



Webinar & Panel Discussion

Thursday, April 16th, 2026 | 8 AM Pacific | 15:00 UTC

Chicago, Philadelphia, and D.C.

**How U.S. Cities Are Scaling Air Sensor Networks
for Next-Generation Air Monitoring**



Sean Wihera

VP, Business Development &
Partnerships
Clarity Movement Co.



Chicago, Philadelphia, and D.C.

How U.S. Cities Are Scaling Air Sensor
Networks for Next-Generation Air Monitoring

Agenda

30 min Presentations by panelists

30 min Panel discussion and Q&A

Please submit questions for the
panel via Zoom Q&A feature!

Welcome!



**Grace Adams,
MNM, MPH**

Projects Administrator
**Chicago Department
of Public Health**



**Kassahun Sellassie,
PhD, PE**

Director, Air Management
Services
**Philadelphia
Department of Public
Health**



Galen Rose-King

Engineering Specialist, Air
Management Services
**Philadelphia
Department of Public
Health**



Kane Samuel

Environmental Protection
Specialist
**Department of Energy
& Environment (DOEE)**



Henry Frishman

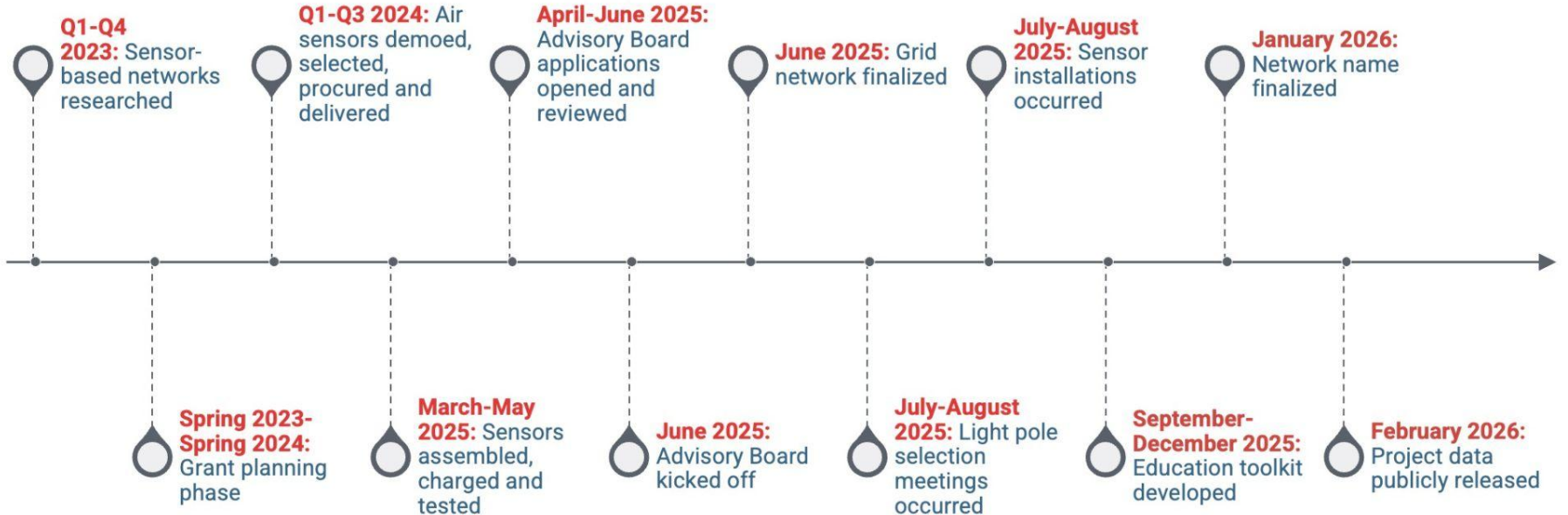
Air Quality Specialist
**Department of Energy
& Environment (DOEE)**

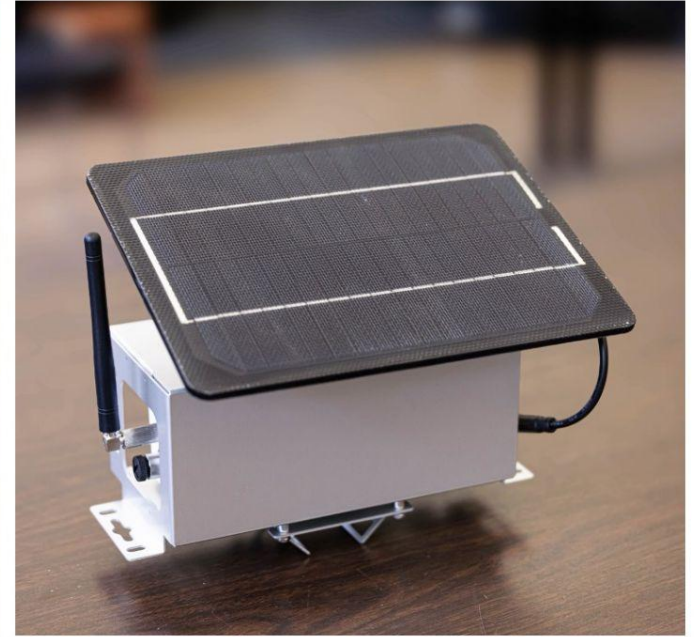
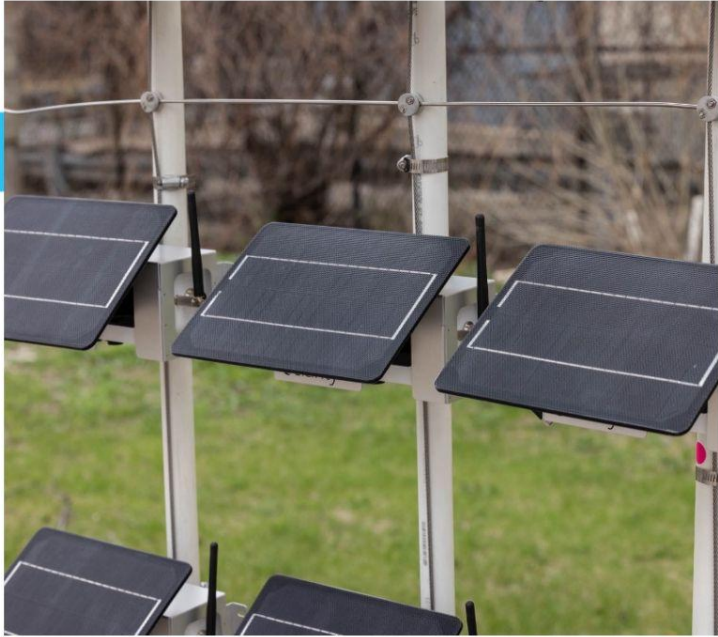


