Clearing the Air: Enhanced Air Quality Monitoring in Ward 8

April 9, 2026, 5:30 PM

DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

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Why Monitor Ambient Air Quality?

- Protecting public health
  - Air quality levels vs. national standards
- Identifying air pollution sources
- Developing air pollution controls
- Science and research
- Public outreach and education

Monitoring Overview

EPA sets national air quality standards via the Clean Air Act – limits for each pollutant to ensure people are breathing safe air

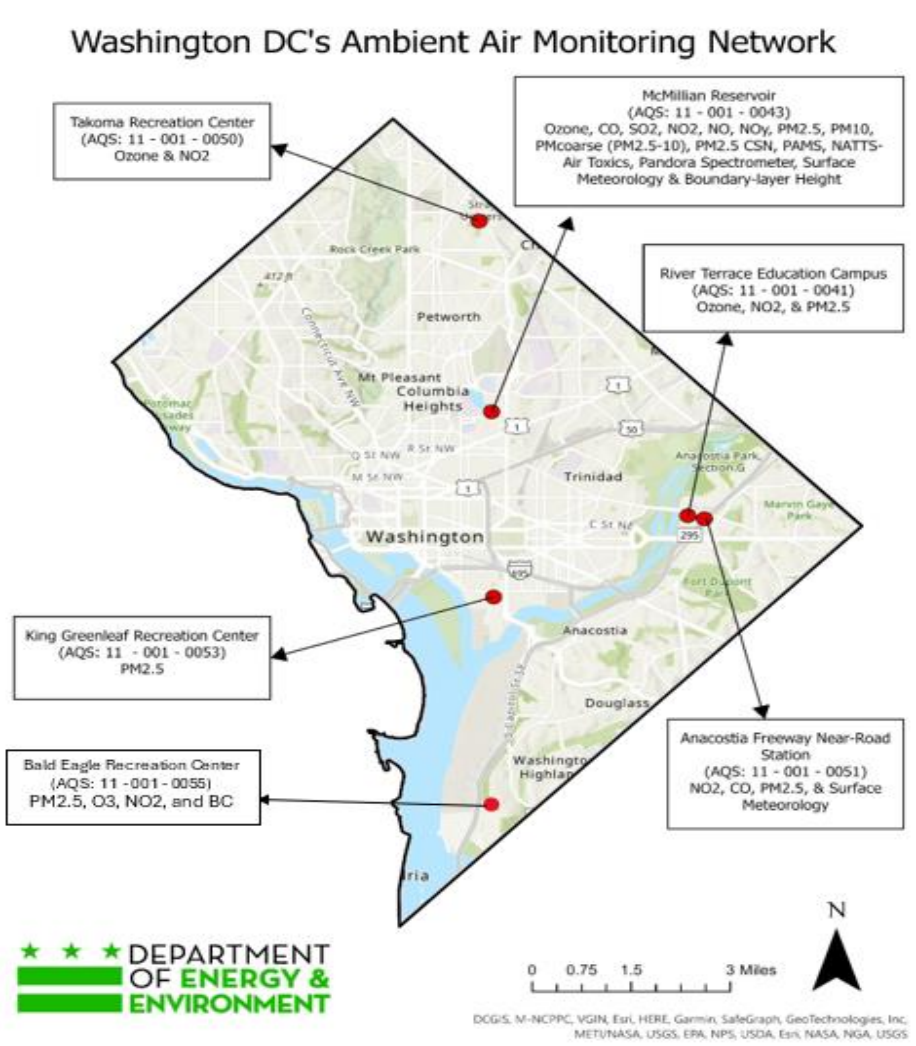
We monitor air quality to…

- Ensure we are in compliance with these standards
- Create improvement plans and regulations at the local level

Two types of federal compliant monitors:

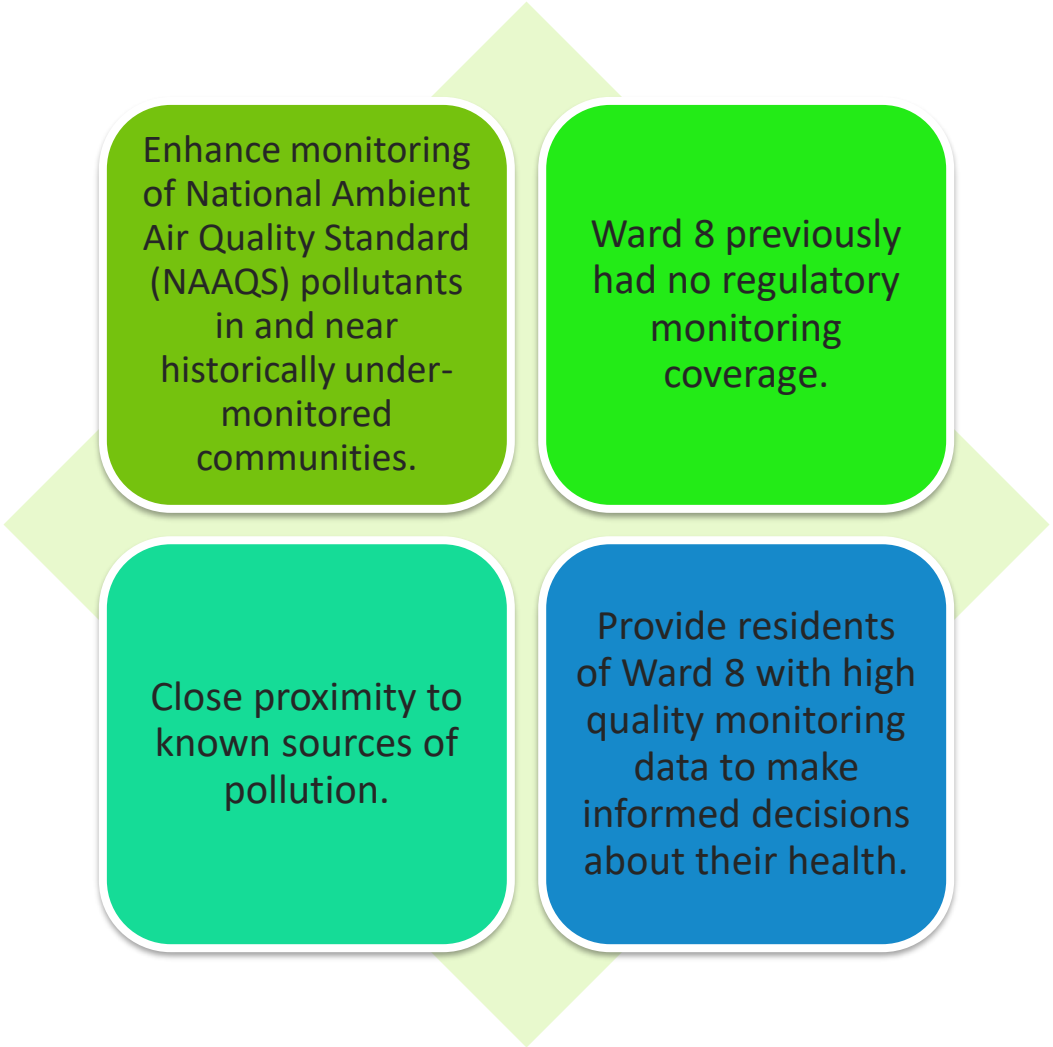
- FRM (Federal Reference Method) - standardized, approved methods for measuring concentrations of pollutants.
- FEM (Federal Equivalence Method): determined to achieve equivalent measurement quality as FRM

Our Current Federal Monitors



Site Location	Address
Takoma Rec Center	301 Van Buren St NW
McMillan Reservoir	2500 First St NW
River Terrace Education Campus	405 Anacostia Ave NE
Anacostia Freeway Near-Road Station	Benning Rd NE @ I-295 On-ramp
King Greenleaf Rec Center	201 N St SW
Bald Eagle Rec Center	100 Joliet Street, SW

Why Put a Monitor in Ward 8?



How Did We Choose Bald Eagle?

DOEE drove around Ward 8 looking for potential sites that met EPA requirements, such as height, space, and airflow.

We presented our ideas to the community to ask for feedback

We exchanged emails and had direct conversations with Ward 8 residents, and conducted a survey.

