This handout summarizes key findings from July 2025 to June 2026 of Air Alliance Houston's Community Air Monitoring Program (CAMP). Our network consists of strategically placed air monitors in neighborhoods around Houston.

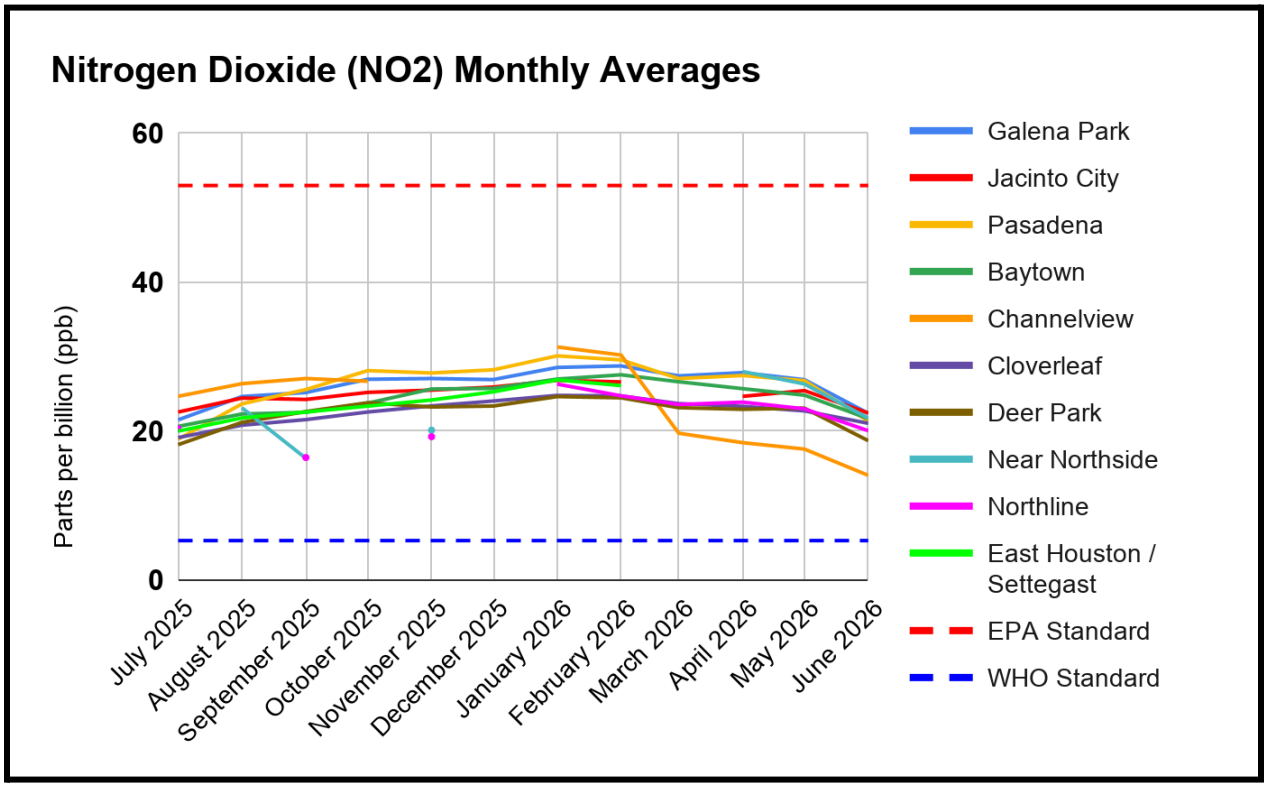
Nitrogen Dioxide (NO_2)

NO_2 is released in vehicle exhaust and from the burning of fossil fuels. When in the atmosphere, NO_2 reacts with sunlight and volatile organic compounds (VOCs) to form ground-level ozone and smog, which can harm human health.

Health Effects: Breathing NO_2 can irritate the eyes, nose, throat, and lungs, causing coughing, shortness of breath, tiredness, and nausea.

