Mapping air in the District: DOEE and Aclima

June 9, 2023

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DEPARTMENT OF ENERGY & ENVIRONMENT

WE ARE WASHINGTON DC GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

@DOEE_DC

Introduce yourselves in the chat:

- Name
- Who do you represent?
- Why do you care about air quality in your neighborhood

Remarks from:

Acting Director Richard Jackson

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Agenda

Welcome & Chat Introductions

Director's Address to the ANCs & Councilmembers

Agenda Review

Today's Goals

DOEE Community Air Monitoring Initiatives

Aclima & 2 Week Pilot Overview

Data & Science

Interactive Question & Answer

Next Steps & Contact Information

Today's Goals

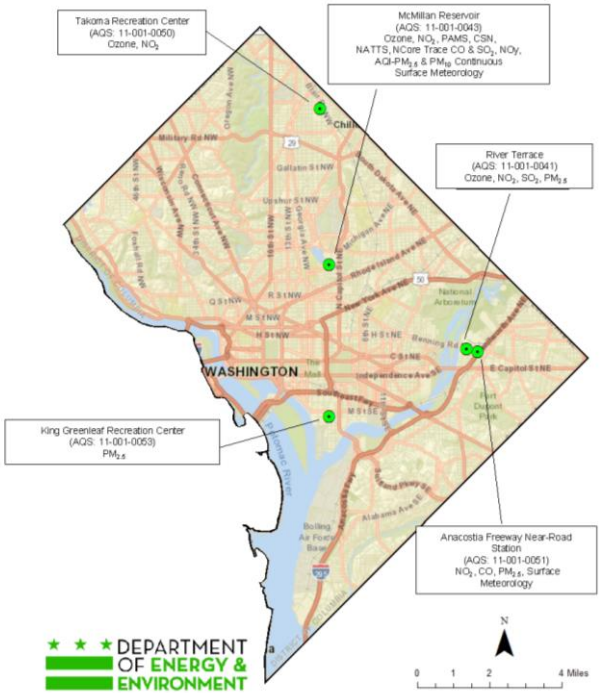
- Introduce Aclima & the technology
- Share details about the 2-week pilot
- Hear specific questions and concerns that pertain to the two weeks of data collection
- Ground expectations in the capabilities of Aclima technology
- Identify representatives for stakeholder interviews

DOEE Community Air Monitoring Initiative

- This program will provide block-by-block information on air pollution and GHGs
- Two-week pilot in the priority communities of Ivy City/Brentwood, Mayfair, and Buzzard Point
- The goals of the initiative:
  - Gain valuable, data-driven insight into air pollution in these communities.
  - Increase residents' awareness of pollutants in their neighborhoods and help them to reduce emissions.
  - Help decision-makers create policies that are better targeted to reduce air pollution in the District and determine which part of these neighborhoods warrants further analysis as the hyperlocal monitoring program expands in future fiscal years.

Existing Monitoring System

DOEE has 5 stationary monitors in all 4 quadrants of the city



Monitor*	Ward	Location Setting
River Terrace Education Center	7	Urban / EJ community
I-295 Near-Road Station	7	Urban / EJ community
King Greenleaf Rec Center	6	Urban / EJ community
McMillan Reservoir	1	Urban
Takoma Rec Center	4	Urban

*New monitor in Ward 8 coming soon.

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I measure
air quality.

Aclima's Approach: Mobile Mapping & Analysis

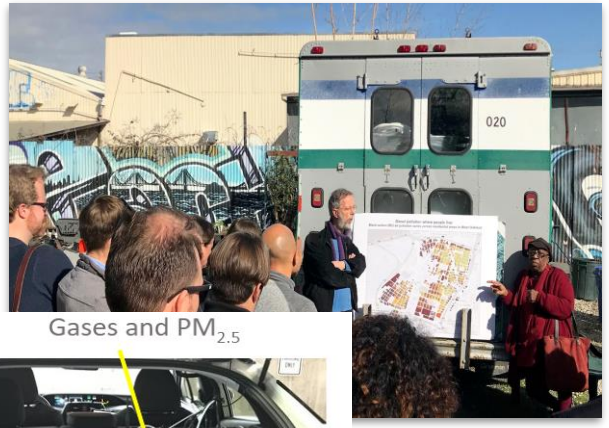
How Aclima works: block by block, we measure, map, and analyze air pollution and greenhouse gases

Aclima provides: science and data-backed information about air pollution and GHGs at the hyperlocal level — illuminating each neighborhood block's unique air.