We toured additional sites to make sure they met EPA requirements

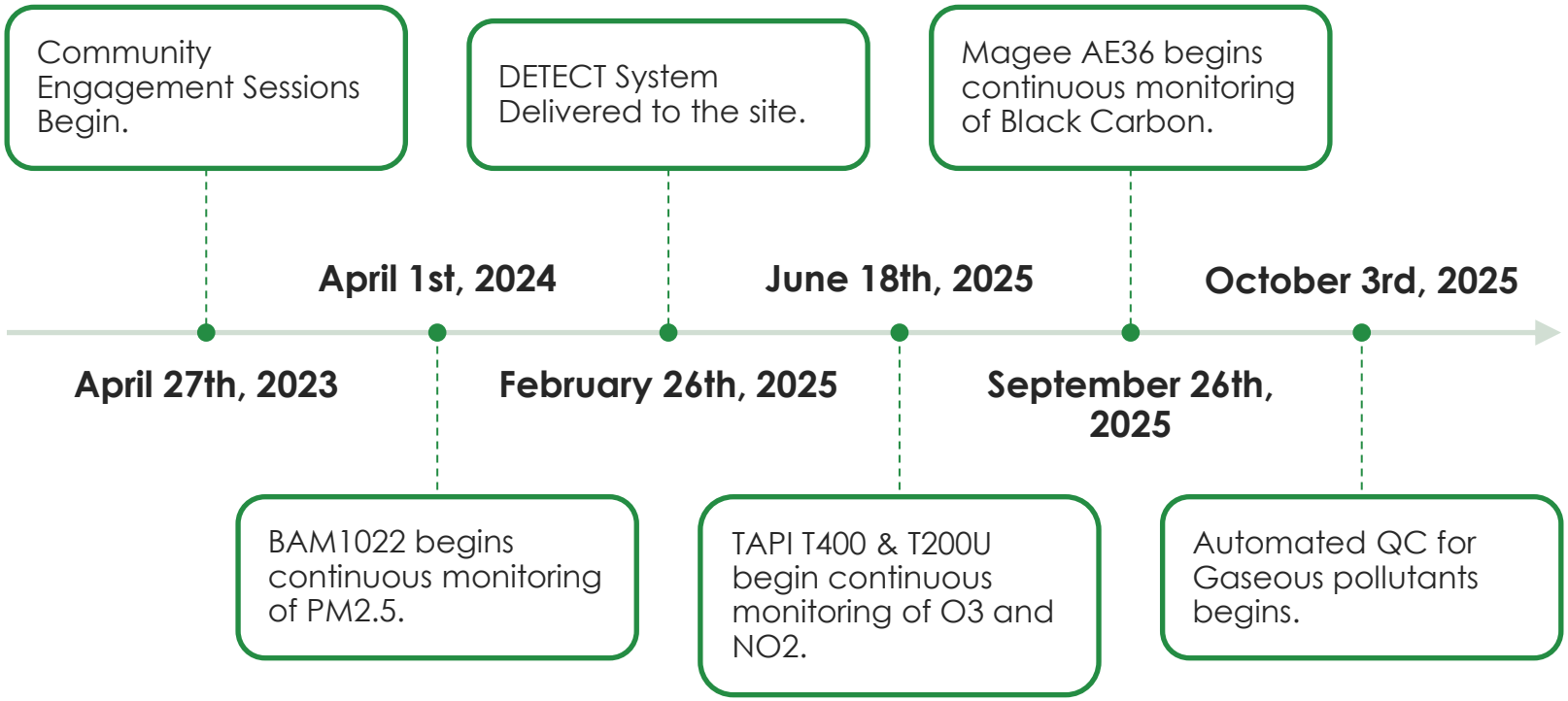
We held another community meeting to discuss these additional proposed site locations

We chose the Bald Eagle Recreation Center.