Takeaways:

- Average NO_2 concentrations across all communities remained **below** the EPA annual standard of 53 parts per billion (ppb). However, NO_2 concentrations remained **well above** the WHO annual standard of 5.3 ppb.**
- CAMP monitors measured little variation in NO_2 concentrations between neighborhoods.



***See the last page for an explanation of air quality standards and gaps in monitor data.*

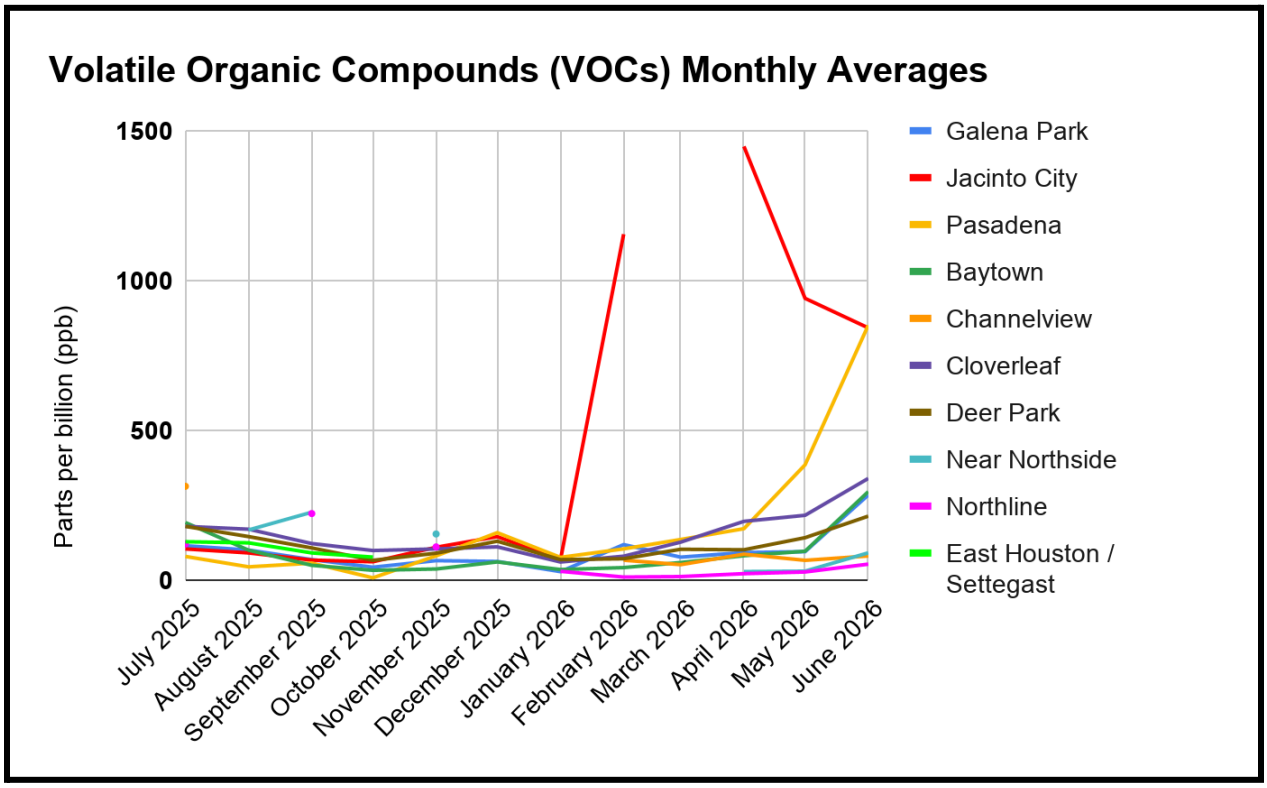
Volatile Organic Compounds (VOCs)

VOCs are highly reactive carbon compounds – such as benzene, formaldehyde, and ethylene – released by vehicle exhaust, refineries, and other industry sources. Because each VOC has differing health impacts, there is no single standard set for VOCs as a group.

