



What Can Be Learned from Low Cost Air Quality Monitors: Best Uses and the Current State of Technology

New Jersey Clean Air Council
Annual Public Hearing

April 5, 2017
9:30 a.m.

N.J. Dept. of Environmental Protection
401 E. State Street
Trenton, NJ 08625

How to testify:

The NJ Clean Air Council (CAC) has invited guest speakers to address the issues outlined in this brochure at a public hearing to determine best practices for using crowd-sourced air monitoring data in the State. Anyone can submit detailed written comments to be incorporated into recommendations to the Commissioner of the NJDEP. Written statements in Microsoft Word format will be accepted until May 5, 2017 via email to Heidi.Jones@dep.nj.gov or mailed to New Jersey Clean Air Council, Mailcode 401-02, 401 E. State Street, 2nd Floor, P.O. Box 420, Trenton, NJ 08625-0420. Those who wish to address the Council should contact Heidi Jones at (609) 777-0598 or via email before March 31. To learn more about the CAC, visit <http://www.nj.gov/dep/cleanair/>.

Background

In recent years there has been rapid development of less expensive, more user-friendly air monitoring devices for pollutants such as ozone, particulate matter, oxides of nitrogen and sulfur, and pollen. Traditionally, air quality monitoring equipment has cost in excess of \$100,000 per sampling location. The new generation of devices ranges in cost from \$100 to \$2,000 per device. This new technology is already getting attention from stakeholders worldwide, and in many cases the collected air quality data are being uploaded to the internet without quality control checks or validation ("crowd-sourcing"). As with many new and promising technologies, interested stakeholders are excited to understand the potential uses, accuracy, opportunities, risks and pitfalls. The public, academics, teachers, environmental regulators, representatives from industry, and lawyers are following the developments in this technology closely, understanding the potential value of affordably collecting much more air quality information than ever before.

Some of these new measurement devices are undergoing rigorous quality and accuracy demonstrations, and others are not. The development and standards for this new technology are not controlled by the laws and regulatory agencies that have governed the creation and use of traditional air quality monitoring technologies. Likewise, the uses of the new devices can easily become crowd-sourced, with data directly uploaded to the internet for all to use.

Focus of Public Hearing

For the 2017 New Jersey Clean Air Council (CAC) hearing and report, the CAC is undertaking an effort to create a recommended plan for next steps that New Jersey can use to: 1) promote accurate and reliable low cost air quality monitoring technologies and their use, 2) prioritize their best uses, and 3) manage the data.

To help the New Jersey CAC make recommendations to the NJDEP, we invite you to join us for presentations and discussion following expert testimony by several key presenters. Below is a sample of questions that will be considered by the Council during the discussion:

- What is the available or soon-to-be available equipment, including cost and capabilities?
- Who is assessing accuracy and reliability of the various technologies and manufacturers?
- How can New Jersey accelerate technological advancement of these measurement devices?
- What can and can't we do with the different monitoring tools (e.g., education, awareness, screening, regulatory action, legal action)?
- What pilot projects should be considered to better understand the type and quality of the data that could be collected and how best to collect that data?
- How should the NJDEP and other stakeholders analyze, understand, explain, and share the data?
- Can we use these tools to evaluate potential disproportionate public health impacts in various communities?
- How might these devices best be used by the public, industry and the NJDEP to learn more about air quality?
- What can and can't we do to manage the quality of data and interpretation of data?
- What should be done with the volume of good and bad data that would be made publicly available?
- Can the free flow of crowd-sourced data be managed, and should it?