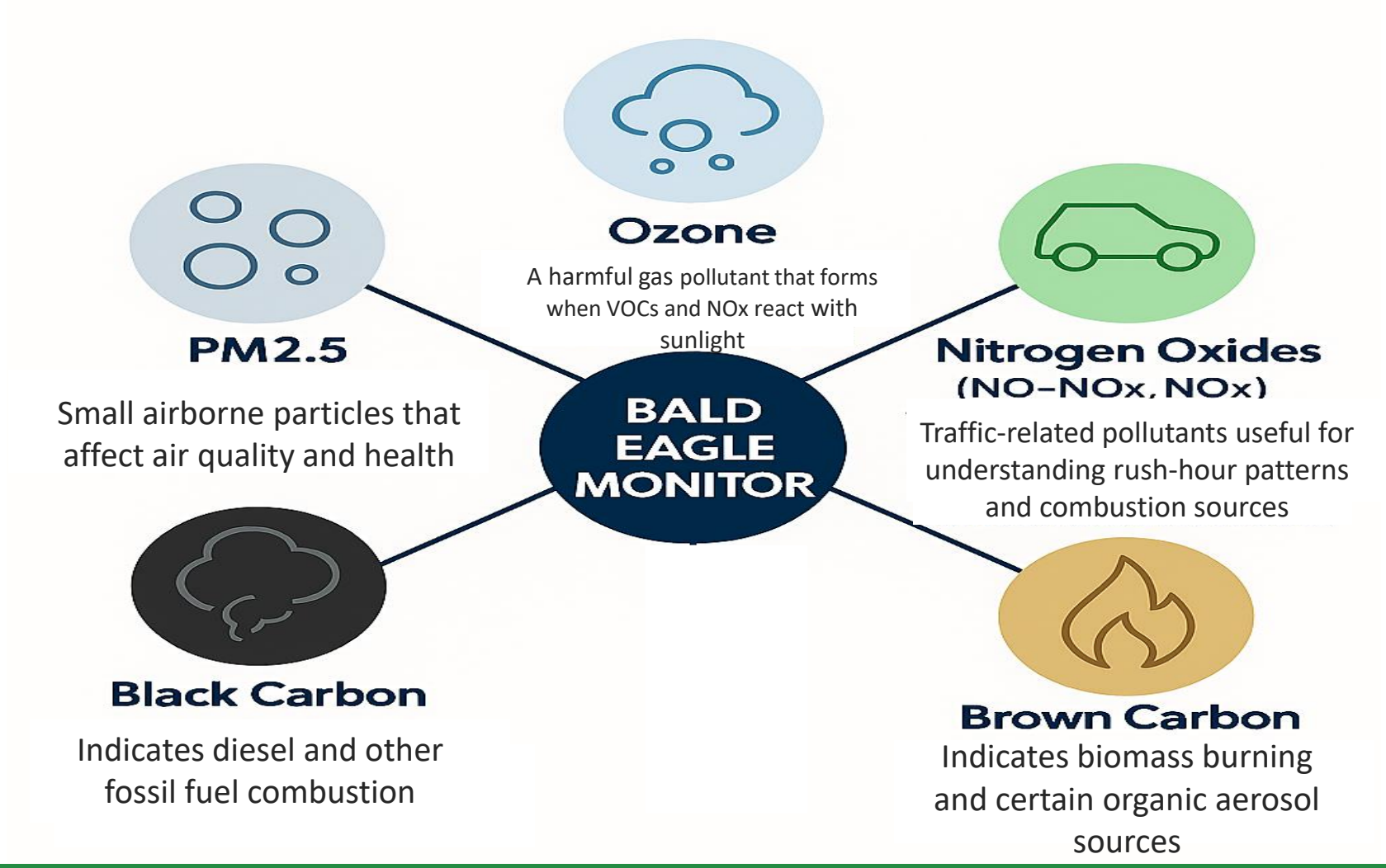
Bald Eagle Rec Center

Community input and discussion had a direct impact on the chosen location of the new Ward 8 monitor.

