

Village Green Project Improves Air-Quality Monitoring for Communities

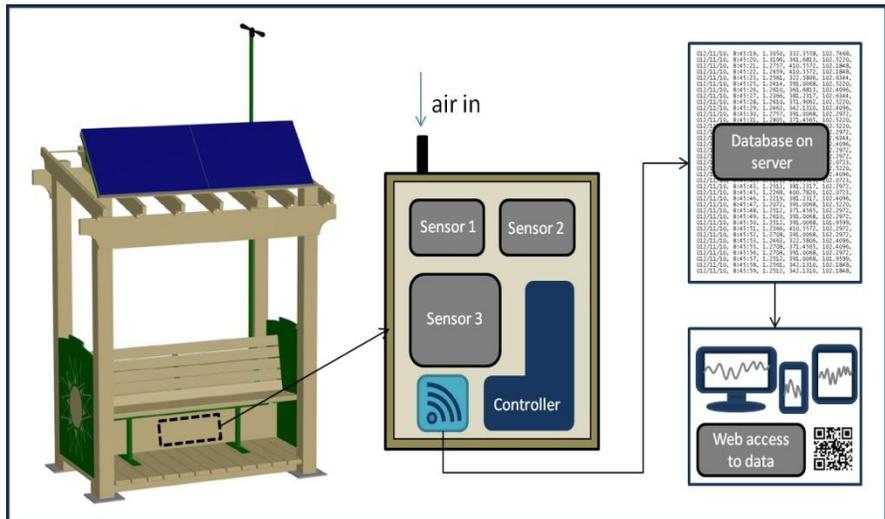
What is the Village Green Project?

The U.S. Environmental Protection Agency (EPA) has developed an innovative, solar-powered air-monitoring system designed and incorporated into a park bench. The study, called the Village Green Project, is being conducted in partnership with Durham County in North Carolina to advance air quality measurement capabilities to states, tribes and local communities.

The prototype monitoring system is located outside the Durham County South Regional Library. EPA began testing the system in the summer of 2013.

This project stems from a growing national interest in using new sensor technologies to learn more about air quality conditions and trends near schools, playgrounds, parks and neighborhoods.

The project's three goals are to:



Air-monitoring system incorporated into a park bench.

- Engage communities in air pollution awareness
- Increase air pollution monitoring coverage
- Advance EPA's ability to measure and communicate air pollution information in real-time at lower cost and maintenance

The Village Green Project name comes from a term used in New England to describe public green spaces in a town. EPA adopted the name to encourage the public to use the bench as a community space and to learn more about air quality.

The system station at the library includes educational information on air quality, and the library is partnering to provide educational materials to patrons.

How does the system work?

Two solar panels charge a battery that operates the entire system. On cloudy days, the system turns off to conserve power.

Solar power supports a number of instruments that provide continuous, minute-by-minute measurements of air and weather.

The system's air pollution sensors measure the pollutants ozone, particle pollution and black carbon, which can cause health problems at elevated levels.

Weather conditions such as wind speed, direction, temperature and relative humidity are also measured since they are important for understanding air quality.

The air pollution and weather data are automatically sent to the Village Green Project website. The public can view the current conditions or view measurements for specific dates and times. The data is also available at the monitoring station using a smartphone.

Information on the system's battery voltage and internal instrument temperatures are also collected.

How Will the Research be Used?

The Village Green Project is intended for research and educational use and to advance the next generation of air quality monitoring tools.

The system is designed with new technology and other state-of-the-art features that make it lower

cost and low maintenance for replication by states, tribes and communities to meet their air quality monitoring needs.

Teachers and students, are encouraged to use the data for educational purposes to learn more about air quality.

The system is also expected to be a tool for communities to investigate options such as reducing vehicle idling that can lead to detectable changes in local air-pollution trends.

The project promotes sustainability because it is low maintenance, uses solar power to conserve energy, and the bench is built from recycled milk jugs.

Websites:

Village Green Project Website:

<http://villagegreen.epa.gov/>

Air Quality Research:

<http://www.epa.gov/research/airscience>

Learn About Air Quality:

www.airnow.gov/

Durham County Library:

www.durhamcountylibrary.org/

Contacts:

Gayle Hagler, Ph.D, EPA,
919-541-2827,
hagler.gayle@epa.gov

Ron Williams, EPA,
919-541-2957,
williams.ronald@epa.gov

