Dearborn Community Air Quality Project

COMMUNITY REPORT








PROJECT BACKGROUND

In 2023, the City of Dearborn's Department of Public Health (DPH) received a grant to launch a new air quality network. This allowed DPH to tackle long-standing challenges and growing issues of community wellbeing. Air pollution is among these priority issues.

PROJECT TIMELINE

MAY 2023
Project begins

AUGUST-DECEMBER 2023
All monitors are placed in the Dearborn community

FEBRUARY 2024
Public dashboard launched

MARCH-APRIL 2024
Focus groups held

MAY 2024
Early data findings explored

MAY 2025
Community Report

As a historically industrial city, Dearborn suffers from air pollution. These issues are felt particularly by the city's South and East ends, which are recognized by the state of Michigan as "overburdened" by pollution and have some of the highest asthma rates nationwide. Exposure to air pollution both causes and worsens these health conditions.

Working closely with Detroit-based JustAir, DPH has collected air quality data for almost two years, making data publicly available through JustAir's dashboard at JustAir.app. This report showcases data from 2024 (the first full year of monitoring) and aims to increase Dearborn community members' understanding of their air quality, explain how to access real-time information, and showcases successes to build on.

Letter from Ali Abazeed

CHIEF PUBLIC HEALTH OFFICER & DIRECTOR OF PUBLIC HEALTH

> Dearborn residents are the experts of their experiences and they understand the air quality in their neighborhoods best. This network has allowed us to validate that lived experience, understand disparities across our city, and focus future work on improving air quality for all.
>
> **ALI ABAZEED**

DEAR NEIGHBORS,

When we founded Dearborn Public Health, we made a promise to put residents' health at the heart of every decision. Clean air is central to that vision. This project isn't just about data. It's about validating our community's lived experience and guiding real solutions to keep all of us safer.

Dearborn residents are the experts of their experiences. This network has allowed us to validate that lived experience, understand disparities across our city, and focus future work on improving air quality for all.

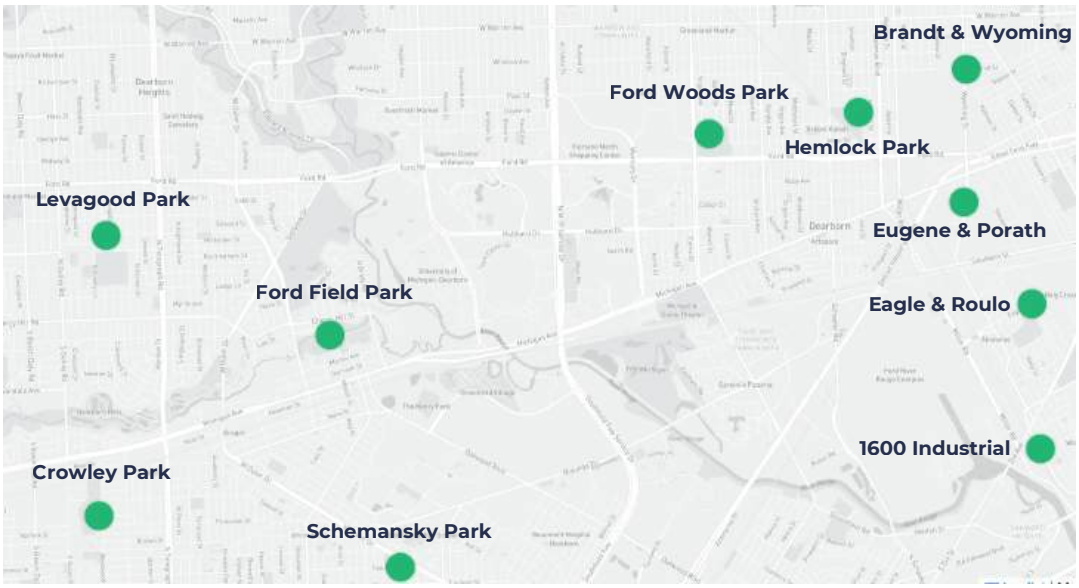
We remain committed to ongoing observation, deeper understanding of disparities, and designing policies that protect every neighborhood. Together, we are building a healthier Dearborn, where every resident can breathe easier and thrive.