Order of Events



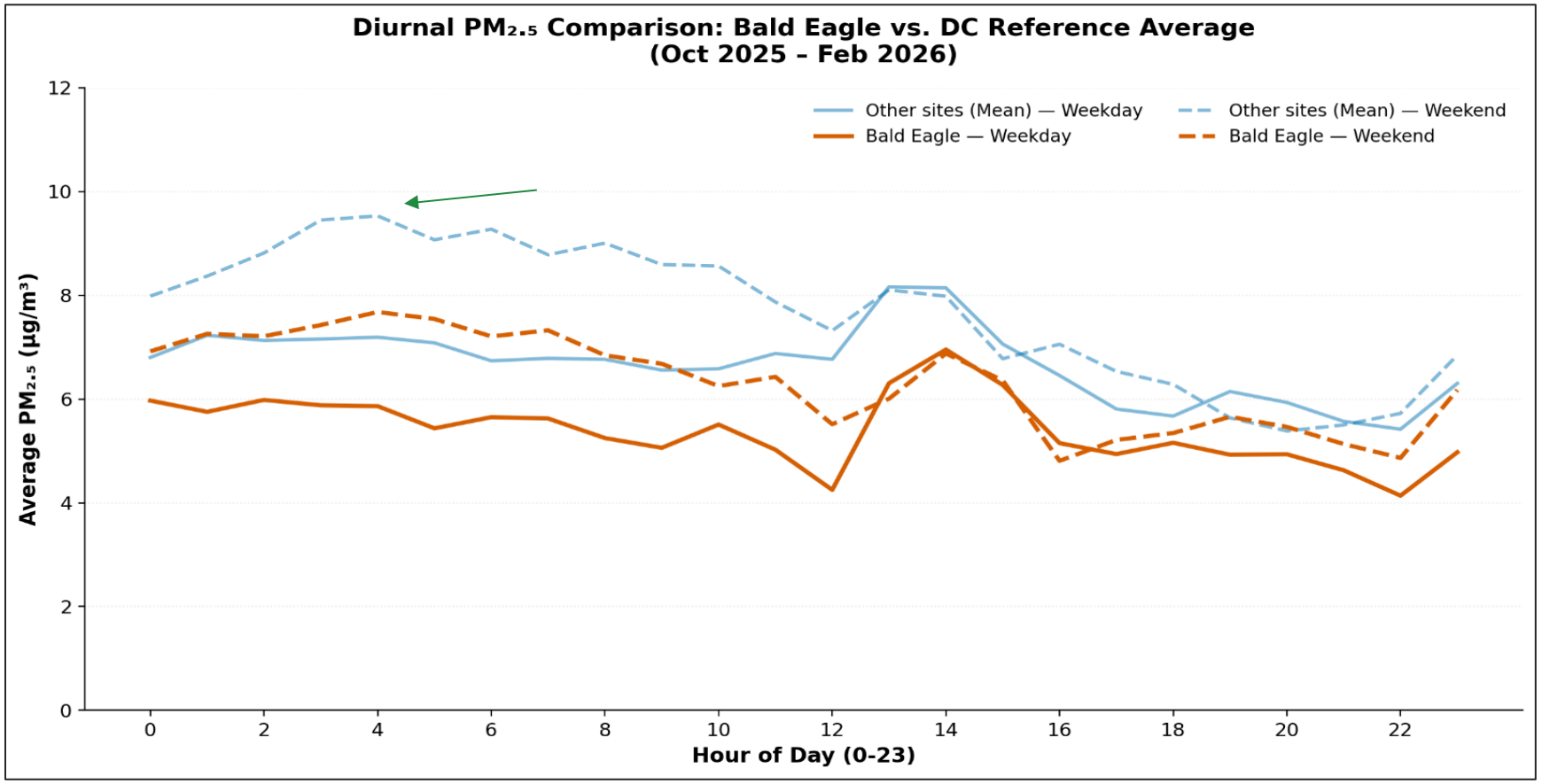
What the Bald Eagle Monitor Measures



What DOEE Does At The Bald Eagle Site

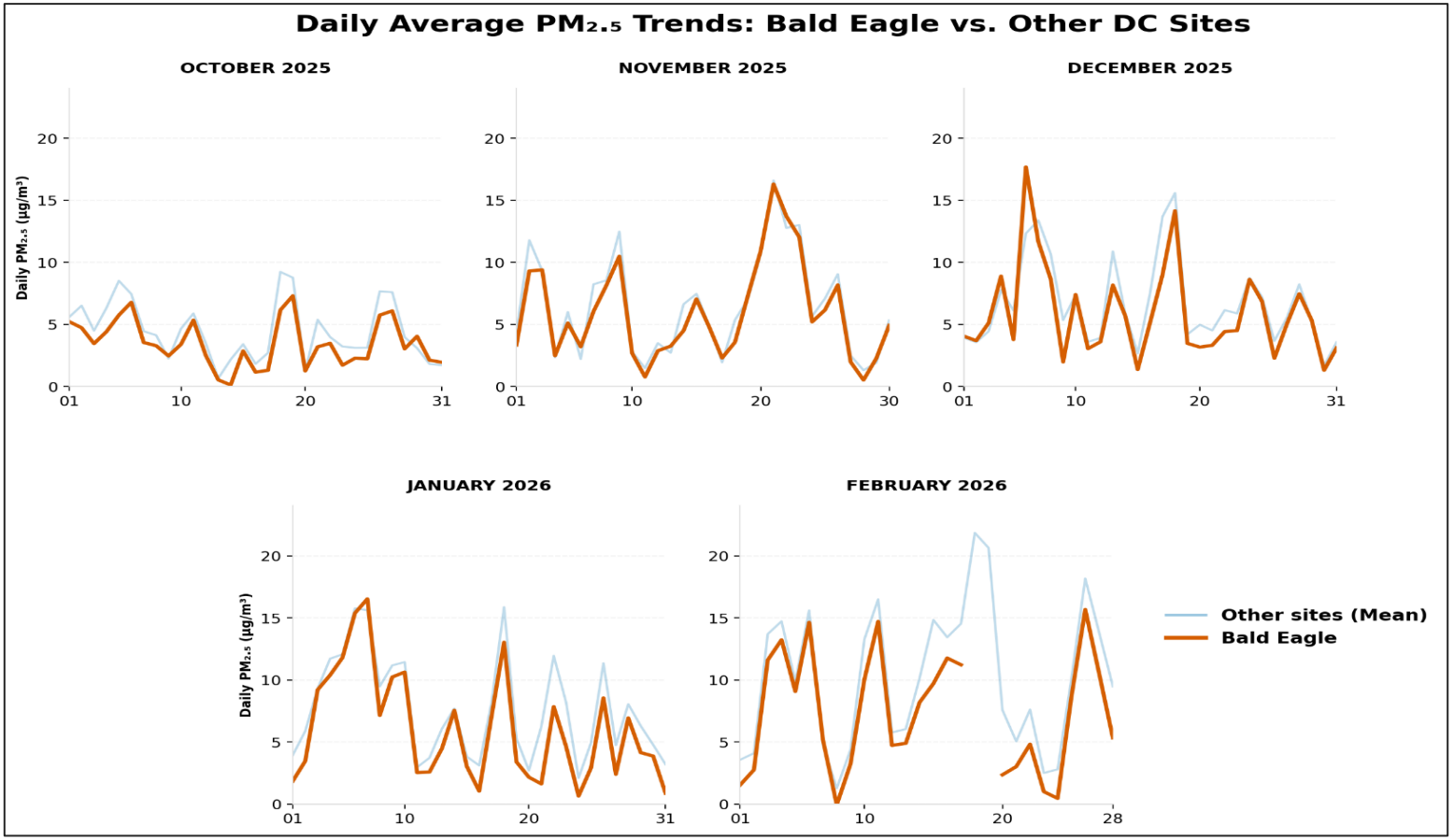
- Routine checks to ensure equipment is working as intended
- Quality checks
- Routine maintenance
- Cleaning

