



FAQ

Your source for information on Kansas City's current air quality status

Is Kansas City's air clean?

Not always. Our metropolitan area typically experiences 10 to 15 days each year on which air quality does not meet federal standards, primarily due to high concentrations of ground-level ozone. Ozone, commonly known as smog, is a health risk to those who live and work in our area.

What is ozone and how does it form?

Ozone is a chemical compound composed of three oxygen atoms. Ozone occurs naturally in the upper levels of our atmosphere, about 10 to 30 miles above the surface of the earth, where it blocks out harmful ultraviolet radiation from the sun. Ground-level ozone, on the other hand, is a man-made pollutant that irritates the respiratory system and can cause serious health problems.

Ground-level ozone forms when volatile organic compounds (VOCs) mix with nitrogen oxides (NOx) in the presence of heat and sunlight. NOx is emitted by cars, power plants, industrial plants and other sources. VOC emissions come from cars, lawn equipment, chemical plants, oil-based paints, auto body shops, print shops, and household products such as window cleaners. Because heat and sunlight are needed to form ozone, it is generally only a problem during the summer months.

Why is ozone a problem?

Everyone, including healthy adults, can be affected by ground-level ozone. Ground-level ozone irritates the sensitive tissue of the eyes, nose and lungs, causing inflammation, chest pain, and difficulty breathing. Hospital admissions and emergency room visits significantly increase when ozone concentrations are high. Many patients are children who suffer from asthma.

Where are ozone concentrations highest in our area?

Most of the VOC and NOx emissions that form ozone are generated in the urbanized parts of the region — areas with more businesses, people and traffic. On the hot, sunny days when ozone is most likely to reach unhealthy concentrations, our prevailing winds come from the south, so the pollution generated in the urban core is carried slowly north. Our highest ozone concentrations generally occur north of the Missouri River, but any part of the region may experience unhealthy levels of ozone.



Although several days of bad air quality every summer may not seem like a major issue, there could be some big consequences:

- Ozone can trigger asthma attacks, which can be life threatening. More than 25,000 children in the Kansas City area have asthma. The EPA revised the ozone standard in 1997 to better protect public health.
- Areas that violate federal air quality standards are required to adopt more stringent regulations — regulations that could result in significant costs for area businesses.
- Areas that the EPA designates as “nonattainment” often have trouble attracting new business development — and new jobs.
- Many sources of ozone pollution also produce particulate matter pollution and the greenhouse gases that contribute to global warming.

GOOD

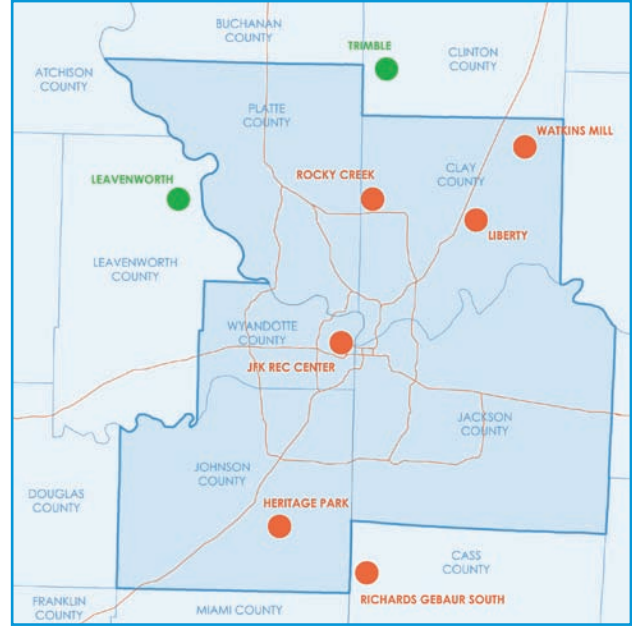
MODERATE

ORANGE ALERT

RED ALERT

Check the daily SkyCast at www.marc.org/airq

The Kansas City Region's Ozone Monitors



The EPA uses readings from the six monitors marked in red to assess our region's ozone pollution levels. However, high readings at nearby monitors, indicated in green, might cause the EPA to consider revising the region's air quality planning boundary (the area shaded in darker blue). Nearby areas with emissions sources contributing to monitor violations would be considered in defining the planning boundary.

What is the national ozone standard?

To protect public health, the Environmental Protection Agency developed a national standard that sets limits on ground-level ozone concentrations. These limits were set to protect public health, especially that of sensitive populations such as people with asthma, children and the elderly.

From April 1 to October 31 each year, ozone monitors make measurements at six locations around the region. Hourly values are recorded, and a rolling eight-hour average is calculated for each monitor. If the eight-hour average reading at any monitor reaches 85 parts per billion (ppb) or higher on a given day, that monitor is said to have "exceeded" the standard on that day.

"Violations" of the standard aren't based on just one year of data, though. The EPA takes the fourth-highest reading from each monitor every year, and averages that over three years. If this three-year average equals or exceeds 85 ppb at a given monitor, that monitor is said to be in "violation." If even one monitor violates the standard, the whole region is considered to be in violation.

What would a violation mean for the region?

A violation of the federal ozone standard has three possible outcomes:

- EPA could redesignate our region a "nonattainment" area and require us to develop a new regulatory plan for reducing emissions. The types of new regulations we would have to adopt could depend on a variety of factors, including the severity of the pollution and the anticipated effectiveness of different pollution-control measures.
- EPA could allow us to keep our current attainment designation but still require a new regulatory plan.
- EPA could allow us to keep our attainment designation without requiring a new regulatory plan. In this scenario, we would still need to implement new regulations, known as contingency measures, which are part of the regulatory plan that is currently under development.

