How air quality monitors are placed

Site away from pollution sources

Don’t place monitors too close to pollution sources such as busy streets, smoking patios or factories.

Install 3-6 feet above ground

Because we are interested in understanding people’s exposure to air pollution, it is best measured close to the height where people breathe.

Allow free air flow

Buildings, fences and trees can prevent free air flow to monitors. Place monitors in an open area with some distance between the monitor, buildings, and trees.

Consider infrastructure needs

Ensure electricity and internet access. Make sure monitor is protected (such as with fencing), but is accessible for staff to calibrate and collect samples.

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Air Toxics

What are air toxics?

Air toxics, also called hazardous air pollutants, can be linked to serious health issues such as cancer or birth defects. Coal dust is known to contain some air toxics metals.

How dangerous are air toxics?

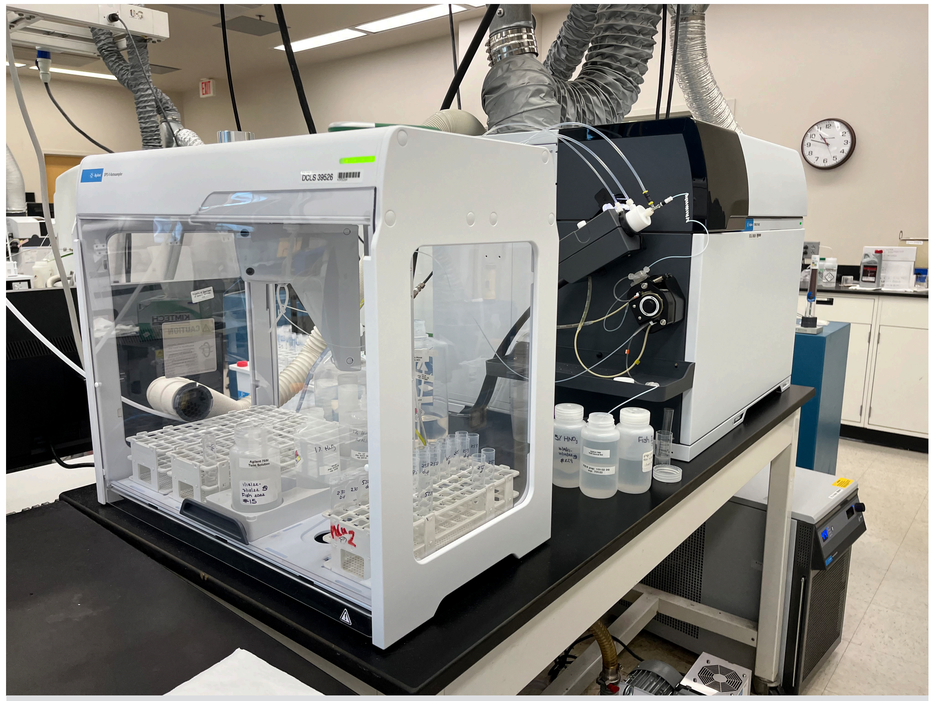
This can be different for each type of pollutant. This is why there is generally no ambient “standard,” or limit, for this category of pollution.

What are my risks from exposure to air toxics?

Because there are so many types of air toxics, and not all types of air toxics can be regularly measured, EPA and states often use modeled, or estimated, risk information. DEQ will collect and analyze air toxics metals collected in the community to gain a better understanding of the actual risks from air pollution.

How are metal air toxics measured?

After samples are collected, they are analyzed by a spectroscope. It heats the sample, and the excited atoms emit different colors of light. These signatures are unique to each element. DEQ will analyze particulate pollution for the presence of arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.



An inductively coupled plasma mass spectrometer, or ICP-MS, is used to heat and ionize samples to analyze their contents.

Air Quality Index

Level of Health Concern	Meaning
Good	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	Health alert: everyone may experience more serious health effects.

DEQ issues air quality forecasts that give advance warning for high pollution. The forecasts give advance warning for people who may be impacted by poor air quality.

The DEQ website also shows real time air quality information. The Air Quality Index describes the level of health concern posed by different levels of air pollution, and is color-coded to help illustrate this concern.

DEQ issues particulate forecasts year-round, and ozone forecasts during ozone season from April through September.

