



**City of Dallas**

# **Dallas Community Air Management Program (*D-CAMP*) Update**

**Environmental Commission  
July 10, 2024**

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Office of Environmental Quality & Sustainability  
City of Dallas

# Presentation Overview



- Background/History
- Sensor Deployment
- Outreach/Sensor Summits
- Challenges
- Next Steps

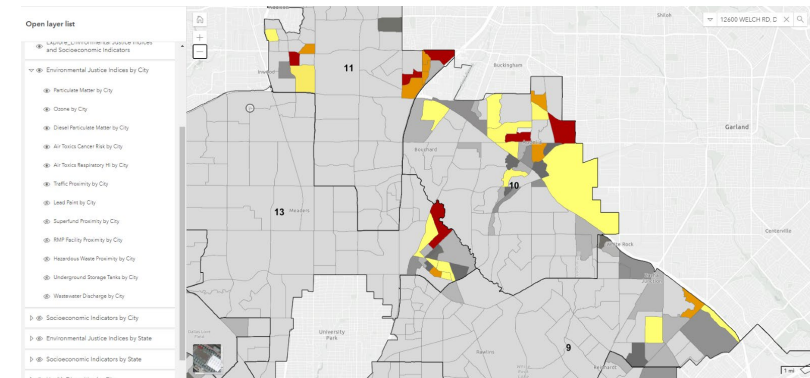
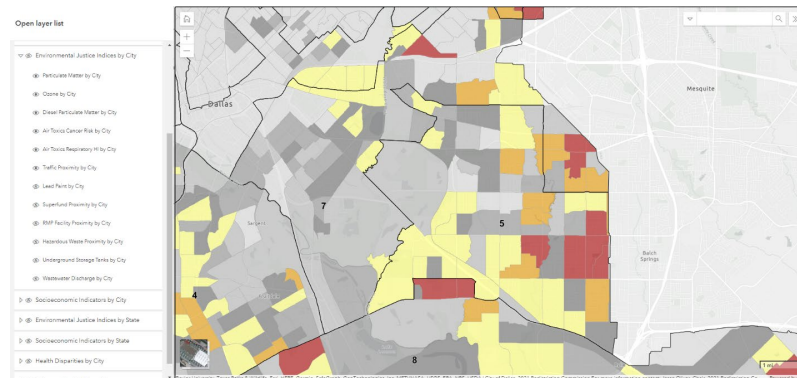




# Background/History



- CECAP Goal 8: All Dallas's communities breathe clean air.
  - Action 2: Partner with nonprofits and schools to develop and implement non-regulatory monitors in neighborhoods.
- EJ considered on location selection



# Background/History



- Network has grown from 5 sensors deployed in February 2023 to 24 deployed across Dallas.
- Non-regulatory
  - Co-located with regulatory grade reference monitors
  - Correction factors applied to collected data
- Potential use of data collected
  - Public knowledge, land use planning, zoning cases, air quality investigations, asthma education outreach, environmental studies, urban heat island studies



# Sensor Pod Locations



## Pods installed February 2023

- West Dallas Multipurpose Center **[District 6]**
- Fish Trap Lake Park (replaced with pod with SO<sub>2</sub> sensor October 2023) **[District 6]**
- Larry Johnson Recreation Center **[District 7]**
- Mill Creek Batch Plant **[District 7]**
- South Central Park in Joppa **[District 7]**