Sincerely,

ALI ABAZEED
CHIEF PUBLIC HEALTH OFFICER & DIRECTOR OF PUBLIC HEALTH

Project Overview

MAY 2023 - MAY 2025



GOALS ACHIEVED

This project set out and achieved the following goals:

- Improved the City of Dearborn's air quality monitoring infrastructure
- Create more awareness and engagement around air quality among community members
- Assisted Dearborn in providing accurate air quality data across neighborhoods to efficiently deploy resources and solutions to mitigate health impact.

QUICK STATS

10
Air quality monitors deployed

200+
Residents subscribed to text alerts

1M+
Air quality measurements recorded

Throughout the project, partners deployed ten air quality monitors across Dearborn and launched a publicly accessible dashboard at JustAir.co. Monitor locations were selected based on where people live, spend time, and proximity to industrial corridors. So far, DPH has collected more than 1,035,500 air quality data points. This data is being used to inform future city planning, investments, and programming.

JustAir's public dashboard also allows residents to sign up for air quality alerts and over 200 people are currently receiving text alerts from Dearborn monitors. In addition, the city created an informational social media campaign and generated earned media from the project. Finally, partners created a first-of-its-kind Air Quality Index (AQI) Light at Levagood Park, which showcases colors correlated with air quality.

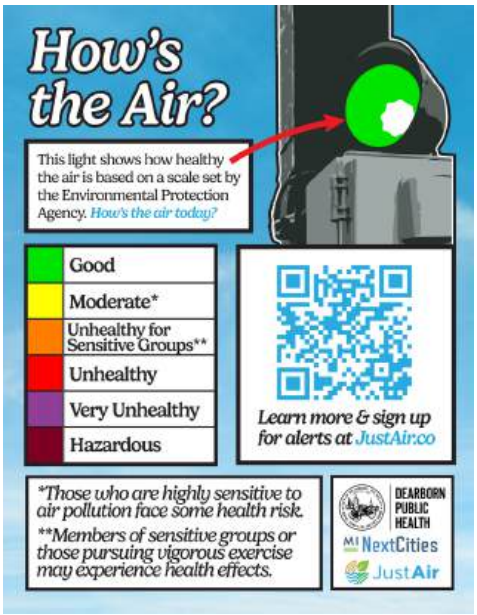
Community Awareness

MARKETING, MEDIA & SIGNAGE

CONNECTING COMMUNITY

The JustAir platform is designed to make air quality data accessible and actionable, empowering residents to make informed health decisions. The City of Dearborn and DPH leveraged these technology tools—including a public dashboard showcasing real-time AQI readings, interactive charts, and educational materials—to support community awareness. The city also actively engaged residents throughout the project through focus group discussions, a successful social media campaign, and informational signage placed directly on monitor poles.

These outreach efforts achieved significant impact: over 200 residents subscribed to air quality text alerts and the project generated considerable media attention. The Dearborn Community Air Quality project was featured in publications like Second Wave Media and highlighted in a United Nations report on local air quality monitoring networks.



Recognizing Dearborn's multilingual community, the city translated monitor signage into multiple languages and installed an AQI light in a public park. This visual indicator allows residents to quickly assess nearby air quality without needing to check their phones or navigate complex air quality data, making the information truly accessible to all community members.

Air Quality Data

MEASUREMENTS & FINDINGS

AIR QUALITY MONITORS & MEASUREMENTS

Dearborn's air quality monitors are small devices mounted on utility poles throughout the city. Each monitor has a solar panel and contains pollutant sensors, but no cameras. The monitors provide real-time air quality data to both the city and residents through the JustAir dashboard. Along with temperature and humidity, Dearborn's monitors measure three types of pollutants:

PM
Particulate Matter

Tiny particles in the air, like dust, soot, and smoke that can penetrate deep into the body to cause health problems.