Aclima is committed to informing action by leaders that reduces emissions and collectively working towards an equitable, clean air future for all.

Aclima are a mission-driven Public Benefit Corporation:

- Atmospheric, climate, & data scientists
- Software, hardware, user experience, & systems engineers
- Community organizers & urban planning specialists
- Advisors from non-profits, government, & more



Gases and $PM_{2.5}$

Volatile Organic Compounds

Black Carbon

In the District: 2-week Pilot Starting in June

Where we will measure: 5 census tracts, 2.12 sq mi, 30.68 linear road miles, 17,000+ people

Aclima collects and maps a variety of air pollutants and greenhouse gases (GHGs). For the two week pilot, Aclima will measure the following pollutants

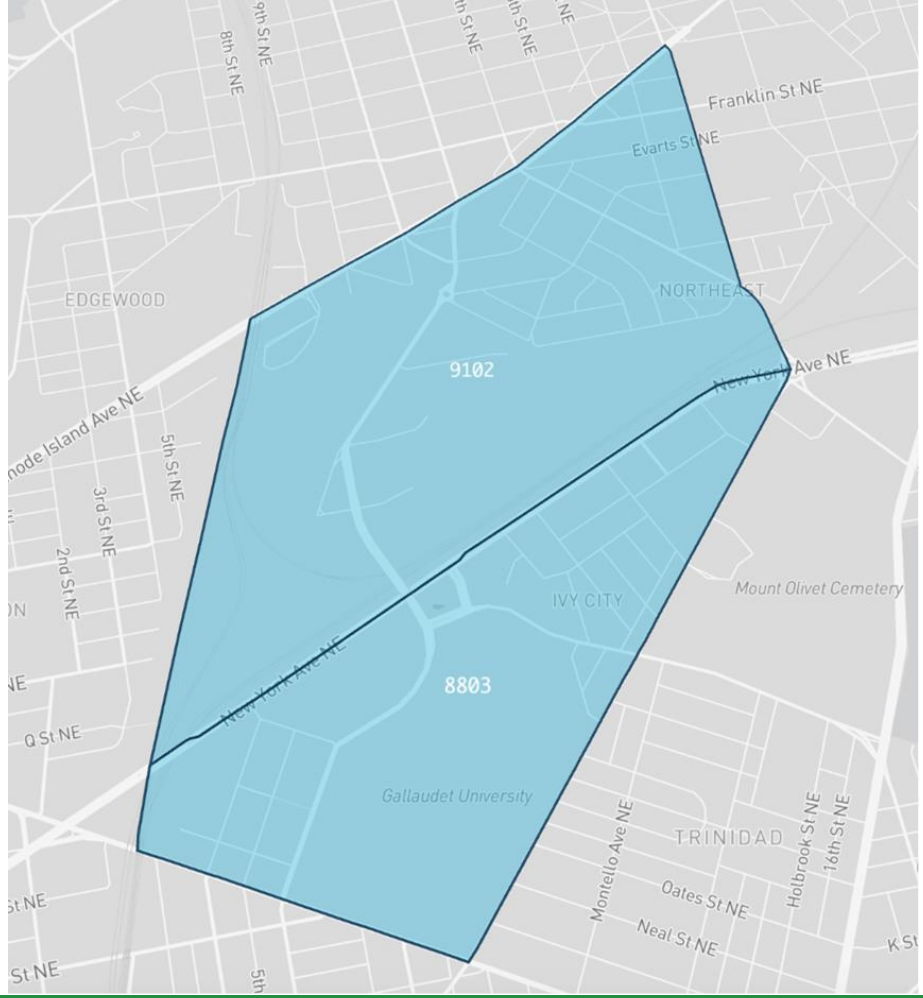
- PM2.5
- Ozone (O3)
- Nitrogen Dioxide (NO2)
- Carbon Monoxide (CO)
- Carbon Dioxide (CO2)
- Black Carbon
- TVOCs (screening level)

Once the pilot is complete: Aclima will provide DOEE with maps of the measured pollutants that visualize the block-by-block data collected by the Aclima fleet.