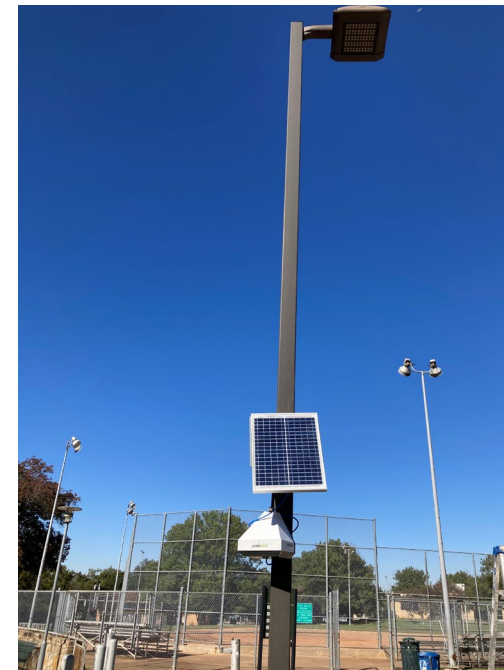


# Sensor Pod Locations



## Pods installed in October & November 2023

- Mountain Creek Library **[District 3]**
- Park Forest Library **[District 13]**
- Polk Recreation Center **[District 2]**
- Myers Prosperity Park **[District 7]**
- Martin Weiss Park **[District 1]**
- Westhaven Park **[District 3]**





# Sensor Pod Locations



## Pods installed in October & November 2023

- Flag Pole Hill Park **[District 10]**
- MoneyGram Park **[District 6]**
- Dallas Zoo **[District 4]**
- Floral Farms I  
(Simpson Stewart Road) **[District 8]**
- Floral Farms II  
(9527 S. Central Expressway) **[District 8]**



# Sensor Pod Locations



## Pods installed in 2024

- Willis Winters Park **[District 14]**
- Tommie Allen Recreation Center **[District 8]**
- Holcomb Park **[District 5]**
- Samuell Garland Park **[District 9]**
- Friendship Park **[District 10]**
- Fritz Recreation Center **[District 11]**
- Campbell Green Park **[District 12]**
- Joppy Momma's Farm **[District 7]**