O3
Ozone

Ground-level ozone forms when chemicals react to heat and sunlight. This forms smog and can irritate breathing.

NO2
Nitrogen Dioxide

A gas produced mainly by vehicle engines and power plants, which contributes to smog and worsens health conditions like asthma.

Data in this report focuses on particulate matter because it is one of the most concerning air pollutants. PM's tiny size allows it to penetrate deep into the lungs and even the bloodstream. This can trigger asthma attacks, worsen heart disease, and cause long-term respiratory problems, making it a critical measure of air quality that directly impacts public health.

AIR QUALITY INDEX

Data in this report is displayed using the Air Quality Index (AQI), which is the Environmental Protection Agency's scale from 0 to 500 that translates complex air pollution measurements into easy-to-understand categories. It uses color-coded levels (green for good, red for unhealthy, etc.) to help people quickly understand current air quality and whether they should limit outdoor activities or take other precautions.

THE AIR QUALITY INDEX
GOOD (0 – 50 AQI)
MODERATE (51 – 100 AQI)
UNHEALTHY FOR SENSITIVE GROUPS (101 – 150 AQI)
UNHEALTHY FOR EVERYONE (151 – 200 AQI)
VERY UNHEALTHY (201 – 300 AQI)
HAZARDOUS (300 + AQI)

Air Quality Data

MEASUREMENTS & FINDINGS

FINDINGS

The data in this report is from 2024, since this was the first complete calendar year of data collection. The city collected data every day from January to December 2024 from ten stationary air quality monitors. These findings primarily focus on readings of particulate matter 2.5 (PM 2.5), tiny solid particles in the air 2.5 micrometers or smaller. PM 2.5 comes from vehicle exhaust, industrial emissions, construction, and natural sources like wildfires - all areas of concern residents brought up through the city's engagement process.

BEST & WORST AIR QUALITY DAYS IN 2024

NOV 23

Best air quality day with an average AQI of 20.4 across all monitors

JULY 5

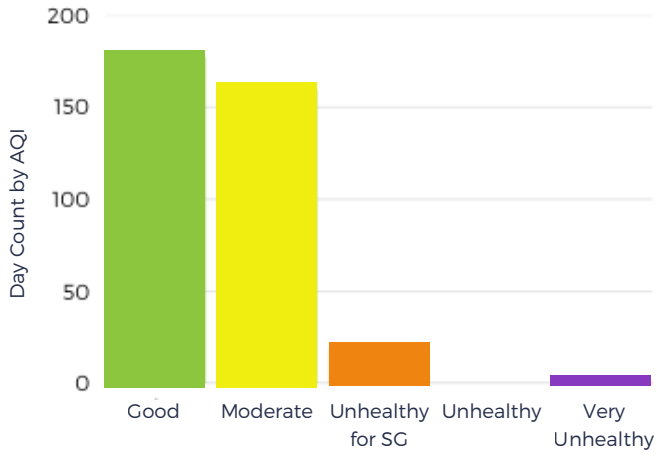
Worst air quality day with an average AQI of 111 across all monitors