Open Air Chicago

April 16, 2026

High-Level Project Timeline





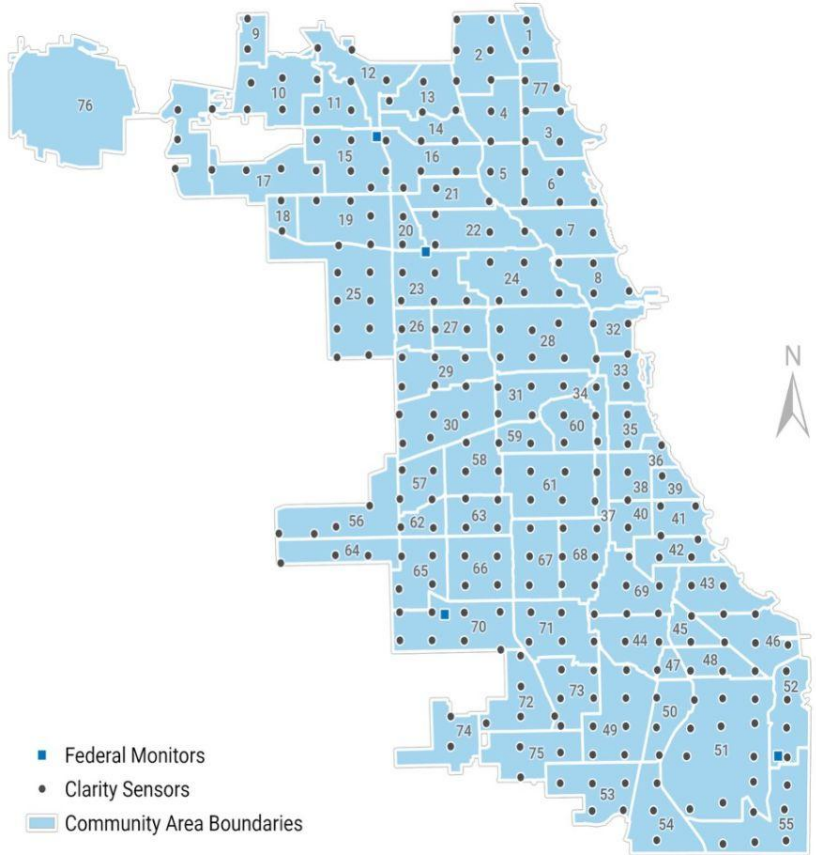
Sensor Assembly and Testing

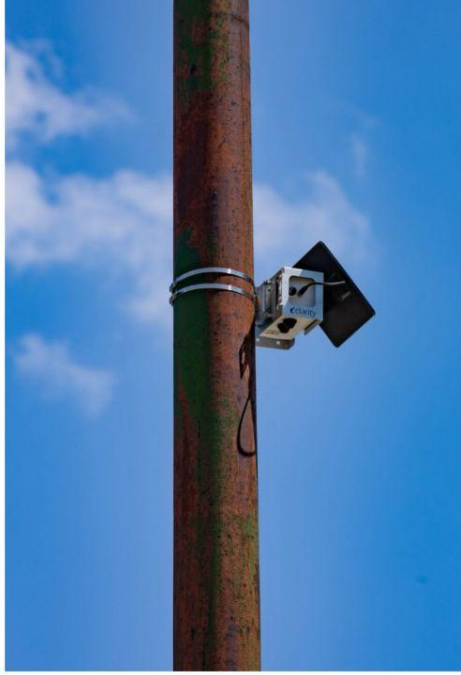
Sensor Placements

- Informed by:
 - USEPA Ambient Air Monitoring Network Design Criteria
 - Chicago EJ Index
 - Community input
 - CDOT light pole viability