# Air pollutants measured

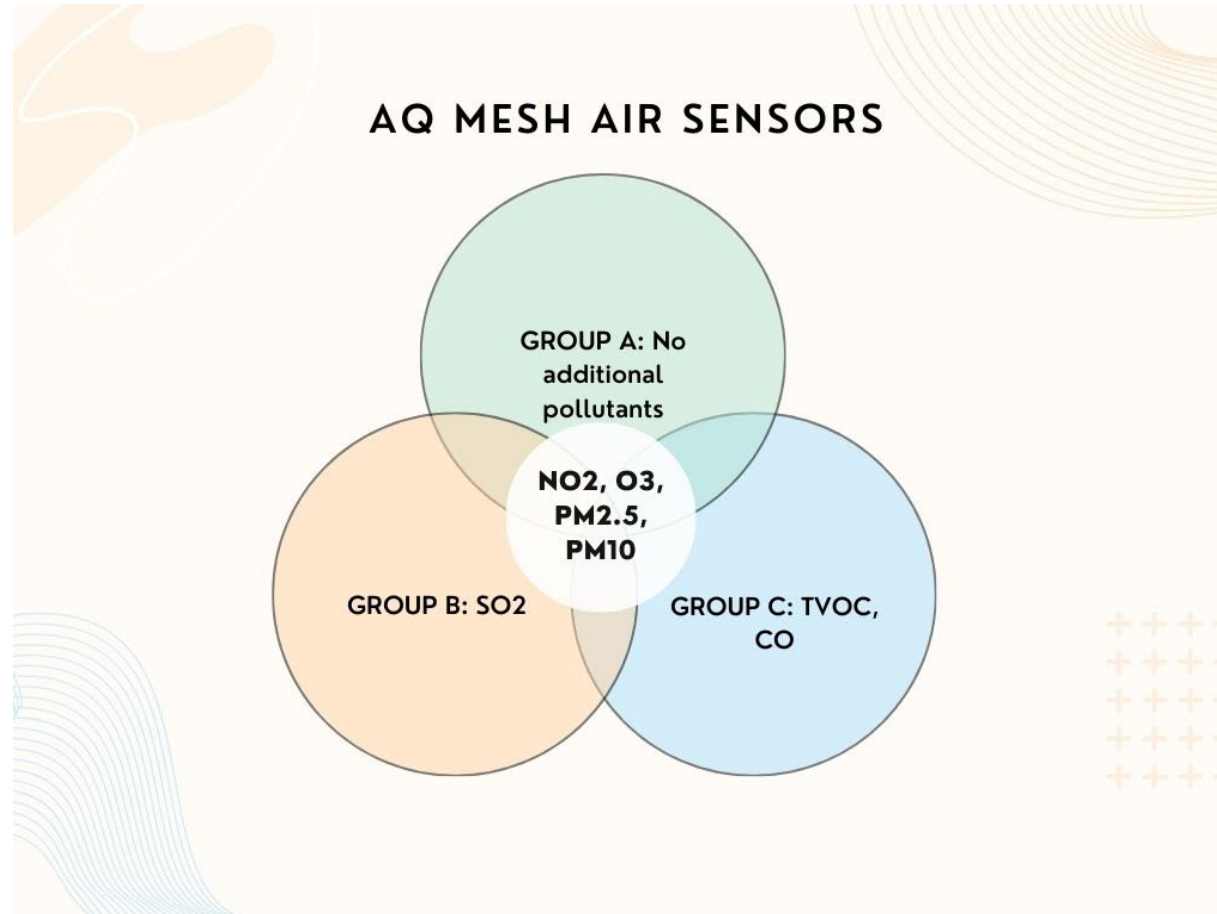


## GROUP A

- West Dallas Multipurpose Center
- South Central Park
- Larry Johnson Recreation Center
- Mill Creek Batch Plant
- Floral Farms I
- Floral Farms II
- Polk Recreation Center
- Flag Pole Hill Park

## GROUP B

- Fish Trap Lake
- Friendship Park
- Joppy Momma's Farm
- Mountain Creek Library
- Myers Prosperity Park
- Samuell Garland Park
- Dallas Zoo
- Holcomb Park



## GROUP C

- Campbell Green Park
- Fretz Recreation Center
- Tommie Allen Recreation Center
- Willis Winters Park
- Westhaven Park
- MoneyGram Park
- Martin Weiss Park
- Park Forest Library



# EPA State EJ Grant West Dallas



Texas A&M Texas Transportation Institute (TTI) put up 4 sensors in West Dallas zip codes 75211 & 75212

- Emma Carter Park
- Jaycee Zaragoza Recreation Center
- Arcadia Park
- Martin Weiss Park

TTI deployed Aeroqual AQY-R sensors.

- Ozone
- NO<sub>2</sub>
- PM<sub>10</sub>
- PM<sub>2.5</sub>

Displayed with group A on Dashboard



# EPA Government to Government Forest District Grant



- Planned 10 Aeroqual Units
- 120 months of monitoring
- OEQS to oversee installation and maintenance by Texas A&M Transportation Institute





# Pollutant levels detected of note



- High values indicate exceedances from EPA's NAAQS
- Seasonal trends
  - June-September: High NO<sub>2</sub> and O<sub>3</sub> values
    - High NO<sub>2</sub> values appeared to be an error due to extreme heat (and/or humidity) during summer having an impact on the electro chemical sensor, especially when temperatures were near 100F or above
    - There were 50 Ozone Exceedance Days for the Season, region-wide
    - High values recorded at:
      - South Central Park
        - July-September 2023, High NO<sub>2</sub>
        - August-September 2023- High O<sub>3</sub>
      - West Dallas Multipurpose Center
        - July-August 2023, High NO<sub>2</sub>
        - August 2023- High O<sub>3</sub>
      - Fish Trap Lake
        - July-August 2023, High NO<sub>2</sub>
        - June 2023- High O<sub>3</sub>
      - Mill Creek Batch Plant
        - July-August 2023, High NO<sub>2</sub>
      - Larry Johnson Recreation Center
        - July-August 2023, High NO<sub>2</sub>
- Mill Creek Batch Plant
  - March-April 2023, High NO<sub>2</sub>

The spikes in NO<sub>2</sub> were analyzed and discussed with DWU. The spikes were likely from parked diesel-powered heavy equipment idling adjacent to the sensors. This equipment idling issue has since been resolved.