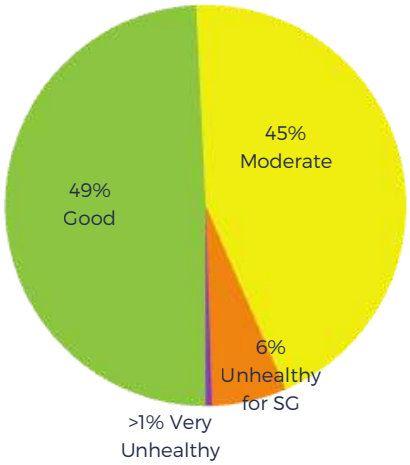
22

Days reached an AQI Unhealthy for Sensitive Groups

MAXIMUM AQI ACROSS ALL MONITORS

The charts below present the same findings two different ways: the highest (or worst) air quality reached each day anywhere in Dearborn's monitoring network. These charts display the highest (most concerning) AQI value from any single monitor that day. Since pollution can vary strongly across the city due to busy roads and industrial facilities, this approach ensures that concerning readings aren't masked by cleaner areas. The most concerning readings were on July 5, likely from fireworks. But many days had comparable averages, if slightly higher in industrial areas.





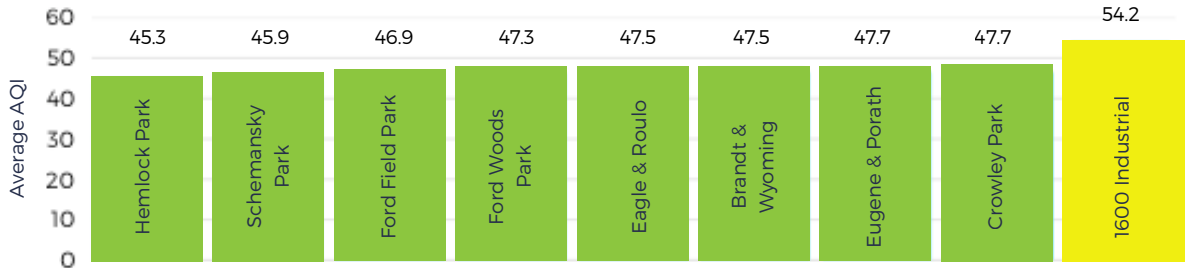
Most days in 2024 had their worst air quality in the 'Good' or 'Moderate' range, which is positive. While 'Moderate' days aren't dangerous for most people, they can cause minor symptoms for sensitive individuals like those with asthma or heart conditions. And 22 days reached 'Unhealthy for Sensitive Groups' and one day hit 'Very Unhealthy,' likely due to Fourth of July firework smoke.

Air Quality Data

MEASUREMENTS & FINDINGS

RANKINGS BY MONITOR

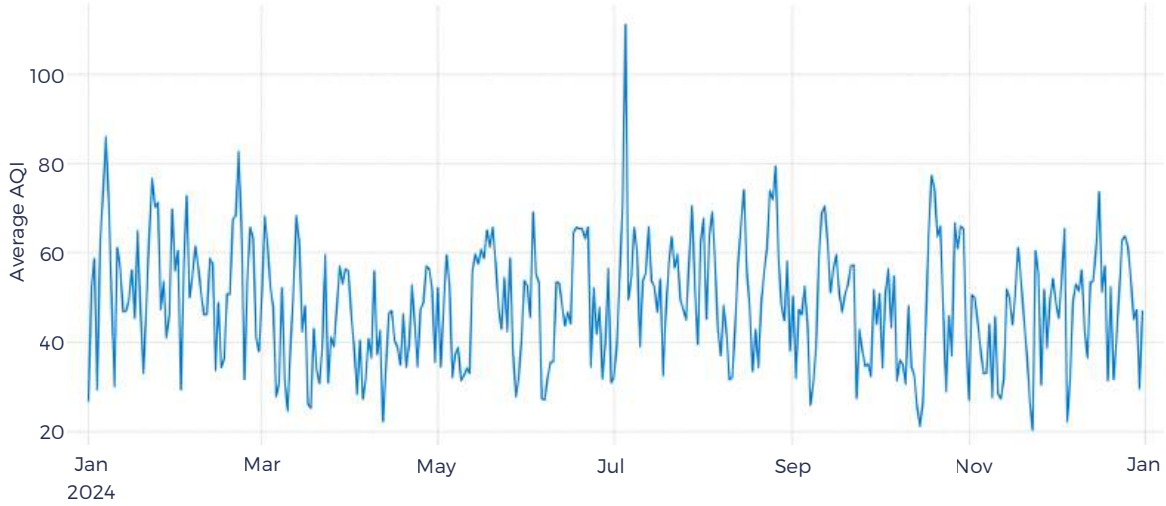
The chart below compares the typical air quality performance across different monitoring locations in the network. Each monitor is ranked by its average AQI over the time period, revealing which areas of the city consistently experience better or worse air quality.