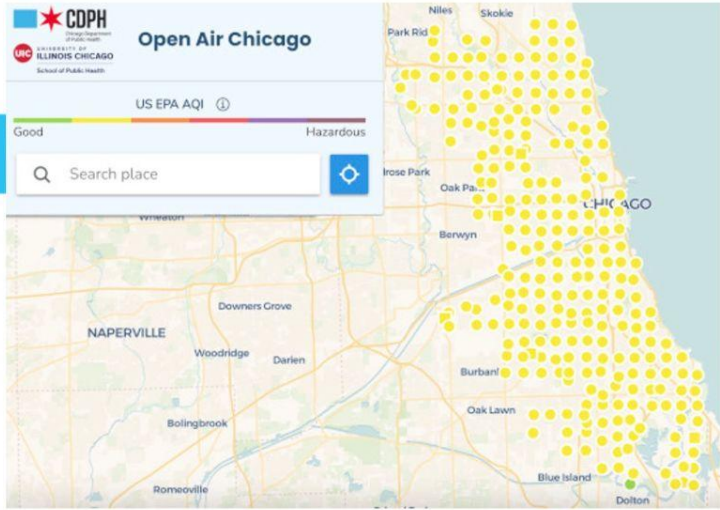
- 277 total locations
 - At least one per community area and ward
 - Placements within one mile of each other





Sensor Installation

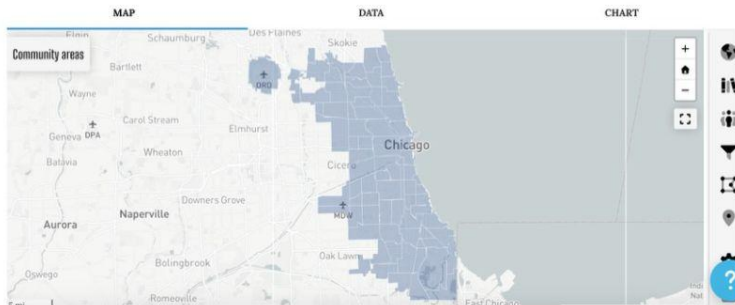
July 26, 2025 – August 30, 2025



Search this site

Chicago, IL

Chicago, IL is a city with 2,746,388 residents according to the 2020 Census.



Open Air Chicago Hour Aggregations Health & Human Services

Sensors deployed throughout the City by Open Air Chicago measuring fine particulate matter 2.5 (PM2.5) and nitrogen dioxide (NO2). All sensors collect data on PM2.5 and NO2. Six sensors also collect data on black carbon (BC) and current weather conditions.

Last Updated April 12, 2026

Data Provided By City of Chicago

Read more

Featured Content Using this Data

Open Air Chicago Individual Measurements	External Content	Open Air Chicago Day Aggregations	External Content
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Public Data Approach

Partnerships

Project Leads



Advisory Board



Additional Partners

- Chicago Department of Transportation
- Clarity Movement Company
- ComEd Exelon
- Cook County Department of Environment and Sustainability
- Illinois Environmental Protection Agency
- RHP Risk Management
- University of Illinois Urbana-Champaign

Thank you!



Chicago.gov/Health



HealthyChicago@cityofchicago.org



[@ChicagoPublicHealth](https://www.facebook.com/ChicagoPublicHealth)



[@ChiPublicHealth](https://twitter.com/ChiPublicHealth)



Breathe Philly

Kassahun Sellassie, Ph.D., P.E.