# Outreach



- Dashboard
- Data reports on [dallasclimateaction.com](http://dallasclimateaction.com)
- Community engagement
- Sensor Summit



# D-CAMP Dashboard



- Collaboration with Office of Data Analytics & BI
- Version 2
  - Better UX/UI
  - Displays all air pollutants measured
- Access Dashboard via
  - greendallas.net
  - dallasclimateaction.com
  - <https://experience.arcgis.com/experience/f5da4054747748d9951d66ddf529158d>

Dallas Community Air Management Program  
Dashboard





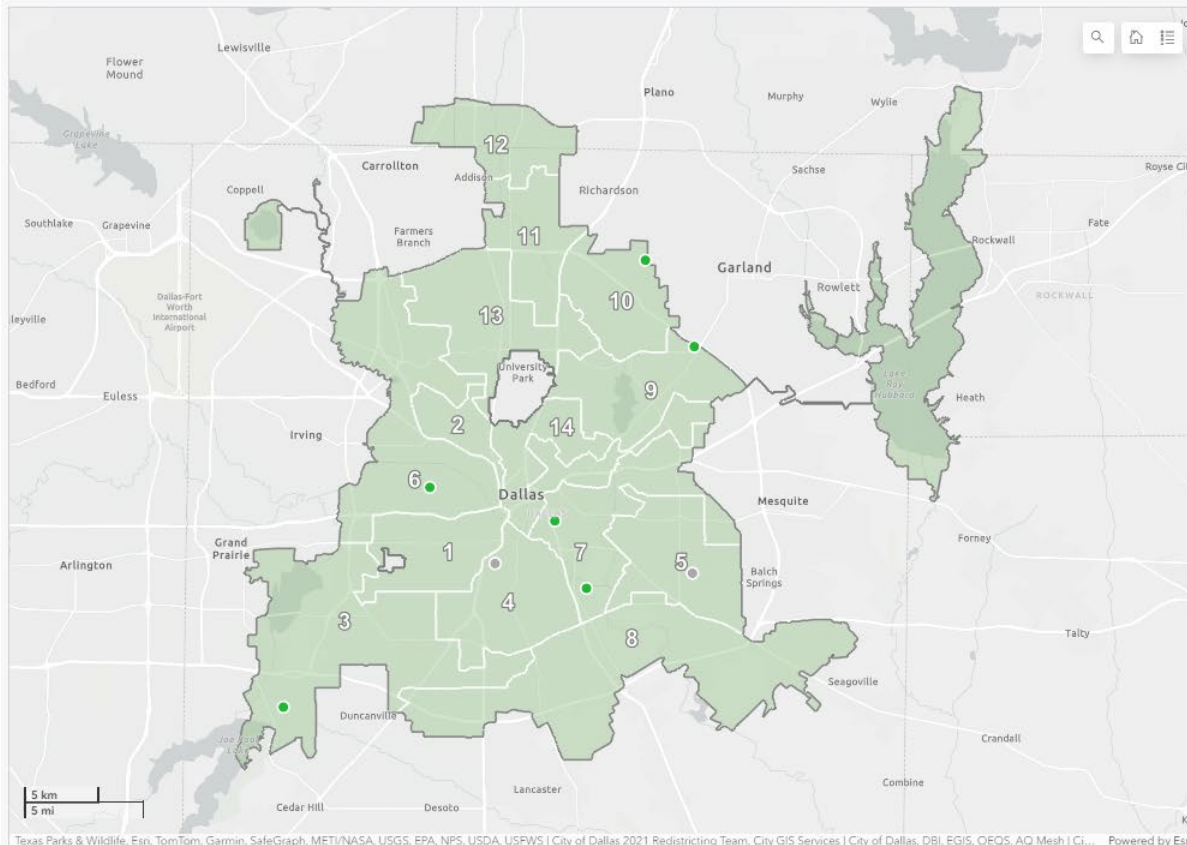
