is satisfactory, little or no risk.	No action anticipated
Yellow	Moderate (51 to 100)	Air quality is acceptable. However, there may be a risk for those who are unusually sensitive to air pollution.	Unusually sensitive individuals may require precautions.
Orange	Unhealthy for Sensitive Groups (101 to 150)	Members of sensitive groups may experience health effects. The general public is less likely to be affected.	Inform employees about the Air Quality Index (AQI) so those with sensitivities can take necessary precautions. Make voluntary use N-95 masks available for those that wish to reduce exposure.
Red	Unhealthy (151 to 200)	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.	Limit outdoor time and reduce activity intensity to minimize exertion. Make voluntary use N-95 masks available for those that wish to reduce exposure.

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Daily AQI Color	Levels of Concern and Value	Description of Air Quality	Suggested Activity Modifications
Purple	Very Unhealthy (201 to 300)	The risk of health effects is increased for everyone.	Consideration should be given to rescheduling outdoor activities and tasks if possible or moving indoors. Prolonged exposure and heavy exertion should be avoided. Make voluntary use N-95 masks available for those that wish to reduce exposure.
Maroon	Hazardous (301 and higher)	Health warning of emergency conditions: everyone is more likely to be affected.	Reschedule outdoor activities or move them indoors. Avoid extended time outside and strenuous physical effort. If outdoor work is necessary, provide N-95 masks for voluntary use.

Strategies for Managing Air Quality Alerts (>150)

- **Promote awareness** of ozone and particulate matter pollution and share practical steps employees can take.
- **Ensure timely communication** with outdoor workers about current and forecasted air quality changes.
- **Adjust outdoor tasks** by allowing more breaks and assigning lighter duties. Move intense activities indoors or reschedule when possible. Use this time for training or administrative work.
- **Schedule outdoor work strategically**, avoiding periods with high AQI—like afternoons when ozone levels typically peak.
- **Monitor symptoms** such as coughing, wheezing, chest tightness, and difficulty breathing. Encourage employees to take breaks, reduce activity, go indoors, or use prescribed medications. Employees that use inhalers should carry them at all times.
- **Seek medical help** if symptoms persist.
- On **particulate matter alert days (e.g., wildfire smoke)**, provide voluntary N95 respirators for outdoor workers.