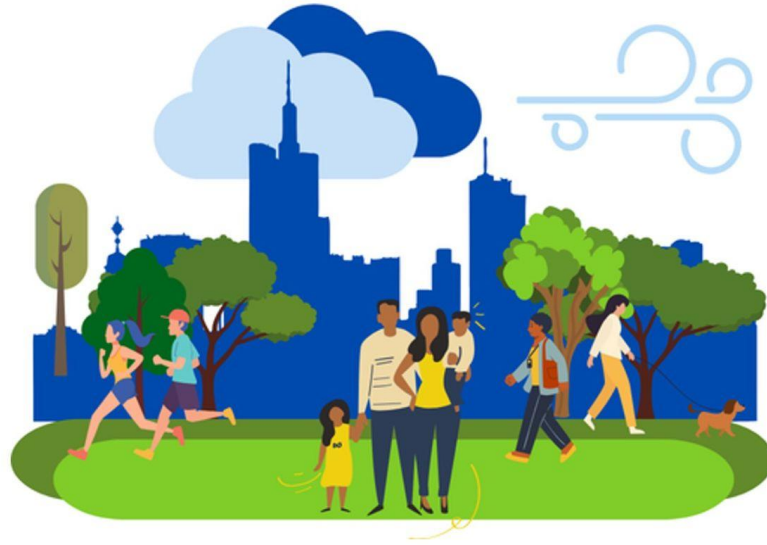
Director, Air Management Services

Philadelphia Department of Public Health



Department of
Public Health

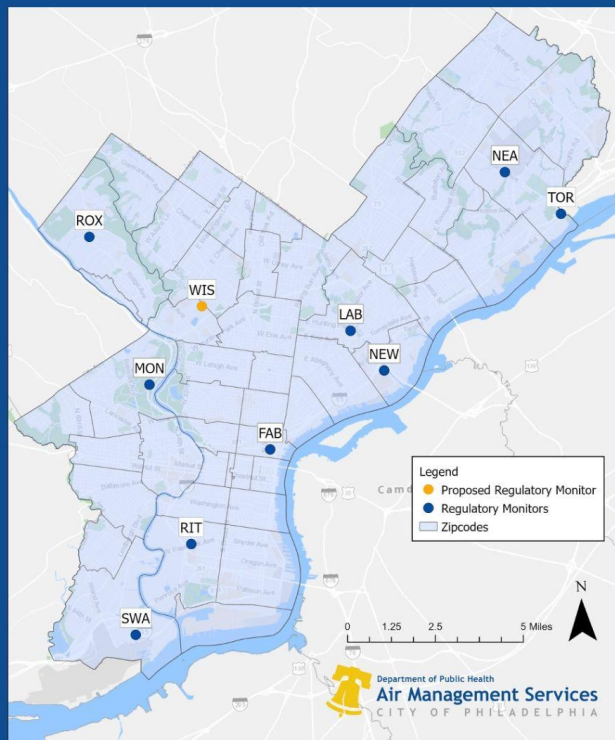
CITY OF PHILADELPHIA



Background



Existing network



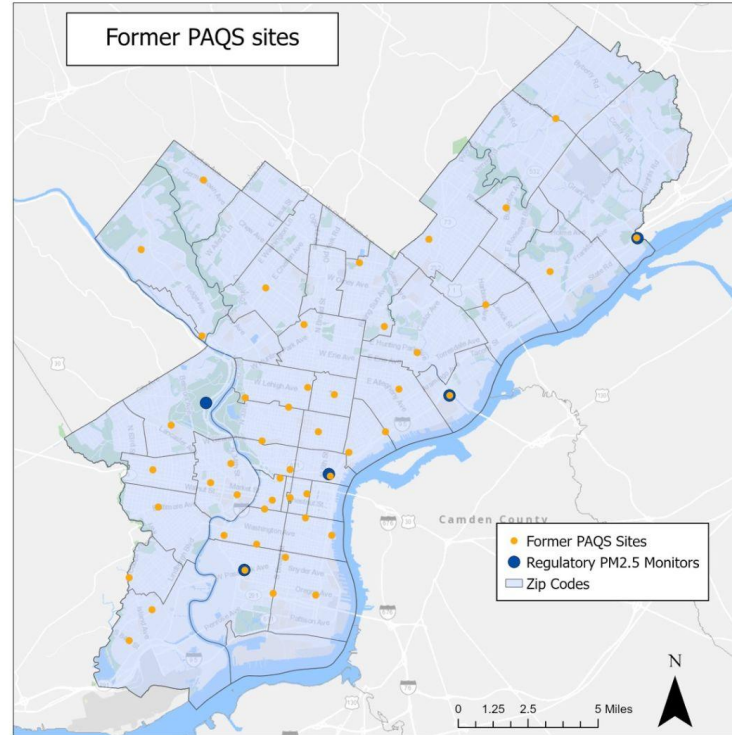
Monitoring Stations:

- 10 regulatory monitors
- Not all parameters measured at each site
- Communities asked for more monitors, in more neighborhoods, with more accessible data

Early experiments: Philadelphia Air Quality Survey (PAQS)

Overview:

- Took place between 2016 and up to date
- Street-level, neighborhood-oriented air sampling units throughout the city
- Sampled air for about 24 months
- Captured the seasonal changes and neighborhood-to-neighborhood spatial variances in air quality



PAQS: Lessons learned



- Successes:
 - 50 locations across Philadelphia
 - Neighborhood-based results for PM2.5, PM2.5 Speciation data, Black Carbon, NO₂, SO₂, O₃, etc.
 - Research used to inform modeling and regulatory priorities
- Challenges:
 - Filters manually collected and analyzed
 - Data still hard to access for residents



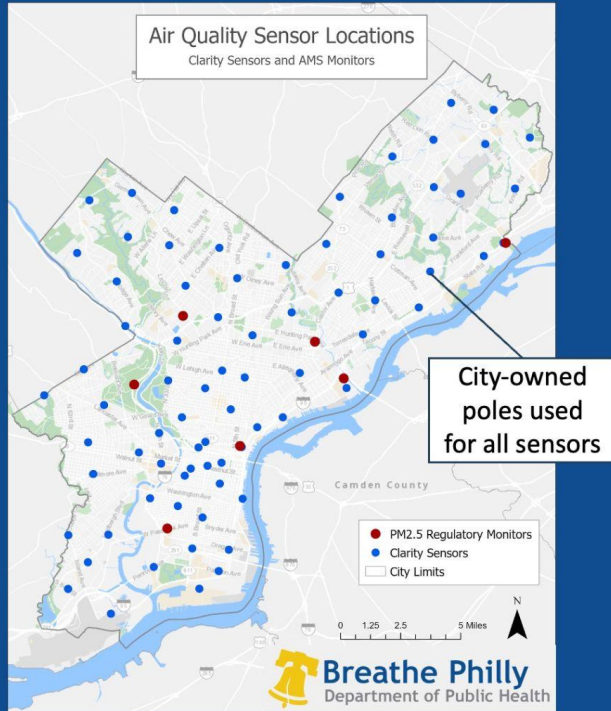


Breathe Philly



Department of
Public Health
CITY OF PHILADELPHIA

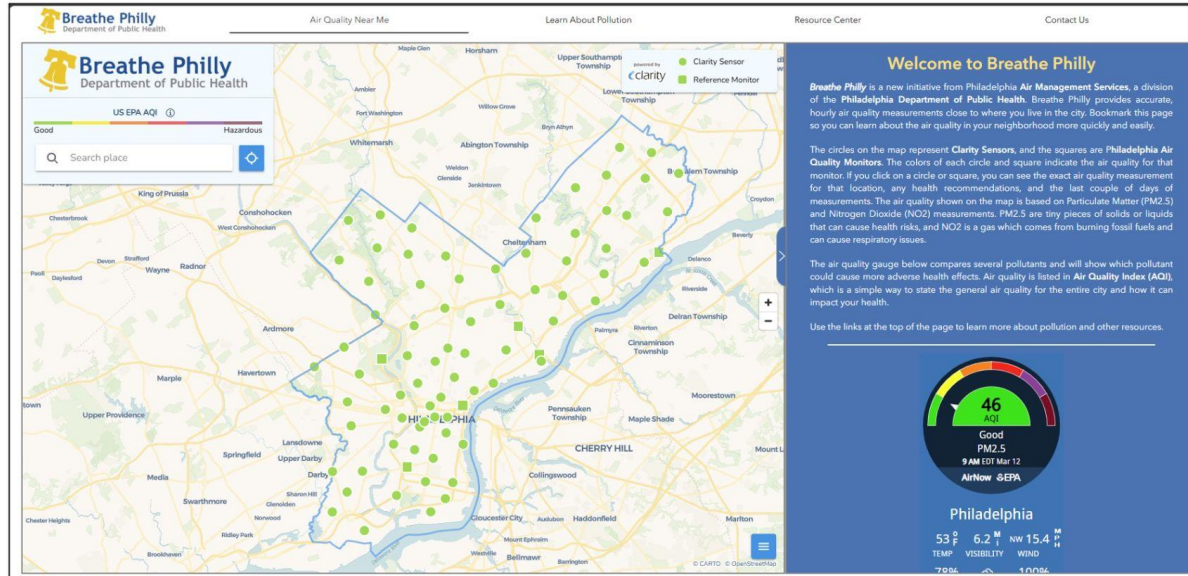
Breathe Philly project & Clarity sensor network