# D-CAMP Dashboard



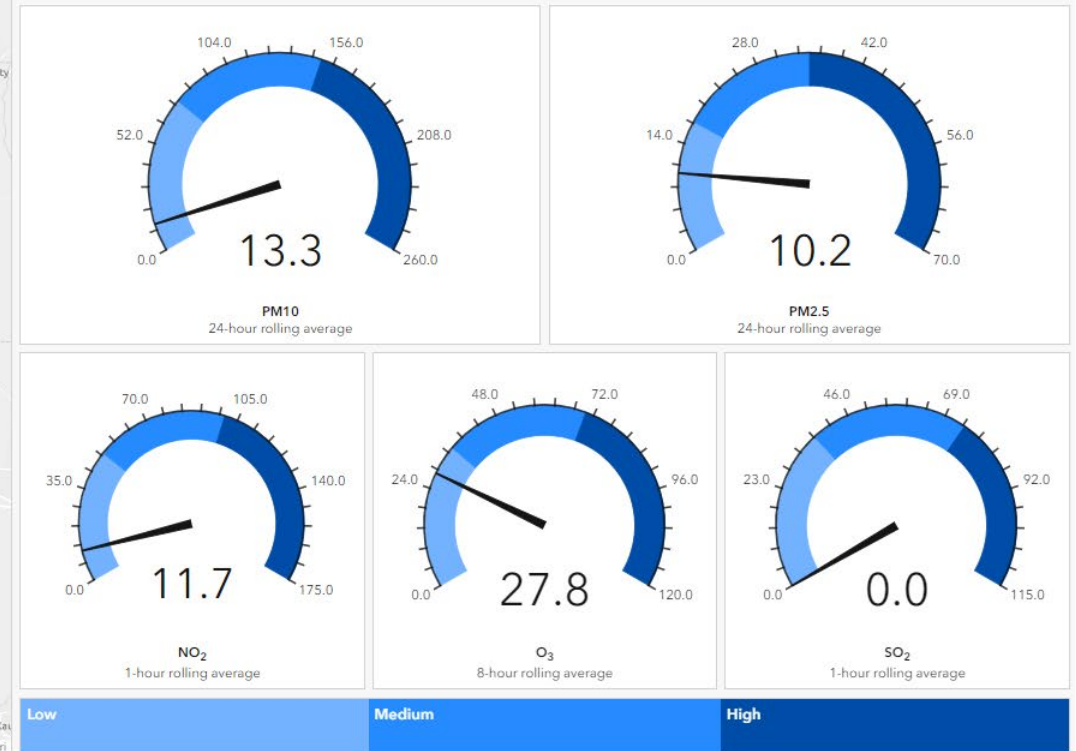
City of Dallas Air Quality Monitoring  
Hourly Monitoring, a collaboration between Office of Data Analytics & Business Intelligence, and Office of Environmental Quality & Sustainability

Select a station  
Joppy Momma's Farm

## Group B Monitor Averages



Air Monitoring Station:  
Joppy Momma's Farm



# D-CAMP Dashboard



City of Dallas Air Quality Monitoring  
Hourly Monitoring, a collaboration between Office of Data Analytics & Business Intelligence, and Office of Environmental Quality & Sustainability