Health Effects: Breathing VOCs can irritate the eyes, nose and throat, causing headaches, difficulty breathing, and nausea. It can damage the central nervous system, liver, kidneys, and other organs. Some VOCs can cause cancer.

Takeaways:

- Monitors across the CAMP network saw elevated levels of VOCs in May and June of 2026. During these months, VOC concentrations peaked daily in the early mornings, suggesting that they may be attributable to industrial facility start-up activities.
- **Jacinto City** experienced particularly high VOC levels in February 2026 and April 2026.
- **Pasadena and Cloverleaf** had the second highest VOC levels.



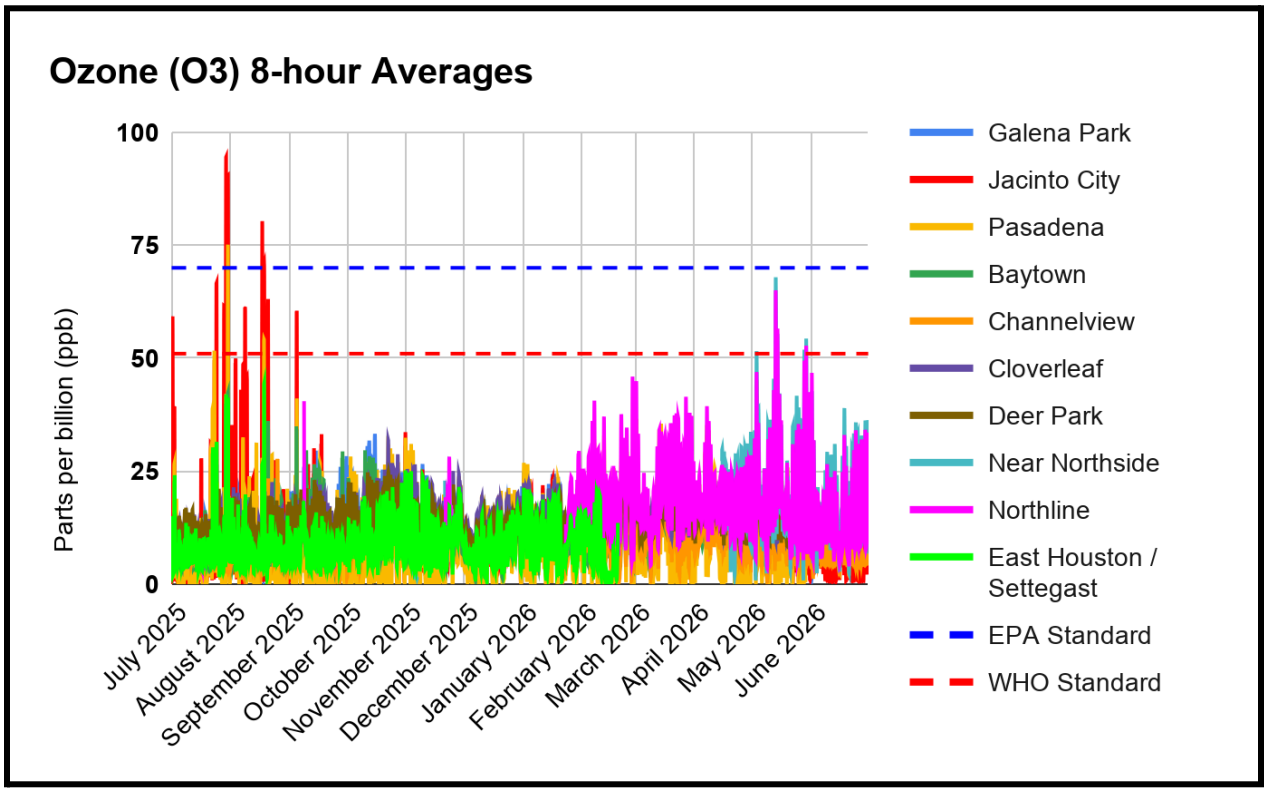
Ozone (O_3)

Ground-level ozone is formed when NO_x and VOCs combine with heat and sunlight in the atmosphere. Ozone is a major component of smog.