Bald Eagle - Comparison to District Monitoring Sites



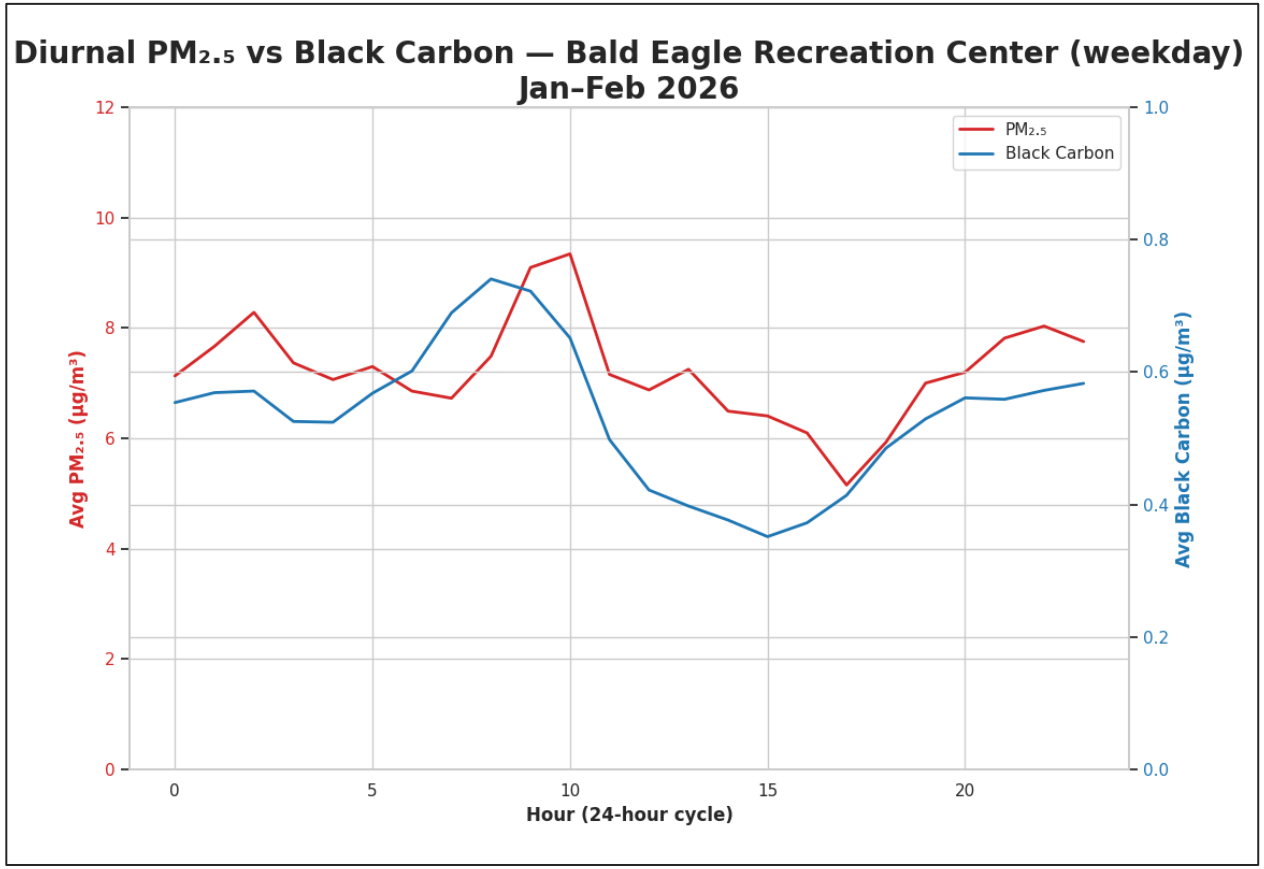
*Weekend PM2.5 levels peak much earlier in the day (around 04:00) than on weekdays, when peaks occur in the early afternoon. This shift suggests that weekend concentrations may be driven more by highway or overnight emissions than by typical weekday office-hour traffic.

Bald Eagle - Seasonal Comparison to District Monitoring Sites



*Although levels at Bald Eagle are generally lower than those observed at other monitoring sites, the overall patterns remain consistent with measurements from across the District.

Bald Eagle - Weekday Peak Black Carbon



Why BC peaks at 9 AM?

At 9 AM in DC:

- School drop-offs are still happening
- Delivery trucks are circulating
- Metrobus service is at high frequency