Brentwood/Ivy City

Neighborhoods #1 & 2

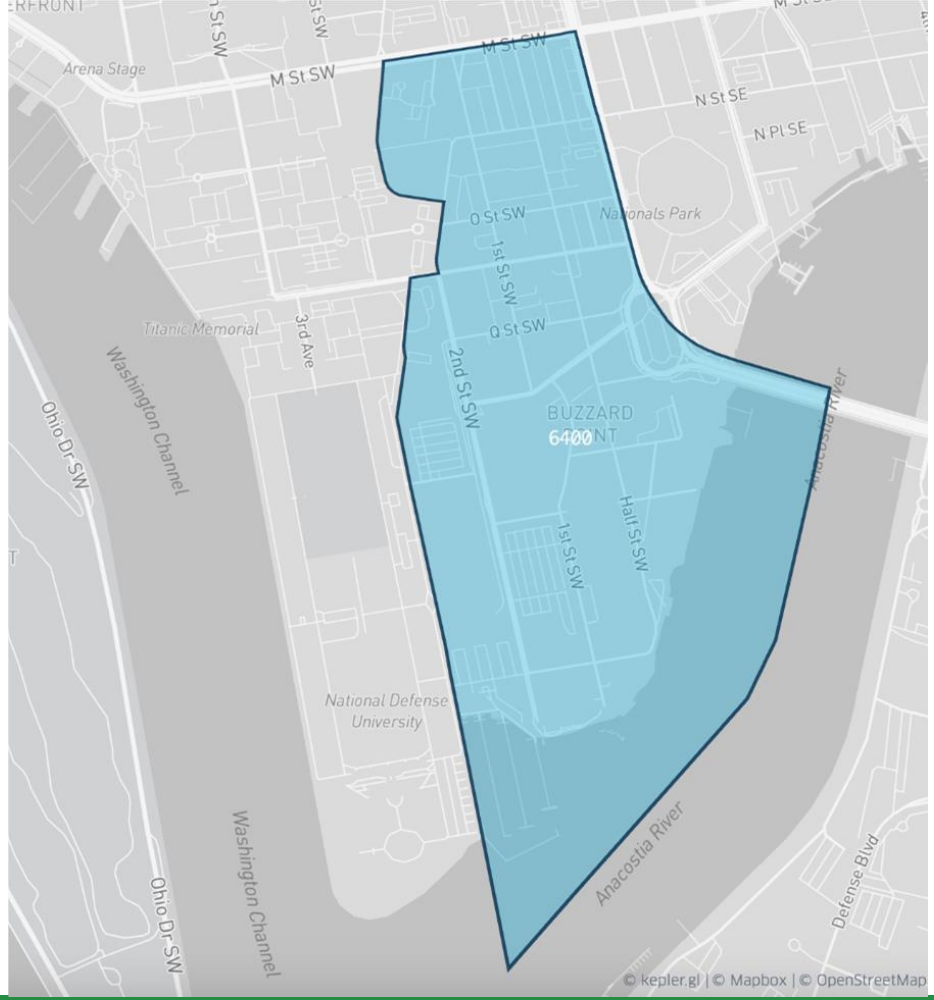
Ward 5



Buzzard Point

Neighborhood #3

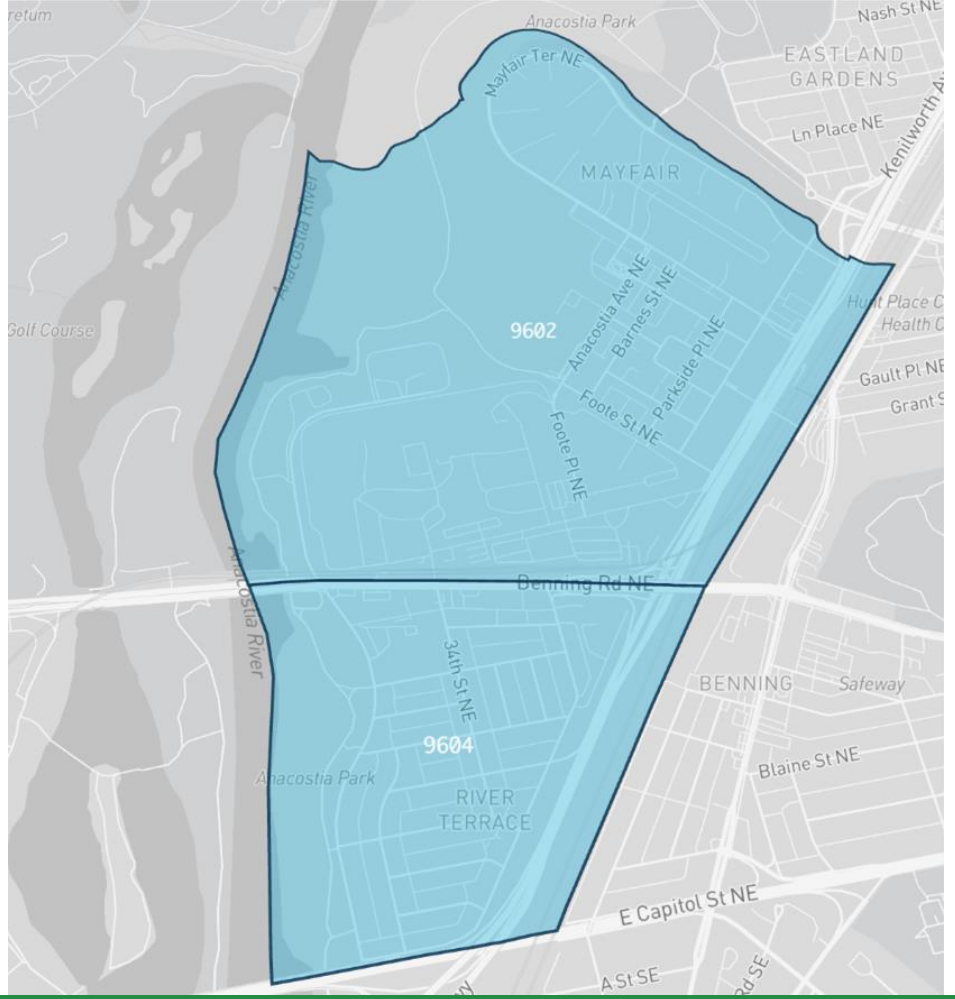
Ward 6



Mayfair

Neighborhood #4

Ward 7



What to Expect from 2 Weeks of Data Collection

Hyperlocal Variability

Our pilot is designed to capture the hyperlocal variability across all pollutants we measure. This offers valuable insight into the unique air quality conditions of individual neighborhoods.

Seasonal Variation

While our data will accurately reflect conditions during the pilot time period, keep in mind that it may not encapsulate hyperlocal differences that persist over longer periods, like a season or a year.

Active Sources

Our readings will be influenced by any sources of air pollution active during the pilot. This data helps identify key contributors to local air quality during the data collection period.

Non-Active Sources

It's important to note that sources only active at other times of the year won't be reflected in our data. A comprehensive view of air quality would require data collection during those periods as well.

Stakeholder Interviews

Aclima is looking for 3 volunteers to help guide our community outreach efforts with best practices and key insights for data collection.

Other DOEE Air Quality Monitoring Projects

- Hyperlocal monitoring pilot will be used to inform:
  - Sites for stationary low- or mid- cost sensors
  - Expansion to the other parts of the District
- EPA sampling around Ivy City
- EPA Grant – Enhancing air quality data with community storytelling to advance environmental justice
  - DOEE received the grant award from the EPA on Tuesday and will soon convene our partners

Contact Information

DOEE Team

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Aclima Team

Questions on upcoming sessions & general support:
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Questions?