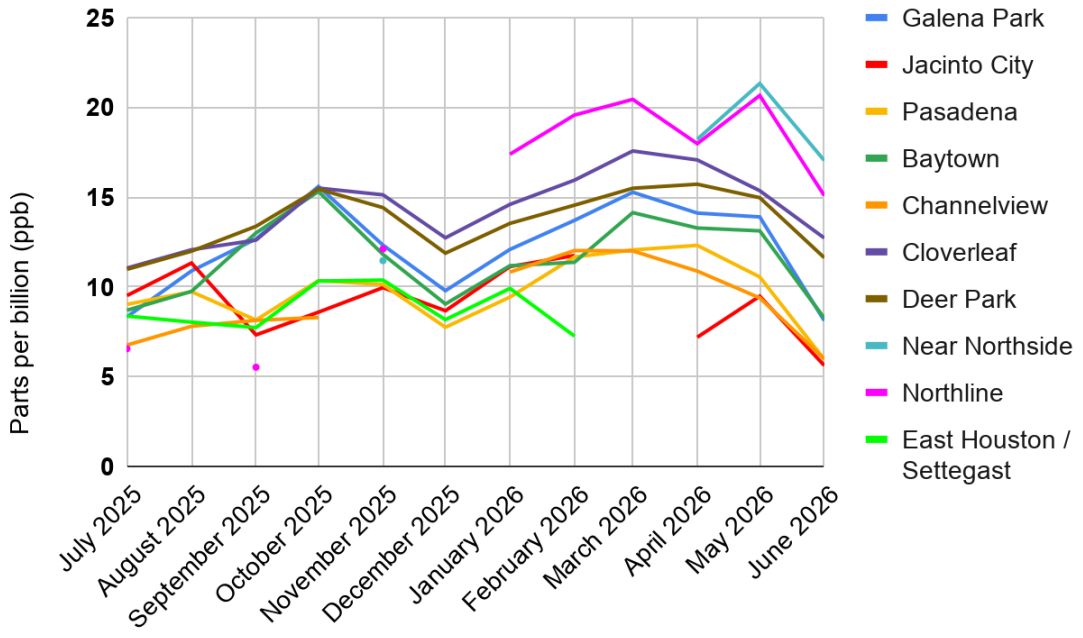
Health Effects: Breathing ozone can cause chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ozone also can reduce lung function and inflame the lining of the lungs.

Takeaways:

- **Jacinto City and Pasadena** experienced O_3 spikes during summer 2025 that surpassed the EPA's 8-hour standard of 70 ppb.
    - This could be due to higher summertime VOC emissions as well as hotter temperatures, both of which contribute to ground-level ozone formation.
- **Near Northside and Northline** saw elevated O_3 levels in summer 2026. While concentrations didn't surpass the EPA's 8-hour standard of 70 ppb, they did surpass the WHO's 8-hour standard of 51 ppb.