Clarity sensors solve all the issues with the PAQS project

- 76 Clarity Node-S sensors across Philadelphia
- Used 50 PAQS locations as a basis for data-driven locations
- Remaining 26 sensors used to place a sensor within 1.5 miles of every home in Philadelphia.
- We will add 5 ozone FEM and 76 multi-gas sensors

Breathe Philly Dashboard




The dashboard uses Clarity dashboard and ArcGIS Online Web Experience to provide education, trends, and additional resources.

Alerts to the public for unhealthy AQI


Follow 4110 Market St X

Sign up to get notified when the air quality at 4110 Market St is unhealthy.

Email Notifications

 LOGIN WITH GOOGLE

or

email address 

View our [Terms and Conditions](#) and [Privacy Policy](#).

PHILADELPHIA CAMDEN

How to Get Notified!

© CARTO © OpenStreetMap contributors



Adaptable for large-scale events: FIFA Club World Cup and America 250

Locations of Clarity Sensors for FIFA Club World Cup



Pattison & Galloway
(near stadium)



Launch & coverage

AIR QUALITY

Philadelphia launches 'Breathe Philly' air quality monitoring network



By [Maggie Kent](#)

Wednesday, February 18, 2026 1:34PM



Philadelphia officials launched a citywide network of air pollution monitors designed to provide real-time air quality data for every neighborhood.

- Public launch in February 2026
- Launch event in Grays Ferry
- Mayor, City Council members, community organizations, and residents were present
- News coverage in local outlets including CBS, ABC, WHYY, and other channels



Department of
Public Health
CITY OF PHILADELPHIA

Visit Breathe Philly



Use the QR code or visit
www.phila.gov/breathephilly to view
data from sensors across the city!

THANK YOU



Department of
Public Health
CITY OF PHILADELPHIA

District of Columbia's Clarity Node Project

Clarity Webinar - 4/16/2026

★ ★ ★ DEPARTMENT
OF ENERGY &
ENVIRONMENT



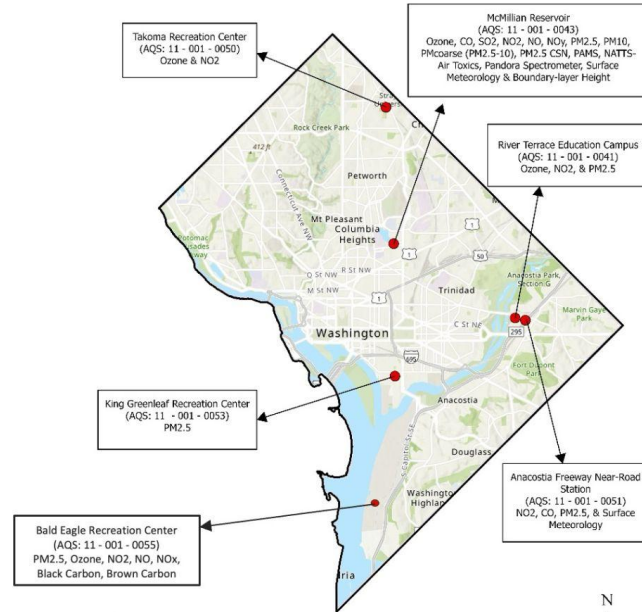
GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

TAG THIS PRESENTATION @DOEE_DC

The District's Current Network



Washington DC's Ambient Air Monitoring Network



DCGIS; M-NOPPC; VGIN; Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.
 METI/NASA; USGS; EPA; NPS; USDA; Esri; NASA; NGA; USGS

Placement Strategy – Schools Exposure vs Health

Exposure Indicators (Blue)