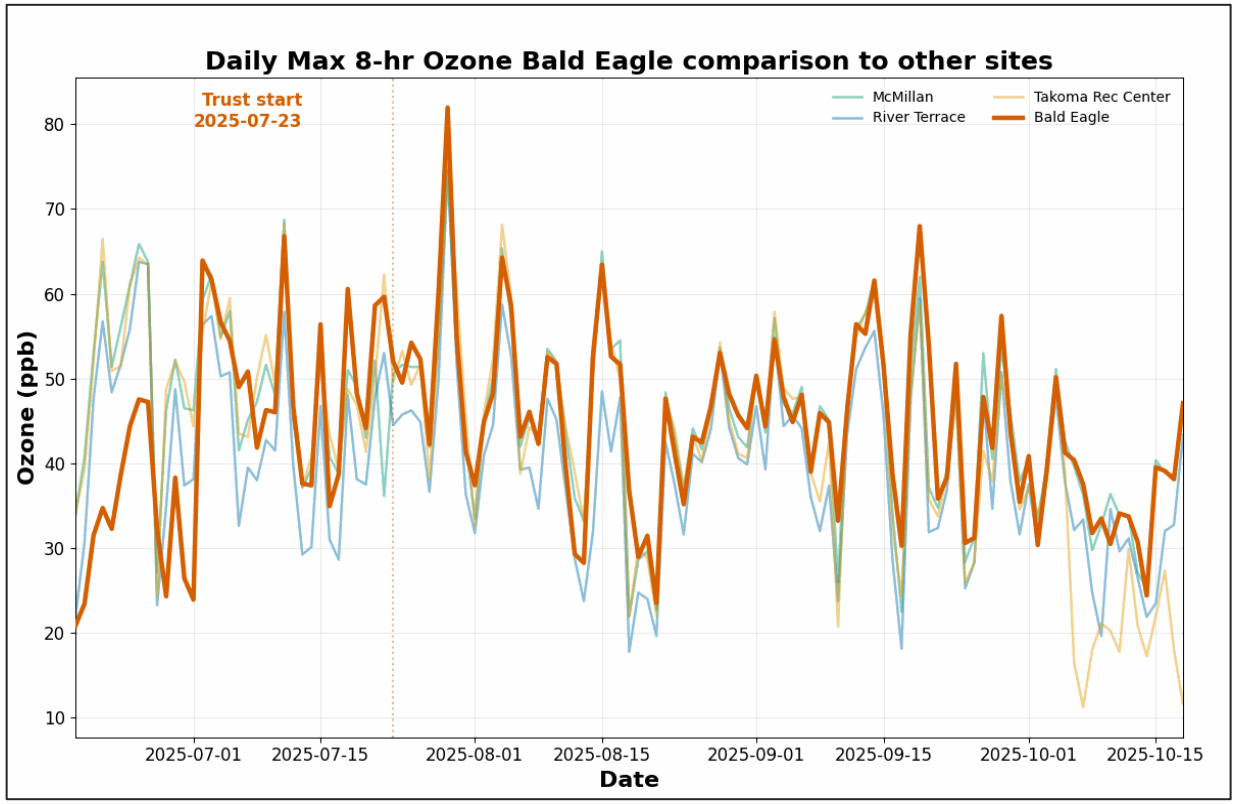
This creates a local emissions surge that the monitor picks up.

There's also morning boundary layer suppression. Which means, pollutants from vehicles remain trapped near the ground, so concentrations spike even with moderate emissions.

Reasons we suspect the 3PM drop

- The morning rush is long over as afternoon rush in DC typically ramps up around 4–6 PM, not 3 PM
- Truck deliveries taper after lunch
- The boundary layer is deeper, therefore more vertical mixing

Bald Eagle - Comparison of Daily Max 8-Hour Ozone



Ozone monitoring at Bald Eagle

- Installed June 15, 2025, the Bald Eagle ozone monitor underwent testing and calibration before official reporting began on July 23.
- The site successfully captured the July 29 District-wide ozone exceedance.
- Overall, Bald Eagle ozone levels align closely with other District monitors.

Bald Eagle – Examination of 7/29/2025 Exceedance

Parameter	Site Name	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Grand Total	
																										Avg	Max
O3	MCMILLAN	15.8	19.3	25.1	32.1	39.9	48.2	56.6	63.5	70.7	74.6	76.	75.3	72.5	69.2	65.2	61.1	55.	49.6	45.1	41.1	38.2	35.8	33.2	30.9	49.75	76
	BaldEagle	14.2	15.2	18.6	24.5	33.5	43.8	54.3	64.9	74.5	80.3	81.9	80.9	76.8	71.6	66.1	60.1	53.2	47.7	44.1	41.2	38.6	35.3	32.1	29.2	49.275	81.9
	RIVERT	3.5	6.3	11.8	19.2	27.9	38.1	49.3	60.	68.6	73.6	75.	74.	71.2	66.1	59.3	53.	47.9	45.2	41.4	37.5	34.1	31.	27.7	24.2	43.579	75
	TAKOMAREC	14.5	18.	22.3	28.7	36.3	44.7	53.3	60.9	67.2	72.4	74.2	74.4	72.6	69.1	65.2	61.5	55.5	49.6	45.	41.1	37.9	35.3	33.8	30.3	48.492	74.4

Since starting ozone measurements, Bald Eagle did provide our highest 8-hour average at **81ppb**.

Advancing Understanding of Air Quality at Bald Eagle

As monitoring continues and a full year of data is collected, this site will help DOEE better understand seasonal air quality patterns and how nearby sources may influence the surrounding community.

