

Low-Cost Air Quality Sensors

Background

Over the last few years, a variety of low-cost air quality sensors have become commercially available and are being installed by individuals and communities throughout the state. They measure an assortment of pollutants, including particulates, gases and volatile organic compounds. Traditionally, the United States Environmental Protection Agency has determined air quality by using equipment designed to meet rigorous accuracy and precision requirements. Called Federal Reference Method or Federal Equivalent Method monitors, they cost tens of thousands of dollars and require significant infrastructure and trained personnel to operate.



Oregon DEQ regulatory air monitoring site

Current Status

Air quality sensors are in the early stages of technological development, as their accuracy and the value of their measurements are still being evaluated. Currently, the quality of data generated is unknown and the EPA has not approved them for comparison to federal air quality standards. Nonetheless, this new generation of low-cost, highly portable air quality sensors opens an exciting opportunity for people to use this technology for a wide range of applications beyond traditional regulatory monitoring. These include research, personal exposure monitoring, increased coverage, improved spatial and temporal resolution, source identification, emergency protection, education and community engagement. Oregon DEQ and many other groups are conducting research to learn more about these technologies.

For more information

- [US EPA Air Sensor Toolbox](#)
- [Oregon DEQ Sensor Project](#)
- [National Assoc. of Clean Air Agencies Sensor Fact Sheet](#)

- [South Coast AQMD Air Quality Sensor Performance and Evaluation Center](#)
- [The California Air Resources Board Community Air Protection Program](#)
- [2018 Air Sensors International Conference - Podium Presentations](#)



Evaluation of multi-pollutant sensors

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.



Commercial particulate sensors testing



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maintaining and enhancing
the quality of Oregon's air,
land and water.*