

Air Monitoring Network Update



Ryan Biggerstaff & Bryan Sims
Air Quality Advisory Council Meeting
October 2024

Monitoring Network Update

- **Current Site Status**
- **Types of Monitoring Sites**
- **Sensors**
- **Last FY's Network Changes**
- **Next FY's Network Changes**

Site Status

■ 35 Total Sites – OKC, Tulsa, Others

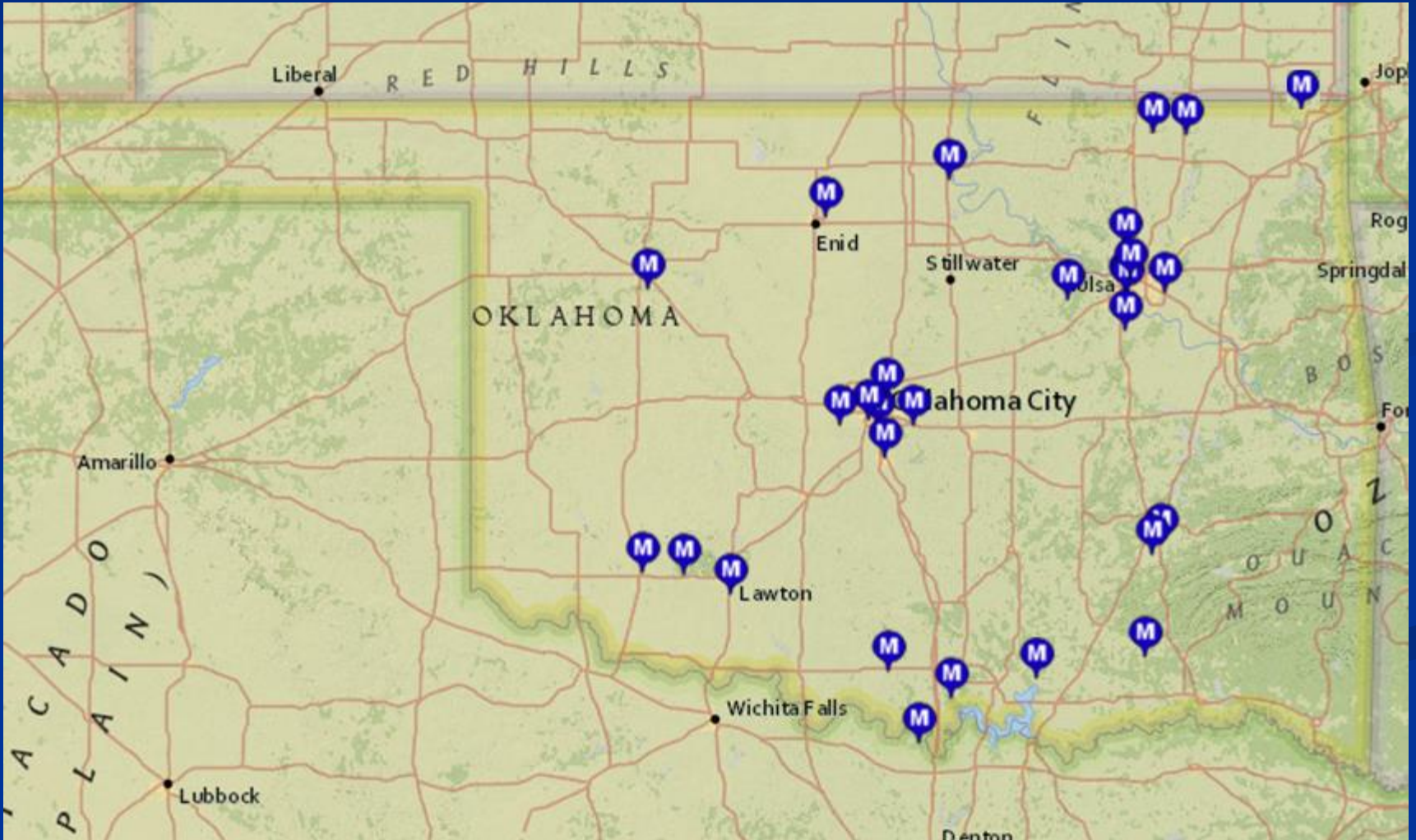
OKC Metro Sites			
Site #	Site Name	City	Pollutants
035	OKC Firestation	OKC	PM10, PM2.5
049	Moore	Moore	O3, PM2.5
096	Choctaw	Choctaw	O3
097	Will Rogers Park	OKC	CO, PM2.5, NO2, Black Carbon
101	Yukon	Yukon	O3
1037	OKC	North OKC	CO, O3, PM10, PM2.5, SO2, NO2, Toxics
VG	Myriad Garden	OKC	O3, PM2.5