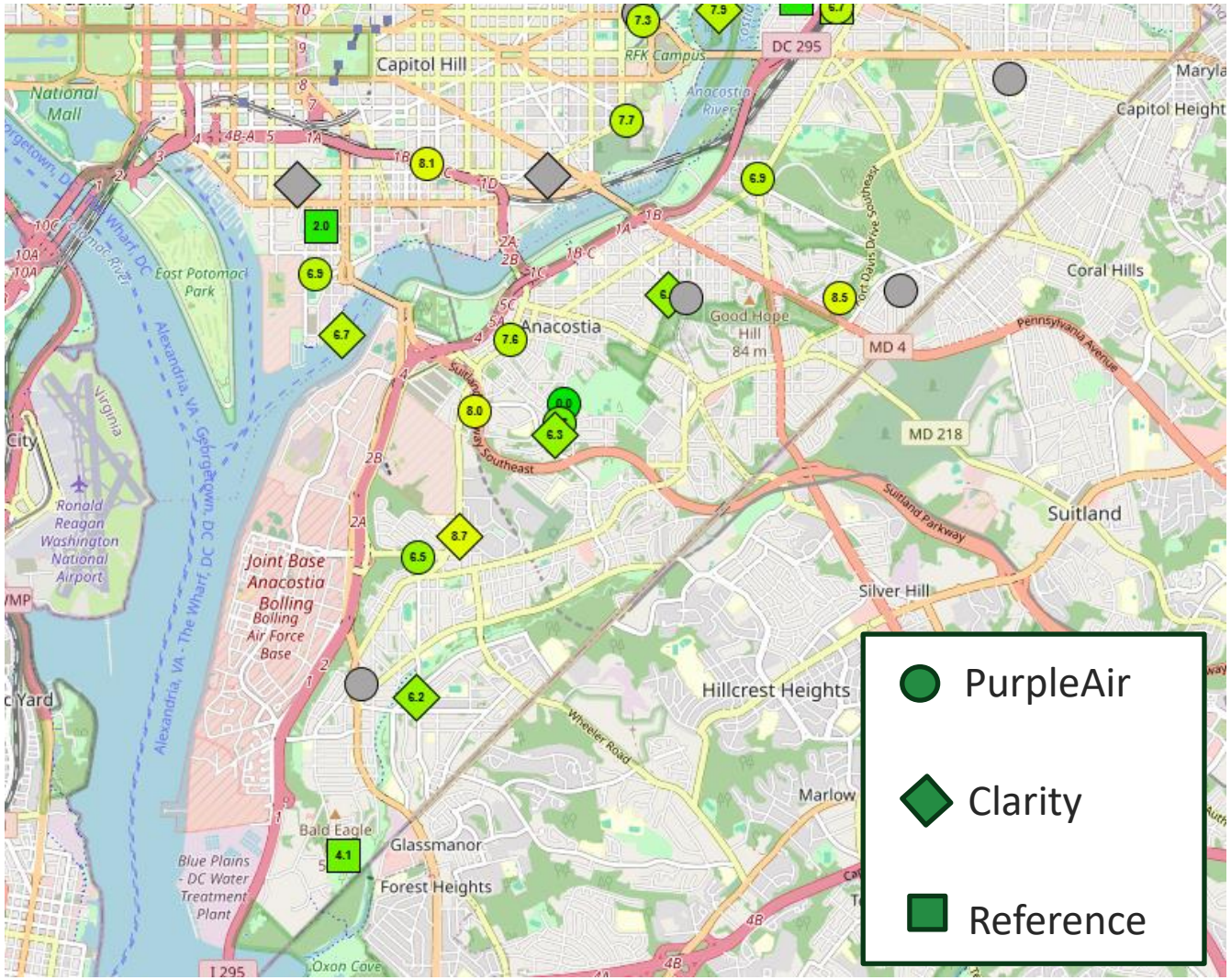
DOEE is also currently supplementing this monitoring with the placement of low-cost air quality sensors.

Low-cost Sensors in Ward 8 – Park Bench

Bench monitor installed at Barry Farm Recreation Center in spring 2026; data coming soon

Sensors like the one shown above have been installed at multiple locations in Ward 8

Low-cost Sensors in Ward 8 – Clarity/Purple Air



Clarity and PurpleAir monitors are being deployed

Clarity map

PurpleAir map

Wrap Up

Air Data Summary

- If trends continue, $PM_{2.5}$ will be compliant with the NAAQS
- Black carbon levels are typically rising above 1 µg/m^3
- Ozone had the greatest exceedance one day in 2025, but still too soon to see if it is a trend
- Pollution generally appears to be associated with vehicle traffic

Next steps

- DOEE will continue to expand the low-cost sensor network
- Analyze the data collected from all of the monitors and sensors

Questions?

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Timelines for NAAQS Design Values

- **Ozone 8-hour (2015)**
  - The design value is the annual fourth-highest daily maximum 8-hour ozone concentration averaged over three years.
  - First valid design value will be for 2028 (published in 2029)
- **PM 2.5 Annual (2024)**
  - The design value is the annual arithmetic mean concentrations, averaged over 3 years.
  - First valid design value will be for 2027 (published in 2028)
- **PM 2.5 24-hour (2024)**
  - The design value is the 98th percentile concentrations, averaged over 3 years.
  - First valid design value will be for 2027 (published in 2028)
- **NO2 1-hour (2010)**
  - The design value is the annual 98th percentile of the daily maximum 1-hour concentration values, averaged over three consecutive years.
  - First valid design value will be for 2028 (published in 2029)
- **NO2 Annual (1973)**
  - The design value for the annual NAAQS is the annual arithmetic mean concentration.
  - First valid design value will be for 2025 (published in 2026)