## City Wide Monitoring Station Averages

<p><b>16.0</b></p> <p>PM10 in <math>\mu\text{g}/\text{m}^3</math></p> <p>A decrease of 5.7 <math>\mu\text{g}/\text{m}^3</math></p>	<p><b>6.1</b></p> <p>PM2.5 in <math>\mu\text{g}/\text{m}^3</math></p> <p>A decrease of 6.9 <math>\mu\text{g}/\text{m}^3</math></p>	<p><b>19.1</b></p> <p>NO2 in ppb</p> <p>A decrease of 7.1 ppb</p>	<p><b>26.6</b></p> <p>O3 in ppb</p> <p>A decrease of 15.2 ppb</p>	<p><b>0.3</b></p> <p>CO in ppm</p> <p>An increase of 0.0 ppm</p>	<p><b>3.3</b></p> <p>tVOC in ppb</p> <p>A decrease of 0.1 ppb</p>	<p><b>1.0</b></p> <p>SO2 in ppb</p> <p>A decrease of 0.8 ppb</p>
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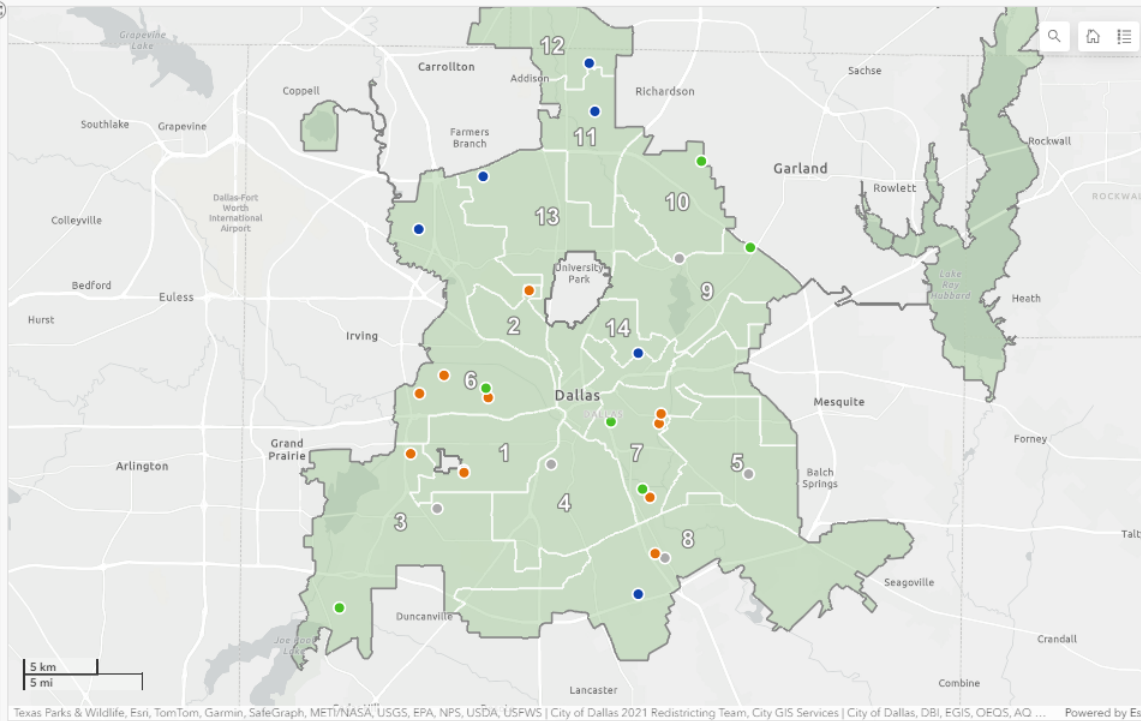
Top number cards for all stations averages are calculated across the previous 24 hours. Increases and decreases are in comparison to 24 hours prior. The 24-hour, 8-hour, and 1-hour rolling averages are recalculated every hour. The gauge range thresholds: Low, Medium, and High were provided by OEQS and may vary from other organization's threshold standards.

- Group A** monitors measures PM2.5, PM10, NO2, and O3.
- Group B** monitors measures PM2.5, PM10, NO2, O3, and SO2.
- Group C** monitors measures PM2.5, PM10, NO2, O3, CO, and tVOC.

Click the Drop Down on the Daily and Hourly Trends and Overall Trends Section to select the different groups.

For more information on locations in each group, see the [FAQ Page](#) or click on the info button in the top right corner.

\*Stations not listed in drop-down are offline for maintenance, cleaning, etc.



**AQ Mesh Air Monitor Stations**

- Group A
- Group B
- Group C

**Stations Offline for Maintenance**

- 

**Council Districts**

-

**Reference Guide**

ppm - Parts per million  
ppb - Parts per billion  
 $\mu\text{g}/\text{m}^3$  - Micrograms per cubic meter  
PM<sub>10</sub> - Particulate Matter  $\leq$  10 microns  
PM<sub>2.5</sub> - Particulate Matter  $\leq$  2 microns  
NO<sub>2</sub> - Nitrogen Dioxide  
O<sub>3</sub> - Ozone  
CO - Carbon Monoxide  
tVOC - Total Volatile Organic Chemical Compounds  
SO<sub>2</sub> - Sulfur Dioxide