Tulsa Metro Sites			
Site #	Site Name	City	Pollutants
144	Mannford	Mannford	O3
174	Glenpool	Glenpool	O3, PM2.5
175	Tulsa	Tulsa	SO2, H2S
178	Lynn Lane	East Tulsa	O3
179	Tulsa Riverside	Tulsa	Storage
235	Tulsa	Tulsa	SO2, H2S, Toxics
226	Skiatook	Skiatook	O3
1127	Tulsa(NCore)	North Tulsa	CO, NO2, NOy, O3, PM10, PM2.5, SO2, NATTS Toxics, Radnet

Other Sites			
Site #	Site Name	City	Pollutants
207	Okla Union School	Lenapah	O3, PM2.5
217	Copan	Copan	O3
297	Healdton	Healdton	O3, PM2.5
300	Burneyville	Burneyville	O3
313	OU Bio Station	Willis	O3 - Project Discontinued
324	Tish - Murray St.	Tishomingo	O3
415	McAlester	McAlester	O3, PM2.5, PM10
416	Savanna	Savanna	Lead – Moving
555	Kremlin	Kremlin	SO2
604	Ponca City	Ponca	SO2, PM2.5
651	Lawton	Lawton	O3, PM2.5
671	Waurika	Waurika	O3
711	Great Plains	Mountain Park	O3, NO2
860	Seiling	Seiling	O3, PM2.5
1074	Kessler	Woody Chapel	O3
522	Commerce	Commerce	Toxics – Study Completed
OK01	McGee Creek	Lane	Hg
OK04	Lake Murray	Ardmore	Hg
OK06	Wichita Mtns	Cache	Hg
OK31	Copan	Copan	Hg

Site Status

- 35 Total Sites – Map View



Site Types

- Unsheltered Collectors – 6
- 8 x 10 Buildings – 20+
- Mobile Trailers - 2
- Supersites - 2

Site Types

Simple Outdoor Collection



Site 035 Downtown
OKC Firestation
Particulate Matter



OK06 Wichita Mtns.
Mercury Deposition
Network (MDN)

