

Village Green Station – Measuring Air Quality from a Park Bench

EPA partners with states and local organizations to provide communities new ways to measure local air quality

[Learn more at www.epa.gov/villagegreen](http://www.epa.gov/villagegreen)

What is the Village Green Project?

The U.S. Environmental Protection Agency (EPA) has developed an innovative prototype air and weather measurement system, called the Village Green station, to provide new ways for communities to learn about local air quality.

Through partnerships with cities and other organizations, EPA is installing the stations across the country for use by the public.

The system is built into a park bench and measures two types of air pollutants – ozone and fine particle pollution – along with weather conditions. These pollutants are regulated by EPA because they can cause health problems at levels that exceed national air quality standards.

The stations can be placed in parks, near roadways, schools or other locations

accessible to the public or where there is interest in local air quality.

The Village Green stations are being used for educational outreach with area schools and the public and for research purposes. They are not intended for use as regulatory monitors.

The development and evaluation of the Village Green station is expected to provide more knowledge about how to build and operate local air quality measurement systems for use by communities. EPA has published details on how to build the station, which are available on the Village Green web page.

Where are Village Green stations located?

Durham, North Carolina

The prototype Village Green station is located outside South Regional Library in Durham County, NC, and has been operating since June 2013.



To further support communities in understanding local air quality, EPA partnered with state and local organizations to install a Village Green station in five additional cities during 2015-2016.

The stations are located at:

Philadelphia, Pennsylvania

The station is located in Independence National Historical Park near the National Constitution

Center in Philadelphia, Pa. The city of Philadelphia, Department of Public Health Air Management Services is hosting the station.

Washington, D.C.

The station is located at the National Zoo in Washington, D.C. The Washington, D.C., District Department of the Environment is hosting the station.

Oklahoma City, Oklahoma

The station is located in the children's garden of the Myriad Botanical Gardens in Oklahoma City, Okla. The Oklahoma Department of Environmental Quality is hosting the station.

Kansas City, Kansas

The station is located outside the Kansas City South Branch Library in Kansas City, Kan. The Kansas Department of Health and Environment is hosting the station.

Hartford, Connecticut

The station is located outside the Connecticut Science Center in Hartford, Conn. The Connecticut Department of Energy and Environmental Protection is hosting the station.

EPA has collaborated with communities to build other Village Green stations,

including the Jane Addams Elementary School in Chicago.

How does the system work?

Two solar panels charge a battery that operate the entire system.

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

The system's air pollution sensors measure the pollutants ozone and fine particle pollution, also known as PM_{2.5}.

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

The air pollution and weather data are automatically streamed to the Village Green Project web page. The data is reviewed instantly for quality assurance prior to being displayed online.

The public can view the current conditions or view measurements for specific dates and times. The data is also available at the stations using a smartphone and through a mobile-friendly website.

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

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