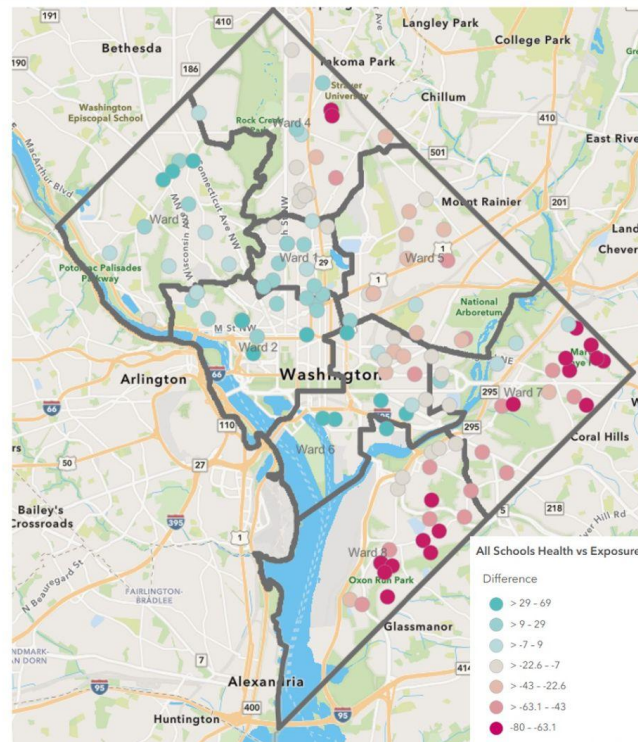
- Used UVM Exposure Model to estimate traffic and road proximity effects
- Commissioned Aclima to perform testing of PM2.5, NO2, and black carbon

Health Indicators (50% of Red)

- Pediatric Asthma ED Visit Rate
- Low Birth Weight Rate
- Preterm Birth Rate

Vulnerability Indicators (50% of Red)

- Low Income
- People of Color



ArcGIS Map

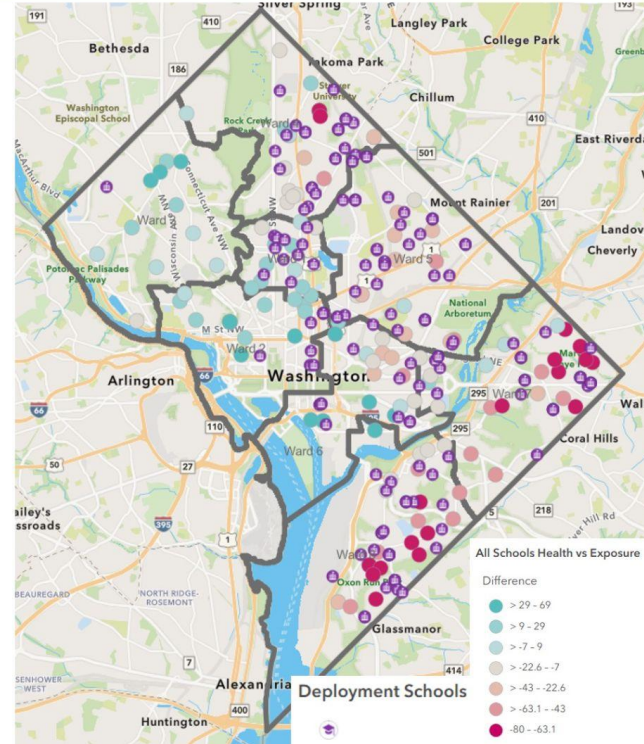
Placement Strategy – Choosing Locations

Challenges

- Unforeseen administrative hurdles with sensor placement at public schools and on other District infrastructure (traffic poles)
- Deployment time

Successes

- Charter Schools - Act independently and easy to get a response from
- Libraries - Interested in community engagement
- NGOs and Businesses - Happy as long as it doesn't effect operations