Site Types

Typical Site Buildings



Site 415 - McAlester
Ozone, Continuous & Filter
Based PM2.5, Visibility



Site 096 - Choctaw
Ozone, Met

Site Types

Typical Site Buildings



Site 175 – Tulsa Newblock Pk
SO₂ & H₂S



Site 860 - Seiling
Ozone and Continuous PM

Site Types

Temporary Monitoring Trailer



Site 522 - Commerce
Toxics VOC, Carbonyls & Metals

Site Types

Supersites



Site 1127 – North Tulsa NCore

Site Types

Supersites



Site 1127 – North Tulsa NCore

Site Types

Supersites



Site 1037 – OCUSA in North OKC

Site 1037 – OCUSA in North OKC

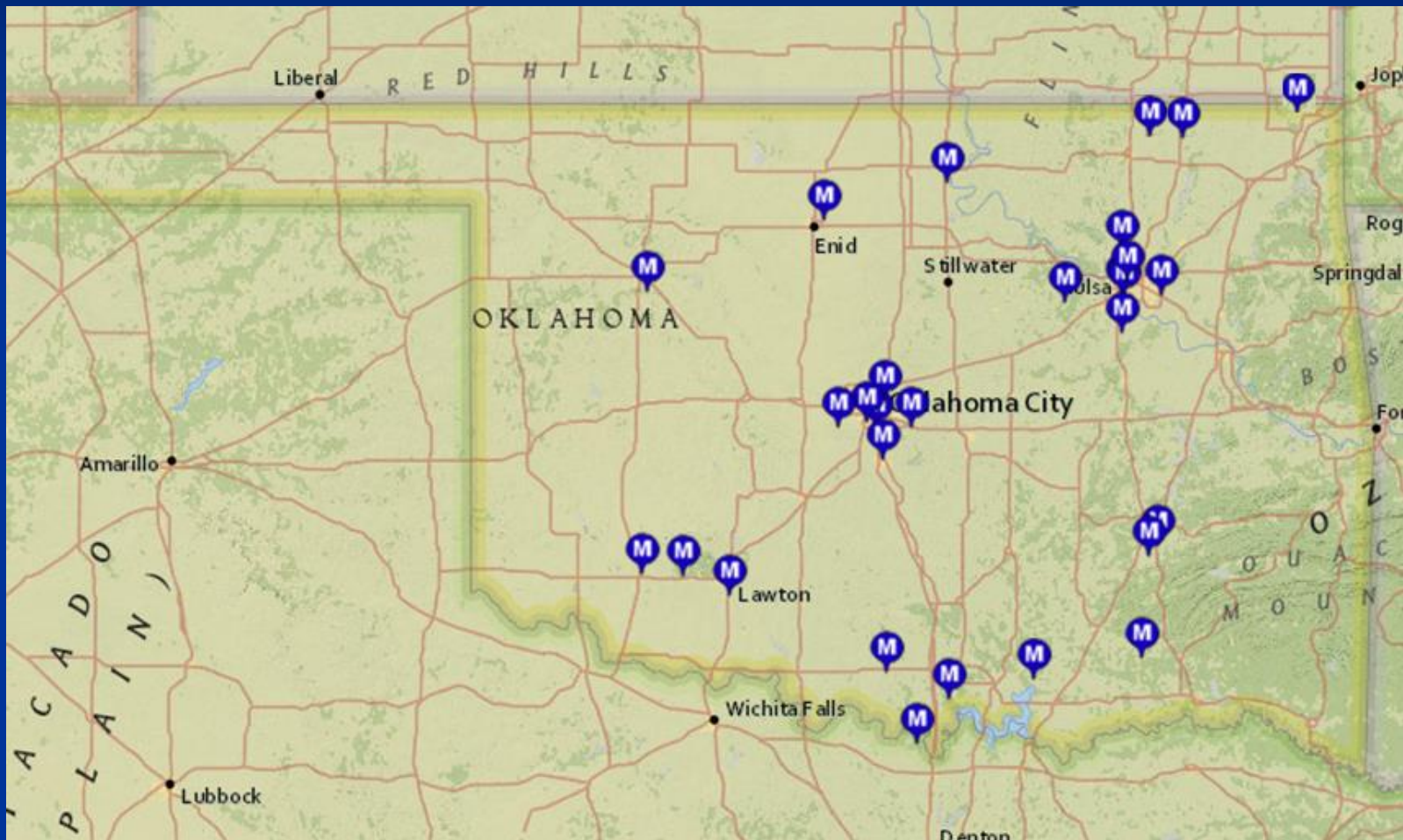
Educational Labeling



Sensors



Before Sensors



Last FY's Network Changes

■ Red River Ozone

Two-year rotation no longer needed due to sensor replacement. Healdton site will serve as collocation for a year.

■ Commerce Site (near Miami)

Toxics monitoring partnership with the Quapaw Nation was completed.

■ Savanna and Glenpool Relocation

Relocation in progress. Needed due to siting criteria issues.

Next FY's Network Changes

■ Flint Hills Special Purpose

Two-year rotation no longer needed due to sensor replacement. Copan will serve as collocation for a year.

■ Panhandle Sensor Project

Partnering with PSU and EPA to locate sensors in the panhandle counties.

■ PAMS (Photochemical Assessment Monitoring Stations) Expansion at Tulsa NCore Site 1127

>1 mil population CBSA

■ Tulsa Near Road (NO₂/PM_{2.5}/Bk Carbon)

>500 K population CBSA & traffic count

Site location has been found & details worked on.

Recent Challenges

■ Personnel update.



■ Instruments, repairs and supply delays.

Supply chain and purchasing problems look to continue to be an issue. Constant need to be proactive!

New PM_{2.5} NAAQS Standard

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- On February 7, 2024 EPA strengthened the annual PM_{2.5} standard from its previous level of 12.0 μg/m³ to 9.0 μg/m³, but did not change the current:
 - secondary (welfare-based) annual PM_{2.5} standard,
 - primary and secondary 24-hour PM_{2.5} standards, and
 - primary and secondary PM₁₀ standards.
- In addition, EPA made revisions to other key aspects related to the PM NAAQS, including revisions to the Air Quality Index (AQI) and monitoring requirements

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Designations Process Timeline

- Annual mean, averaged over 3 years.
- Attainment designations are generally made within 2 years of setting/revising a NAAQS.
 - 2/7/2025: Governor's office must recommend to EPA any areas that the state recommends be placed in non-attainment.
 - Based on 2021, 2022, and 2023, monitoring data
 - EE Demos for these years must have been submitted.
 - 5/1/2025: 2024 Monitoring data is certified.
 - 9/30/2025: Initial Notification and EE Demo Submittal for data in 2024.
 - 2/6/2026: EPA makes final designation decisions.
 - Based on 2022, 2023, and 2024 monitoring data

Current Standing

Primary Standard = 9.0 $\mu\text{g}/\text{m}^3$ 3-Yr Avg.