**Current Air Quality Index**

Low Level of Air Pollution	<p>O<sub>3</sub> less than 35 ppb NO<sub>2</sub> less 50 ppb PM<sub>10</sub> less than 75 <math>\mu\text{g}/\text{m}^3</math> PM<sub>2.5</sub> less than 17 <math>\mu\text{g}/\text{m}^3</math> CO less than 18ppm SO<sub>2</sub> less than 38ppb</p>
Moderate Level of Air Pollution	<p>O<sub>3</sub> higher than 35 ppb and less than 70 ppb NO<sub>2</sub> higher 50 ppb and less than 100 ppb PM<sub>10</sub> higher than 75 <math>\mu\text{g}/\text{m}^3</math> and less than 150 <math>\mu\text{g}/\text{m}^3</math> PM<sub>2.5</sub> higher than 17 <math>\mu\text{g}/\text{m}^3</math> and less than 35 <math>\mu\text{g}/\text{m}^3</math> CO higher than 18ppm and less than 35ppm SO<sub>2</sub> higher than 38ppb and less than 75ppb</p>
High Level of Air Pollution	<p>O<sub>3</sub> higher than 70 ppb NO<sub>2</sub> higher 100 ppb</p>



# Sensor Summit



- September 2023, March 2024
- Upcoming meeting: September 19, 2024
  - Tarrant County Community College: Trinity River Campus near downtown Ft. Worth
  - 9am-1pm
  - Topics of interest: community impacts, updates from sensor users, health, education on pollutants





# Challenges



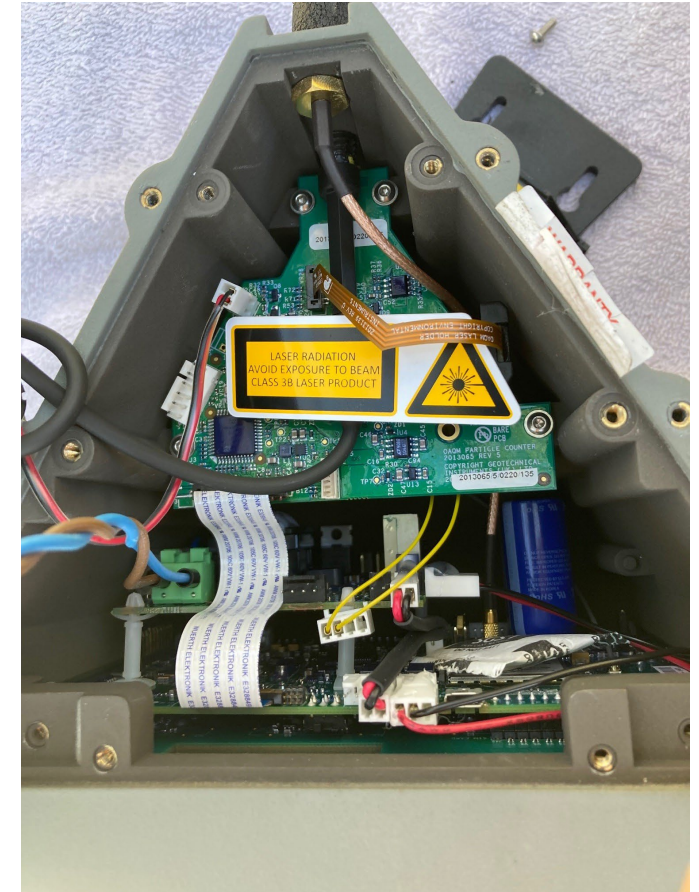
- NO<sub>2</sub> skewed high in summer high temp and humidity
- Pod security
- Battery may struggle to power pod through the night
- PM pump failures
- Software glitches
- Recall updates
- Staff capacity
  - General maintenance
  - Data analysis



# Next Steps



- Data analysis and publication
- West Dallas Grant data analysis
- Forest District grant ramp up
- Continued O&M
  - Buying spare parts
  - Buying extra sensors
  - Rebuilding sensor pods
  - Cellular communication plan renewal
- Outreach/engaging the community
- Brief PTE





# Questions?







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