Ozone (O3) Monthly Averages



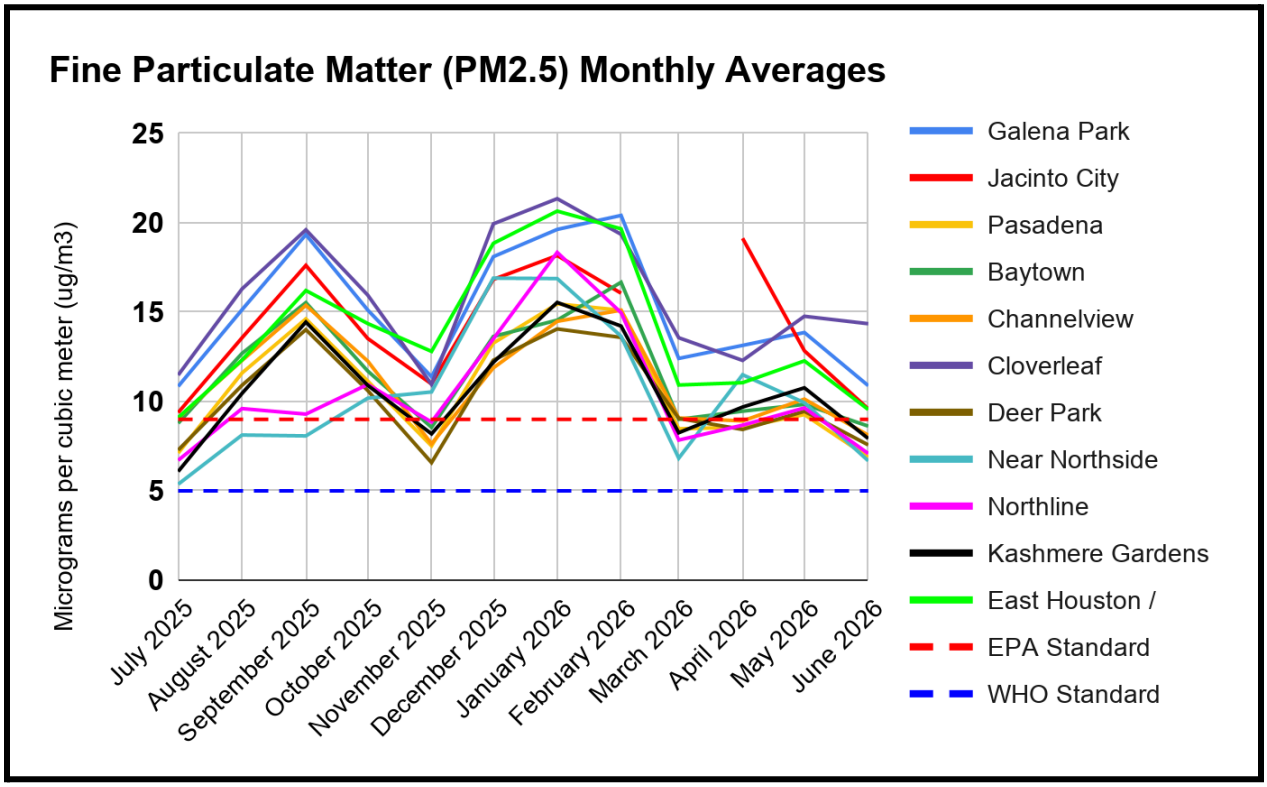
Particulate Matter ($PM_{2.5}$)

Mixture of various particles such as dust, dirt, soot, and smoke emitted by industries, vehicles, construction sites, fires, or unpaved roads.

Health Effects: $PM_{2.5}$ can cause short-term health effects such as eye, nose, throat and lung irritation, coughing, sneezing, runny nose and shortness of breath. $PM_{2.5}$ exposure can also affect lung function and worsen conditions such as asthma and heart disease.

Takeaways:

- Average $PM_{2.5}$ concentrations across all communities remained **above** the NAAQS of 9µg/m^3, and **well above** the WHO's annual standard of 5µg/m^3.
- **Cloverleaf, Galena Park, Jacinto City**, and **East Houston/Settegast** saw the highest $PM_{2.5}$ concentrations. These neighborhoods experience local pollution sources that may account for higher $PM_{2.5}$ concentrations:
    - **East Houston/Settegast:** Concrete batch plants, metal recyclers, trucking, unpaved roads
    - **Cloverleaf, Galena Park, Jacinto City:** Portside emissions, petrochemical operations, shipping emissions



EPA National Ambient Air Quality Standards (NAAQS): Limits set by the Clean Air Act on outdoor air pollution, focusing on levels of carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

WHO Air Quality Guidelines (AQG): The World Health Organization (WHO) has established evidence-based recommendations for limit values to specific air pollutants that protect public health. WHO air quality guidelines exist for carbon monoxide, nitrogen dioxide, ozone, particulate matter ($PM_{2.5}$ and PM_{10}), and sulfur dioxide. The WHO's air quality guidelines are more stringent than the EPA's NAAQS.

Gaps in Monitor Data: Gaps in the graphs above represent times when continuous air quality data was unavailable for parts of the network. These gaps are due to air monitor maintenance activities.