Secondary Standard = 15 $\mu\text{g}/\text{m}^3$ 3-Yr Avg.

Site Name	Annual Wtd Mean ($\mu\text{g}/\text{m}^3$)				3-Yr Design Value	
	2021	2022	2023	2024*	2021-2023	2022-2024*
OKC Downtown	8.4	7.4	9.5	7.9	8.4	8.3
Moore	9.9	8.7	9.2	9.6	9.3	9.2
OKC Near Road	10.0	8.3	8.9	9.6	9.1	8.9
Glenpool	8.9	7.4	8.1	9.1	8.2	8.2
Healdton	7.9	6.7	7.5	9.2	7.4	7.8
McAlester	8.7	7.9	8.0	9.0	8.2	8.3
Ponca City	10.5	7.5	9.2	10.2	9.0	9.0
Lawton	7.5	7.0	6.9	6.8	7.1	6.9
Seiling	6.9	6.8	7.1	7.7	6.9	7.2
OKC North	9.5	8.3	8.1	9.3	8.6	8.6
Tulsa Central	9.1	8.2	9.1	9.2	8.8	8.8

* Data collection for 2024 is ongoing and values will be updated quarterly

Correction equation applied to data derived from Teledyne T640 or T640x instruments

Complications

- Continuous particulate analyzers originally designated as being equivalent to the Federal Reference Method have been seen to have a high bias.
- EPA has permitted the manufacturer of these devices to release firmware that was intended to correct this going forward.
- EPA released a revised dataset that “corrects” this data back to 2017.

Ozone

New Review of Ozone NAAQS

- On Aug. 21, 2023, EPA announced a new review of the Ozone NAAQS.
- Next steps include:
 - Fall 2024—EPA hopes to release draft Integrated Review Plan (IRP) volumes 1 and 2
 - Then...:
 - IRP Volumes 3 and 4
 - Integrated Science Assessment
 - Policy Assessment
 - Clean Air Scientific Advisory Committee (CASAC) Review & Recommendation.

Current Standing vs Anticipated

Ozone Annual Means, Averaged Over 3 Years						
Primary Standard = .070 ppm 4th highest 8-hour average						
Site Name	4th Highest Value (ppm)				3-Yr Avg.	
	2021	2022	2023	2024*	2021-2023	2022-2024*
Mannford	0.063	0.070	0.070	0.069	0.067	0.069
Tulsa East	0.068	0.073	0.078	0.069	0.073	0.073
Tulsa Central	0.064	0.073	0.075	0.070	0.070	0.072
Skiatook	0.066	0.075	0.074	0.071	0.071	0.073
Glenpool	0.063	0.070	0.072	0.071	0.068	0.071
OKC North	0.069	0.072	0.072	0.072	0.071	0.072
Moore	0.067	0.070	0.072	0.074	0.069	0.072
Choctaw	0.068	0.073	0.067	0.076	0.069	0.072
Yukon	0.070	0.069	0.073	0.072	0.070	0.071
Lawton	0.066	0.068	0.071	0.073	0.068	0.070
McAlester	0.066	0.064	0.072	0.067	0.067	0.067
Purcell	0.070	0.070	0.074	0.076	0.071	0.073
Seiling	0.062	0.069	0.068	0.072	0.066	0.069

* All 2024 data is preliminary and subject to change

Anticipated Timeline on a Possible Nonattainment Designation

- The CAA requires EPA to complete the initial designation process within 2 years of promulgation of a new or revised NAAQS.
- EPA can, but has no statutory requirement to, make designations between these changes of the standard.
- If final released in 2025, designate in 2027
 - Based on 2024-2026 monitoring data
- If final released in 2026, designate in 2028
 - Based on 2025-2027 monitoring data

Questions?

- Ryan Biggerstaff – 405-702-4141 (Monitoring East)
- Bryan Sims – 405-702-4139 (Monitoring West)