If EPA is confident that existing contingency measures would bring the region back into compliance with federal air quality standards, state and local planners believe there is less likelihood that the agency would redesignate Kansas City a nonattainment area.

How likely is a violation this year?

Pretty likely. The fourth-highest reading from the monitor in Liberty, Mo., is usually around 85 to 95 ppb. Because of high readings in 2005 and 2006 — which are part of the three-year average the EPA uses — this monitor would need a fourth-highest reading of only 74 ppb in 2007 to register a violation.

Two other monitors — Rocky Creek and Watkins Mill — are also at risk of a violation. While a record cool summer could allow us to avoid a violation this year, a normal Kansas City summer will likely result in an air quality violation.

So what does it mean to be designated “nonattainment”?

The costs of nonattainment can vary depending on how severe the air quality problem is, the kinds of regulations that are chosen to reduce emissions, and the degree to which air pollution affects public health. However, even for areas that are only marginally out of compliance with federal air quality standards, the costs of nonattainment can be significant.

What is the regulatory process?

Areas like Kansas City that have failed to meet federal standards for ground-level ozone in the past are required by the Clean Air Act to have plans for staying in compliance with the ozone standard. States take the lead in developing these plans, called State Implementation Plans, or SIPs, which must contain specific air quality goals and legally enforceable measures for achieving those goals.



The Kansas Department of Health and Environment and the Missouri Department of Natural Resources work closely with local leaders, through the Mid-America Regional Council’s Air Quality Forum, to develop and update the SIPs. The Air Quality Forum is made up of local elected officials, state and local government staff, business and development interests and community group members who work together to identify the region’s clean air goals and to develop policies that help meet those goals.



The SIPs currently in place contain regulations that limit emissions from a variety of sources. For example, since the late 1990s, drivers in Kansas City have been using a less volatile blend of gasoline during the summer months. The fuel costs a few cents more per gallon, but keeps hundreds of tons of pollution out of the air. Other regulations limit emissions from

printing and auto painting operations, industrial solvent use, and the manufacture of paints, solvents and pesticides.

While these regulations may add to the cost of producing goods, they also provide benefits in terms of cleaner air and better health. Clean air also makes the region more competitive in attracting business investments and jobs.

The Clean Air Action Plan

Regulations are important tools for **reducing emissions from specific point sources** (such as businesses and factories) and mobile sources (such as trucks, buses and cars), but voluntary action is also important to keeping the air clean.

The Clean Air Action Plan (CAAP) is an award-winning local plan to reduce ozone-forming emissions on a voluntary basis.

The plan was designed to achieve both short and long-term emissions reductions. It complements our regulatory plans and takes a more comprehensive approach to improving environmental quality. Many of the strategies are already in use.

The CAAP contains four categories of emission reduction strategies:

- Power plant controls
- Diesel engine retrofits
- Public education
- Long-term initiatives to promote sustainable development

The CAAP is available on the Mid-America Regional Council’s Web site at www.marc.org/Environment/airQ/reports.htm.



FAQ air

What about health?

Who is most at risk from the effects of ozone pollution?

Ground-level ozone is harmful for everyone, especially to people with respiratory problems such as asthma.

Children are particularly sensitive to high ozone concentrations. Children are more vulnerable to air pollution than adults because they breathe much more air per pound of body weight and their respiratory defenses are not fully developed.



What should I do to avoid the risks on Ozone Alert days?

Cut back on or reschedule strenuous outside activities. Stay indoors in a well-ventilated or air-conditioned building.

Can I still exercise outdoors on high ozone days?

During the summer months when ozone poses the greatest risk, the best time to exercise is between 5 and 8 a.m.

Once the sun comes up, ground-level ozone begins to form and pollutant concentrations begin to rise. Elevated ozone concentrations usually persist until about 7 p.m. Given a choice between exercising in the morning or the evening, morning is the better option.

How Can You Help?

What can you do to help reduce ozone pollution?

About half of all ozone-forming emissions come from everyday people doing everyday things, so we all have the ability to help reduce ozone pollution. Here are a few steps you can take:

- **Drive less:** Carpool, take the bus, and walk or bike whenever possible. Combine short trips.
- **Refuel in the evening:** Putting gas in your car in the evening allows fumes to dissipate overnight, making it less likely that they will contribute to high ozone the following day. During warm months, don't fuel up in the morning — especially on Ozone Alert days.
- **Stop at the click:** When putting gas in your car, stop refueling when the pump automatically shuts off. Overfilling the tank increases the likelihood of spills and can ruin your car's vapor recovery system.
- **Don't paint in the heat of the day:** Avoid using oil-based paints, solvents and varnishes. Don't use them at all on Ozone Alert days.
- **Don't mow on Ozone Alert days:** Lawn mowers and other gas-powered yard equipment don't have emissions controls. They create far more air pollution per gallon of fuel burned than cars do.
- **Landscape with native plants:** Landscaping reduces the area you have to mow, and native plants require less water, less mowing and fewer chemicals.
- **Spread the word:** Talk to your family, friends and neighbors about air quality. If everyone takes small steps and changes just a few habits, Greater Kansas City will be on its way to cleaner air.



Check the SkyCast

The SkyCast is the daily ozone forecast issued by Mid-America Regional Council from April 1 through October 31 each year. When poor air quality is expected, MARC issues an Ozone Alert. On Ozone Alert days, area residents should take action to reduce emissions and protect their health by avoiding prolonged exposure to outdoor air.



The SkyCast is available at www.marc.org, through *The Kansas City Star* and other local media outlets, or by phone at 913-383-7557.

Mid-America Regional Council
600 Broadway, Suite 300, Kansas City, MO 64105
816-474-4240 • www.marc.org