



ENVIRONMENT

New Park Bench Monitors Offer a Pathway to Air Pollution Solutions

With the Help of an Air Quality Advisory Committee, DOEE Installed Four New Park Bench Monitors to Track Different Air Pollutants Across Washington



by **Mya Trujillo**
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One of the park bench monitors is located outside of the Petworth Community Center in Ward 4. Originally, the air quality advisory board suggested it be installed a few blocks away, but DOEE decided placing it here would result in an easier construction and maintenance process. (Mya Trujillo/The Washington Informer)

As Washington works to build on improvements in mitigating air pollution over the last two decades, the Department of Energy and Environment (DOEE) has made strides in diversifying air quality monitoring with the recent installation of four “Village Green” park bench monitors in May.

The city was introduced to the design of these monitors in 2015, when one was installed at the Smithsonian’s National Zoo as part of the Environmental Protection Agency’s (EPA) Village Green Project. This initiative is a community-based method that provides real-time readings of air pollutants, with the data available online and by smartphone. The EPA’s pilot program brought the bench monitors to Washington, North Carolina, Texas, Kansas, Philadelphia, Oklahoma, Connecticut and Illinois.

With four new monitors in the city, DOEE is expanding the EPA’s project to further understand the air quality in Wards 4, 5, 7 and 8. The solar-powered benches, which are made from recycled materials, are located at the

Petworth Recreation Center, Crummell School, Deanwood Community Center and Barry Farm Recreation Center.

“One goal for these park bench monitors is that wherever they’re placed, folks [will] get a better understanding of... what air quality data means and how it can be used,” Maritza Mendoza, Empower DC’s environmental justice manager, told The Informer. “I think greater community awareness of air quality is a useful thing.”

Being placed in communities like Ward 5 that have disproportionately experienced the effects of heavy industrial activity, the information these monitors provide could have the potential to safeguard residents’ physical health.



One of the park bench monitors is located outside of the Petworth Community Center in Ward 4. Originally, the air quality advisory board suggested it be installed a few blocks away, but DOEE decided placing it here would result in an easier construction and maintenance process.

(Mya Trujillo/The Washington Informer)

“It’s unacceptable that in 2026, a lot of reasons that folks are still experiencing all the [environmental] impacts on [their] health and well-being... [and] a lot of those impacts have stemmed from racist decision-making,” Mendoza told The Informer. “I want folks to be able to experience nature and the environment in a positive way.”

The park benches track ozone, particulate matter, black carbon, temperature, humidity and wind. When planning what the monitors would detect and where they’d be located, DOEE partnered with Empower DC to establish a neighborhood air quality advisory board composed of 12 residents and subject-matter experts.

This committee met every few months for one year and provided DOEE with valuable input, giving the government agency more of a community and science-based perspective that they would not have otherwise received.

When suggesting locations to install the monitors, DOEE moved forward with three of the panel’s four suggestions. The only adjusted location was the Petworth Recreation Center, and it was only a few blocks away from the site the advisory committee had recommended. DOEE wanted to steer away from non-District properties to ease the process of gaining permission to build the benches in those locations and maintain them post-installation.

“We also wanted them to be in high-traffic areas, because they are park benches, so [they’re] not like our federal grade monitors where we don’t want people near them, whereas in this case, we actually do want people to see and experience them,” Joseph Jakuta, associate director of Air Quality at DOEE, told The Informer.

Advising and Monitoring: The First Steps Toward Further Solutions

Working with the advisory board did pose a challenge for DOEE and the speed at which they could plan and build the park benches, as they had to consistently meet, listen to, and consider recommendations before finalizing equipment purchases. These extra steps prolonged the process, but Jakuta acknowledges the value of taking this approach.

“We’re very glad we did it that way and took that time, because I think we really have something that’s not just about trying to meet federal standards, but really engage the community when it comes to air pollution issues, in particular, in areas that have been under-monitored,” Jakuta told The Informer.

Another way the advisory board helped broaden the scope of DOEE’s monitoring was by suggesting that the park benches also measure black carbon levels. At first, the government agency aimed only to include ozone and particulate matter, but the committee deemed tracking this pollutant would be impactful in future analyses.

Black carbon, or soot, is one of the many different compounds that make up particulate matter. The contaminant is a product of incomplete combustion, which occurs when fuel is unable to completely react with oxygen to produce carbon dioxide and water. Usually released by the burning of fossil fuels, wood and waste, Black carbon has a warming impact up to 1,500 times stronger than carbon dioxide per unit of mass.

Since diesel vehicles largely contribute to black carbon emissions, and heavy traffic is a main source of pollution in Washington, monitoring the pollutant is essential. Exposure to this pollutant can lead to premature death and negative effects on the cardiovascular system, as well as exacerbate preexisting respiratory diseases such as asthma. Children in Washington are especially vulnerable, as the rates for childhood asthma in the region are among the highest in the nation, ranging from 8.1% to 9.7%.

“If you only measure particulate matter, you are not able to see changes in black carbon, because particulate matter is dominated by other compounds,” Valentina Aquila, an atmospheric scientist and associate professor in American University’s Department of Environmental Science, told The Informer. “Measuring black carbon separately from particulate matter can give insights on local sources such as traffic.”

Aquila, one of the advisory board's members, has been conducting air quality monitoring work for approximately five years in communities like Buzzard Point and Brentwood— places in the city that greatly feel the effects of air pollution due to industrial activity, high concentrations of traffic and limited green space.

She began working more with urban air quality in the summer of 2022, when she was tasked with installing the low-cost PurpleAir sensors that collect localized data on particulate matter in people's homes. Aquila analyzes the measurements and identifies patterns or correlations that allow her to pinpoint sources of pollution.

“Once you identify the sources, you can think about solutions... [and pinpoint] what is going to make a difference,” the atmospheric scientist told The Informer. “There can be policy intervention that limits vehicle emissions, or... that strengthens public transport, or... idling rules that aren't enforced as much as they should be.”

Mendoza hopes the increased presence of park bench monitors in the city, and the vault of information they could provide, will encourage DOEE and other agencies to devise a tangible plan that will further protect the city's most vulnerable communities against the dangers of air pollution.

“Our goal is to still make sure this data is used to improve air quality and not just collect data, but [figure out] how this is actually translating into more transparency of permits or requiring facilities to have limits on when they can operate,” Mendoza told The Informer. “That's still something we're trying to work through and figure out— how these park bench monitors can lead to better enforcement oversight.”

Jakuta emphasized DOEE's commitment to using the new monitors to solve any issues that may present themselves as his department continues to analyze the available information. He acknowledges that only a short amount of time has elapsed since the four new benches were installed, so more discoveries can potentially come to light as time goes on, even though DOEE has yet to observe anything striking via the monitors.

“One of the biggest limitations is having the time and resources to really dig into this data, because as we collect more and more data... it can be challenging,” Jakuta told The Informer. “We do share all this data and welcome anyone, especially local researchers, [who] would like to dig into it with us to help answer questions.”

EPA Funds Four New Air Quality Monitoring Projects Around the DMV

New air quality monitoring projects aimed at promoting environmental justice will launch in D.C., Maryland and Virginia in the coming months, thanks to grants announced by the Environmental Protection Agency on Nov. 3.

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