These averages may appear quite close. But because they are from an entire year, even a small difference in the number can mean a significant cumulative impact on health. These rankings reveal a trend: several of the parks recorded lower AQI (better air quality) while industrial areas trended higher. This pattern is not surprising given where pollution sources are located. For example, the monitor at 1600 Industrial, in the Southeast end, had the highest readings of PM10 (dust). (Note: Levagood Park is not included due to a monitor calibration issue that is now fixed.)

TRENDS ACROSS THE YEAR

This chart below displays the daily average AQI calculated across the entire community. Unlike the charts above showing maximum daily readings, this chart averages all monitor readings together each day, providing a general picture of the city's overall air quality trends.



Air quality remained fairly consistent throughout the year, with no significant seasonal differences or major trends from winter to summer. This isn't surprising since poor air quality can occur in both cold and warm weather.

The worst day was July 5th, likely due to lingering fireworks smoke. All monitors showed similar daily patterns: pollution peaked around 8am, decreased through midday, then rose again from 4pm to 10pm, reflecting temperature changes and morning and evening commute traffic.

Taking Action

USE DATA TO STAY SAFE & CREATE CHANGE

RECOMMENDATIONS FOR ACTION

Collecting air quality data is only the first step—the real impact comes from turning that information into concrete actions that protect our health and improve our community's air. There are three types of change individuals or communities can take to stay safe and reduce pollution.

INDIVIDUAL ACTION

Staying informed is the first step to staying safe. Sign up for air quality text alerts at JustAir.app/signup. When you receive a text alert indicating poor air quality, consider taking these actions for you and your community's health: wear an N95 mask outside, avoid outdoor activity, keep windows closed, use indoor air filters and purifiers, choose public transportation over driving, avoid using gas lawn equipment, and check in on neighbors who may be most affected.

ENVIRONMENTAL ACTION

The community can support further investments in trees, green space, and other nature-based solutions in Dearborn to absorb particulate matter and improve air quality. Plant trees and support natural solutions to keep air clean, install green buffer zones between residents and industry, and advocate or organize with groups to advance local clean air policies.

STRUCTURAL ACTION

Pursue long-term policy changes such as holding polluting entities accountable, creating no-idling zones, and updating trucking routes to reduce emissions in residential areas.

BIG WINS SO FAR

$4M

The City of Dearborn won a lawsuit requiring a facility to **invest $4M** in solutions to curb air pollution

18

Dearborn Public Schools deployed **18 electric school busses,** replacing old, diesel busses

41K+

JustAir sent more than **41,500 text alerts** to community subscribers with air quality updates

Next Steps

CONTINUED AIR MONITORING

The city of Dearborn's Public Health Department remains committed to maintaining this air quality monitoring network to build a comprehensive, long-term dataset. This ongoing data collection will enable evidence-based policy decisions, inform targeted public health programs, and help protect the wellbeing of all Dearborn residents. By continuing to monitor air quality across the city, leaders can better understand pollution patterns, respond to emerging concerns, and work toward cleaner air for our community's future.

Find the nearest Dearborn monitor near you and sign up for alerts via this QR code or by visiting JustAir.app. Reach out to info@justair.co with any questions about the network or data.

ACKNOWLEDGEMENTS

This work would not have been possible without strong leadership and innovative vision from the City of Dearborn's Department of Public Health, JustAir's technical platform and generous seed funding from MI Next Cities (NextEnergy) and CIV:LAB.