Draft 2027 Minnesota Air Monitoring Network Plan

At a glance

What is ambient air monitoring?

Ambient air monitoring measures the levels of different air pollutants in the outdoor air. MPCA follows rules and regulations set by the EPA. Most monitors are set up for long periods of time to determine long-term exposure and to track how pollution levels change.

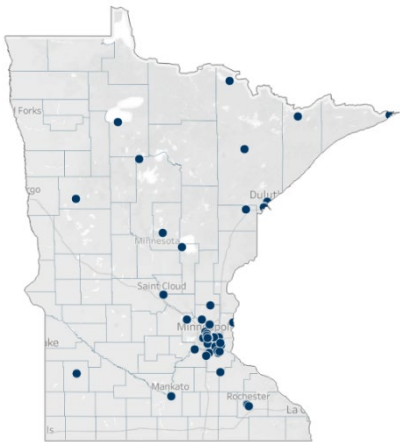
Why do we monitor ambient air quality?

The data collected by the MPCA are used for a variety of purposes including:

- monitoring compliance with the National Ambient Air Quality Standard (NAAQS)
- public reporting of the Air Quality Index (AQI) and air quality forecasting
- assessing population exposure and risk and monitoring specific emissions sources
- determining pollution trends and addressing ways to reduce pollution levels
- investigating background conditions
- evaluating computer models

Where are the monitoring sites?

The Minnesota Pollution Control Agency (MPCA) monitors ambient air quality throughout Minnesota. There are 62 sites for ambient air quality monitoring in Minnesota, including seven tribal sites. Tribal sites are owned and operated by tribal governments and supported, in part, by MPCA. Some sites monitor multiple pollutants while others have only one.



In addition to these sites, there is a network of industrial air quality monitors that are owned and operated by specific industrial facilities to adhere to their air permit requirements for monitoring ambient air. There is also a network of outdoor air quality sensors and a mobile monitoring station that are used for air quality forecasting and surveying for future monitoring.

What's being monitored?

The MPCA monitors different types of air properties and pollutants. This includes pollutants like fine particles and ozone, but also weather properties like wind speed and temperature. The MPCA monitors the six pollutants established by the 1970 Clean Air Act to show compliance with the National Ambient Air Quality Standards (NAAQS). These six pollutants are particulate matter ($PM_{2.5}$ and PM_{10}), lead (Pb), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and carbon monoxide (CO). Total suspended particulate matter (TSP) and hydrogen sulfide (H_2S) are also monitored to show compliance with Minnesota Ambient Air Quality Standards (MAAQS).

The MPCA also monitors pollutants that pose a potential risk to human health and the environment but are not regulated by national standards. These pollutants are called air toxics and include volatile organic compounds (VOCs), carbonyls, and metals. Other pollutants are monitored through national networks, including acid rain, mercury (Hg), and PFAS as well as chemical speciation of $PM_{2.5}$.

How do we monitor ambient air?

Various equipment is used to monitor ambient air. All equipment follows state or federally approved methods of measuring and collecting data. Equipment and processes go through rigorous quality assurance testing to ensure all data is precise and accurate.

Pollutants are monitored one of two ways:

- Continuous monitors send data directly to MPCA databases. Readings are incremental on a real-time basis, such as every 5 or 15 minutes or every hour. Data are collected and analyzed at the site.
- Samples are collected on a set schedule and analyzed in the laboratory. Samples are usually 24-hour averages, collected midnight to midnight once every three days or once every six days. Samples are collected at sites and transported to the MPCA lab for further analysis.

What does the data say?

- Air pollution trends are generally going down over the past 20+ years
- Recently, there have been no exceedances of:
  - Carbon monoxide, ozone, oxides of nitrogen, sulfur dioxide
- Recently, there have been exceedances of:
  - $PM_{2.5}$, lead, total suspended particulates (TSP), and PM_{10}

What's changing in 2027?

The following changes are proposed in the draft plan:

- Site 27-123-0868 (Ramsey Health Center) might have to be relocated after the building was left vacant

Where can I find more information?

Annual Minnesota Air Monitoring Network Plans provide details on ambient air quality monitoring in Minnesota. They are submitted to EPA each year to show compliance with air monitoring network regulations, to describe proposed changes for the upcoming year, and to provide specific information on each of the existing and proposed monitoring sites. Details regarding the location of individual sites, monitoring objectives, and proposed changes are provided. Data for several pollutants are summarized to show current conditions relative to State and Federal air quality standards.

The most recent Minnesota Air Monitoring Network Plans are available online. For more information or to view the plan, visit the Minnesota Pollution Control Agency's Air quality monitoring webpage (https://www.pca.state.mn.us/air-water-land-climate/air-quality-monitoring).