SCAN ME
Current air quality and forecasts

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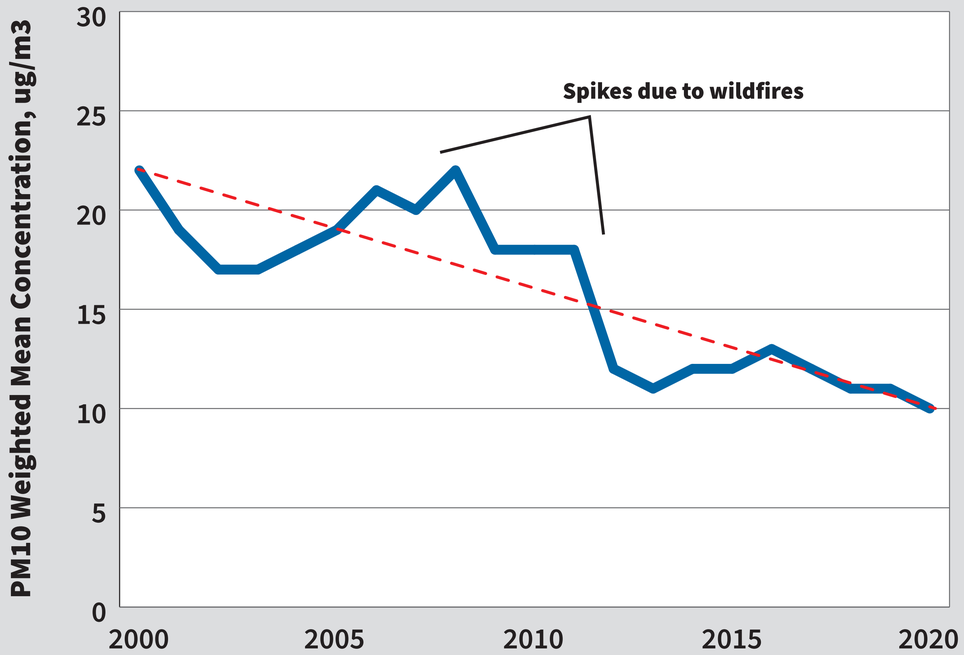
Particulate Pollution

Health-based limits, or “standards,” are set for many common pollutants to ensure that air quality is good and improving.

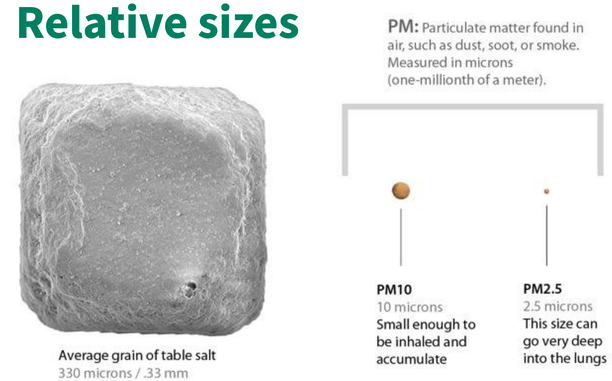
There are standards for particulate pollution, and DEQ’s previous monitoring efforts indicate that particulate pollution levels remain lower than the standard.

Average PM10 Concentrations in Norfolk, 2000-2020



An area meets the PM10 standard if 24-hour average PM10 levels do not exceed 150µg/m3 more than once per year on average over a three-year period. Since 2000, the highest single-day average PM10 level in Norfolk was 88µg/m3, which occurred in 2008 and was related to smoke from a wildfire.

Relative sizes



Particulate pollution refers to pollution made up of tiny particles of solids or liquids suspended in the air. It is so small it can pass into our lungs. High levels can contribute to heart and lung problems such as asthma.

Health impacts can vary due to underlying health conditions and depending on what is in the particulates.

Project Goals

Why is the project being done?

This study will investigate metals from air pollution within this community to create a health risk assessment. This is an important step toward understanding air quality concerns in the community.

Who will benefit?

This project will benefit the community by:

- Providing tools that allow citizens to access real time air quality data
- Helping citizens learn how to interpret air quality data
- Collecting data needed for a Health Risk Assessment
- Building relationships with community members and study partners

What is being studied?

Particulate matter will be sampled and analyzed for metals including: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium. This information will be used to conduct a health risk assessment that can be used by citizens to better understand what health problems could be related to this pollution and local air quality.

How will the study be conducted?

1	**Choose monitor and sensor locations**
2	**Place monitors and sensors in community**
3	**Collect and analyze samples**
4	**Assess health risks**
5	**Final report to community**

Regular meetings to discuss progress will ensure community involvement throughout the two-year period of air monitoring.

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Sign up for project mailing list

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