

UPDATES TO THE AIR QUALITY INDEX (AQI) FOR OZONE AND OZONE MONITORING REQUIREMENTS

On Oct. 1, 2015, the U.S. Environmental Protection Agency (EPA) strengthened the nation's air quality standards for ground-level ozone to improve public health and environmental protection. The updated standards will improve air quality broadly across the country, and are particularly important for at-risk groups, which include children, people of all ages with asthma and other respiratory diseases; older adults; and people who are active outdoors, especially outdoor workers, among others. EPA also updated the Air Quality Index (AQI) for ozone and the ozone monitoring season in many states to help inform the public about daily air quality.

Highlights:

- EPA is updating the Air Quality Index (AQI) based on the strengthened ozone health standard, to provide the public with the most up-to-date information about air quality where they live.
- To ensure ozone is measured when it is likely to approach the level of the updated standards, the agency is updating the monitoring season in 32 states and the District of Columbia.
- EPA is updating requirements to modernize and streamline the Photochemical Assessment Monitoring Stations (PAMS) Network, which helps provide information on ozone formation and transport.
- The agency also is updating the Federal Reference Method for monitoring to include an additional method that is based on advanced technology and monitoring methods.

Informing the Public: Updates to the Air Quality Index

- The AQI is EPA's color-coded tool for telling the public how clean or polluted the air is, and recommending steps people can take, if necessary, to reduce their daily exposure to pollution. The index AQI converts ozone concentrations to a number on a scale from 0 to 500. This scale is used by cities and states across the country to report current and daily ozone concentrations and for daily ozone air quality forecasting.
- EPA is updating the breakpoints for each AQI category for ozone, based on the strengthened primary (health) ozone standard and information from the health studies examined as part of the review of the standard.
- The agency is setting the 100 value of the index at the 70 parts per billion (ppb), the level of the primary 8-hour ozone standard. An AQI of 100 is the upper end of the "Moderate" or

“Code Yellow” range, and marks the level above which EPA begins cautioning at-risk groups. The “Unhealthy for Sensitive Groups” or “Code Orange” range (AQI of 101-150) will begin at 71 ppb and will extend to 85 ppb.

- EPA is not changing the level at the top of the index (an AQI value of 500). This level is typically set equal to the Significant Harm Level, a level that represents imminent danger. The Significant Harm Level for ozone is 600 ppb, averaged over two hours. Some states, where air quality has at times previously reached levels dangerous to public health, are required to have contingency plans in place to avoid reaching this level.
- Cities with populations of 350,000 or more are required to report the AQI each day. But many more cities report the index and issue daily AQI forecasts as a public service.
- The updated AQI breakpoints are outlined in the table below. The new breakpoints will take effect 60 days after the final standards are published in the Federal Register, bringing updated air quality and health information to millions of people every day.

AQI Category	Index Values	Breakpoints in the 2008 AQI (ppb, 8-hour average)	Updated Breakpoints (ppb, 8-hour average)
Good	0 - 50	0-59	0-54
Moderate	51 - 100	60-75	55-70
Unhealthy for Sensitive Groups	101 – 150	76-95	71-85
Unhealthy	151 – 200	96-115	86-105
Very Unhealthy	201 – 300	116-374	106-200
Hazardous	301 –500	375 to the Significant Harm Level*	201 to the Significant Harm Level*

**The Significant Harm Level for ozone is 600 ppb, two-hour average*

Measuring Ozone When It Forms: Updated Monitoring Requirements

Extending the Ozone Monitoring Season

- Air quality monitors play a critical role in notifying the public when air quality is unhealthy. EPA requires ozone monitoring only during the time of year when weather conditions are

most favorable for ozone formation. This season varies by state: in some states with warmer climates, monitoring is required year-round; however, in states where the climate is colder, ozone monitoring is required for as little as four months during the summertime.