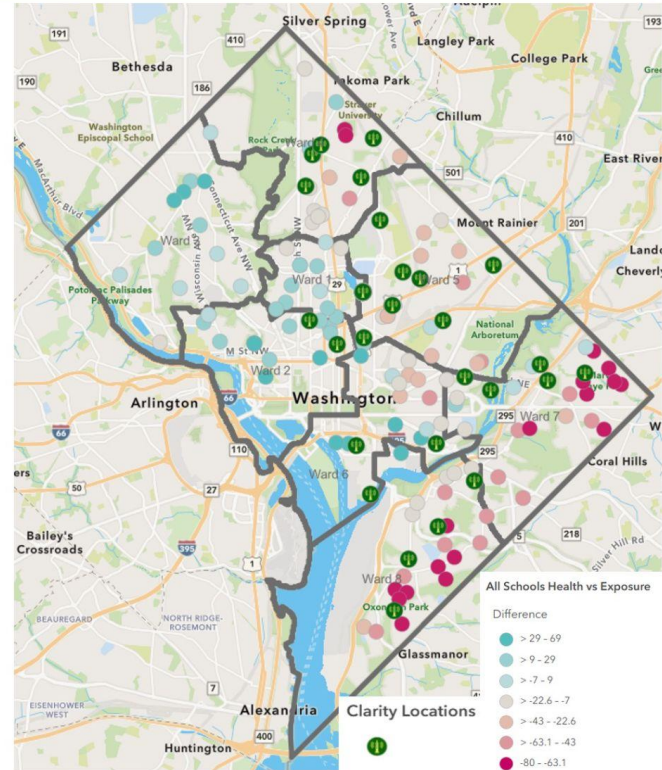
Placement Strategy – Current Deployment

Deployments to date

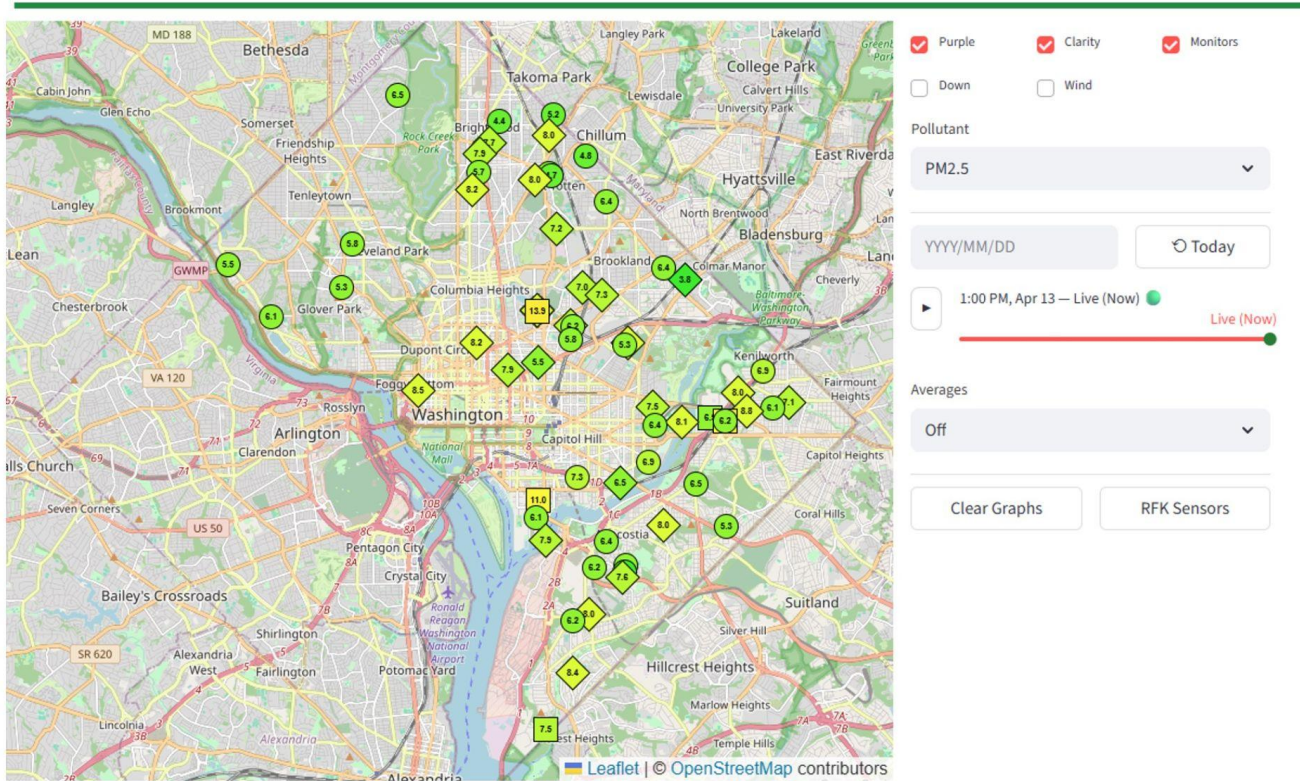
- 18 Charter schools
- 4 NGOs
- 3 Businesses
- 1 Library
- 1 University

Deployments pending

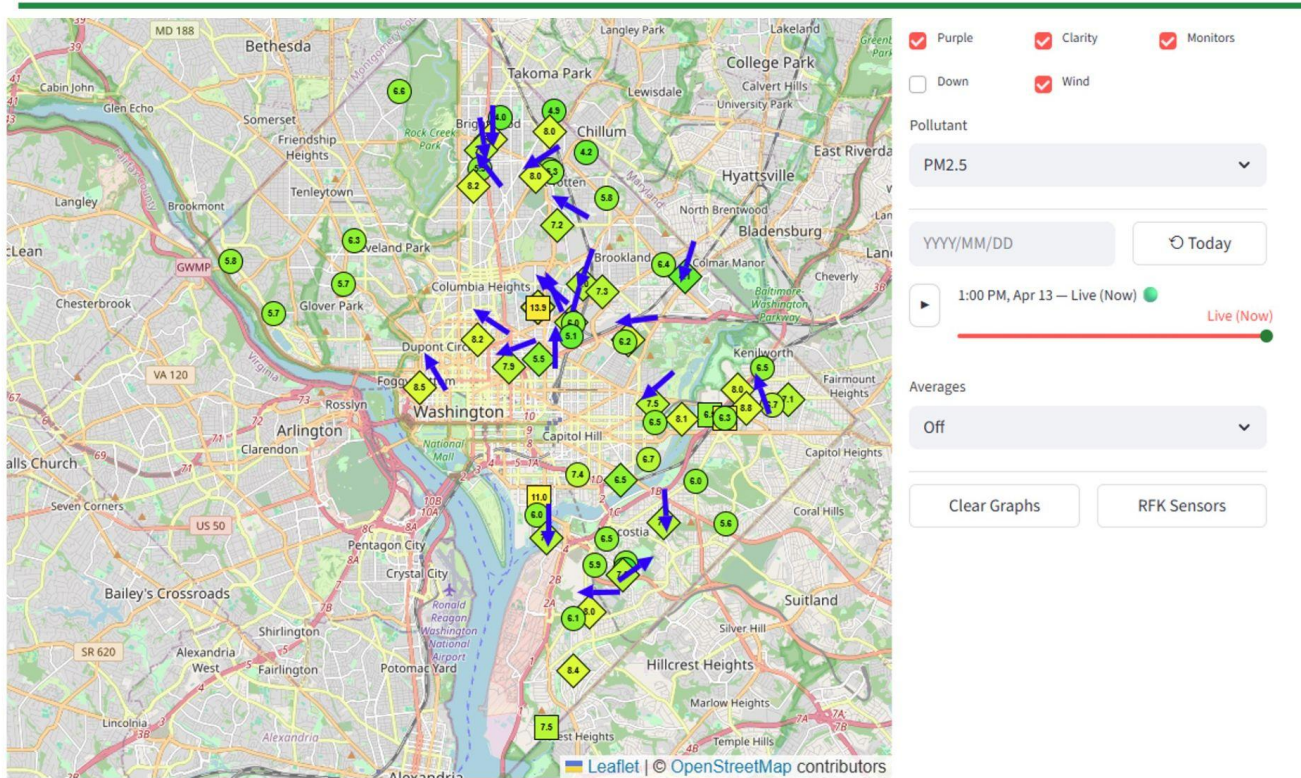
- 7 more Charter Schools
- 8 more Libraries
- 2 Universities