- EPA is updating the ozone monitoring season for 32 states and the District of Columbia. A review of all available monitoring data from 2010-2013 (including data from year-round air quality monitors) shows that ozone can be elevated earlier in the spring and last longer into the fall than some states previously were required to measure. Recently, in the west, ozone concentrations have been above the level of the standards even during the wintertime.
- Many states are already operating their ozone monitors longer than the required monitoring season. More than half of the nation's 1,300 ozone monitors currently are operated year-round. This includes monitors that are required to operate year-round, based on an area's ozone season, and monitors that are voluntarily operated year-round by states and other organizations.
- EPA is extending the ozone monitoring season, to ensure compliance with the 2008 and 2015 ozone standards, and to ensure citizens are alerted when ozone reaches levels of concern. This is particularly important for at-risk groups, which include children, people of all ages with asthma and other respiratory diseases; older adults; and people who are active outdoors, especially outdoor workers, among others.
- The monitoring season will be extended by one month for 22 of the 32 states that are required to monitor ozone and for the District of Columbia, with longer extensions in 10 other states. These include states where ozone can be elevated in the winter: Wyoming, where monitoring would be extended by two months; Colorado, where the ozone season would be extended by five months; and Utah, where monitoring would be required for an additional seven months. In addition, ozone monitors located at the multi-pollutant NCore monitoring sites will operate year-round.
- EPA Regional Administrators will still be allowed to approve changes to states' ozone monitoring seasons; however, this action revokes any previous monitoring season waivers.
- The expanded monitoring season requirements will become effective January 1, 2017.

Streamlining the Photochemical Assessment Monitoring Stations (PAMS) Network

- The PAMS network consists of multi-pollutant monitoring sites that are designed to measure ozone, the pollutants that form ozone, and meteorology in order to better understand ozone formation and to evaluate national and local ozone-reduction options.
- In the past, ozone nonattainment areas classified as serious, severe, or extreme were required to operate between two and four PAMS monitoring sites. During the past 30 years, however, both monitoring technology and priorities have changed. EPA is updating the PAMS monitoring requirements to modernize and streamline the network, based on a 2011

evaluation of the PAMS network, along with consultation with EPA's independent science advisers (the Clean Air Scientific Advisory Committee) and state air agencies.

- The changes include:
 - Requiring PAMS monitoring at existing NCore monitoring site in large urban areas with a population of 1,000,000 or more. (NCore is a multi-pollutant monitoring network for particles, gases and meteorology.) This change reduces the required number of PAMS sites while improving geographic distribution and reducing redundancy in the network.
 - Requiring states that operate PAMS sites to measure nitrogen dioxide, hourly speciated VOCs, eight-hour averaged carbonyls on every third day and hourly averaged mixing height, in addition to a number of other meteorological parameters (e.g. wind speed and direction). EPA included a waiver option that will allow the use of less frequent, longer-averaged VOC measurements in limited situations.
 - Establishing Enhanced Monitoring Plans to allow monitoring agencies with moderate, serious, severe or extreme nonattainment areas and states in the Ozone Transport Region (OTR) the flexibility to determine and collect the additional data they need to better understand their ozone problems.
- States will need to comply with the new PAMS monitoring requirements at NCore sites by June 1, 2019. Enhanced Monitoring Plans will be due within two years after EPA designates nonattainment areas or by Oct. 1, 2019, whichever is later.

Modernizing Federal Reference Methods

- To determine whether an area is meeting the ozone standard, ozone monitoring data must be obtained using either a Federal Reference or Federal Equivalent monitoring method.
- A Federal Reference Method uses monitoring equipment and analytical techniques that together are considered the “gold standard” for measuring a pollutant in the air. EPA uses these methods to evaluate other equipment and alternative analytical methods, which vendors may make available for states to purchase. When approved, these methods are known as Federal Equivalent Methods.
- EPA is updating the Federal Reference Method for ozone to include an additional method that is based on advanced technology and monitoring methods. Current Federal Reference and Federal Equivalent ozone monitors will continue to meet EPA requirements under the change, so states are not required to replace their existing ozone monitors.

Where to Get More Information:

- To read the final rule and other fact sheets:
<http://www.epa.gov/ozonepollution/actions.html>
- For current air quality and next-day AQI forecasts: www.airnow.gov

- Download the free AirNow app and get current air quality and forecasts on the go. See www.airnow.gov for more information.