Tools – Internal Compliance Map



Tools – Internal Compliance Map



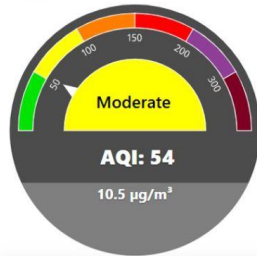
Tools – Public Dashboard

← Back

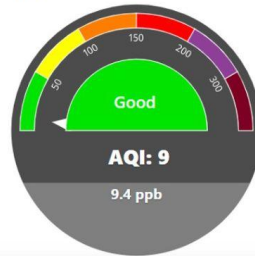
*** DEPARTMENT OF ENERGY & ENVIRONMENT
Center City Brightwood Campus
AM9R997X

Latest Measurements

PM_{2.5}



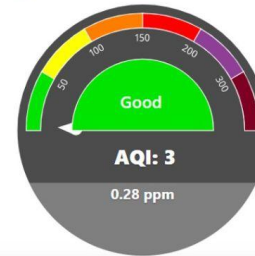
NO₂



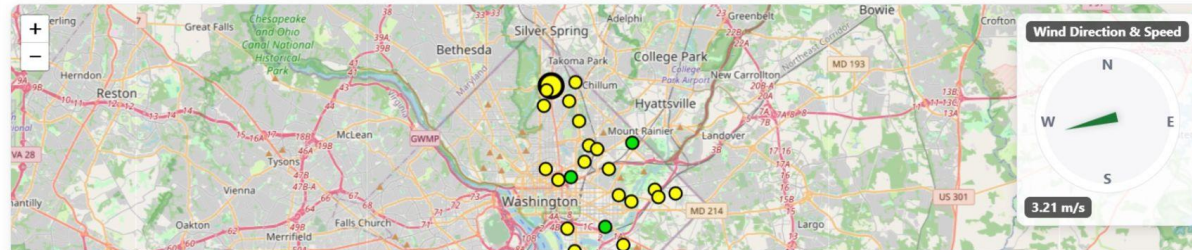
Ozone



CO



Sensor Map



<https://airquality-doe.dc.gov/>

Questions?

Reach out to:

Samuel Kay, Air Quality Planning Branch Chief

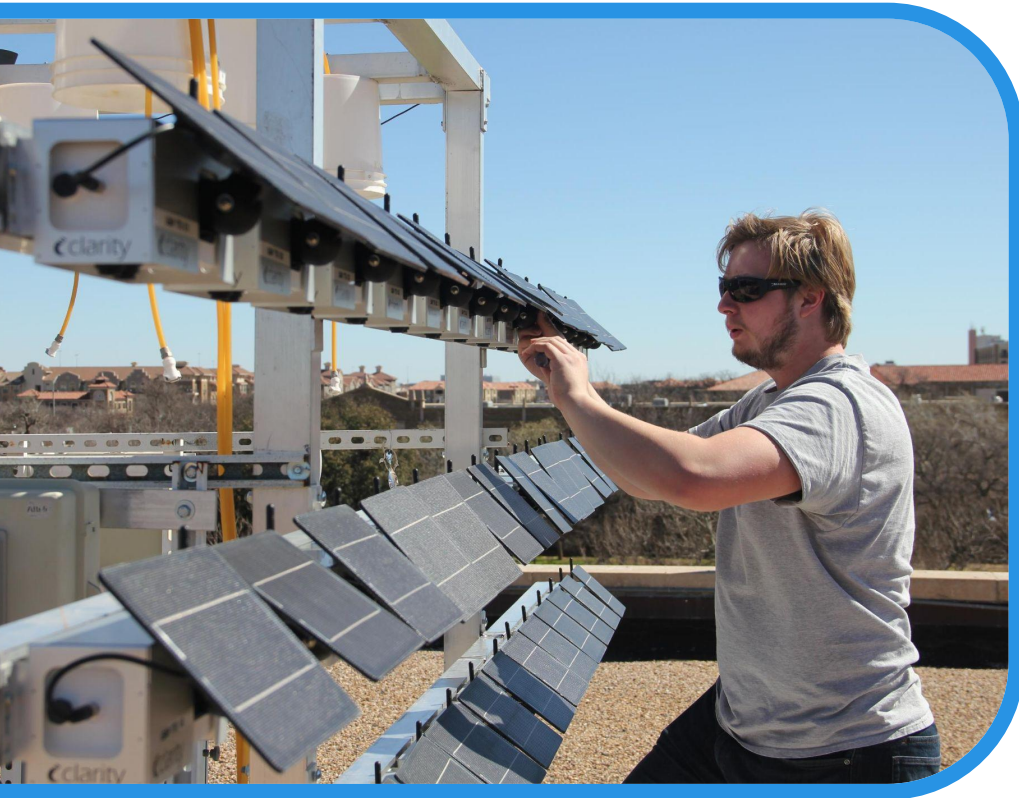
samuel.kay@dc.gov

Or

Kane Samuel, Environmental Protection Specialist

kane.samuel@dc.gov

Clarity Collocation Demo Program



Test Clarity air quality sensors free of charge



www.clarity.io/landing-pages/free-collocation-demo

Questions?



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