



City of Worcester Air Quality Monitor Dashboard

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The City of
WORCESTER



Project Goals

- Develop a **web-based dashboard** that displays **live air quality** (Particulate Matter 2.5) readings from all public air quality sensors in the town of Worcester
- **Utilize current air quality monitors** and their data to **better inform Worcester residents about their local air quality**
- Consolidates readings of all air quality monitors within Worcester into **air quality monitors into one place**, regardless of provider
- Create an easily accessible/readable web-based dashboard that **residents of Worcester can use to better understand air quality in their neighborhood**

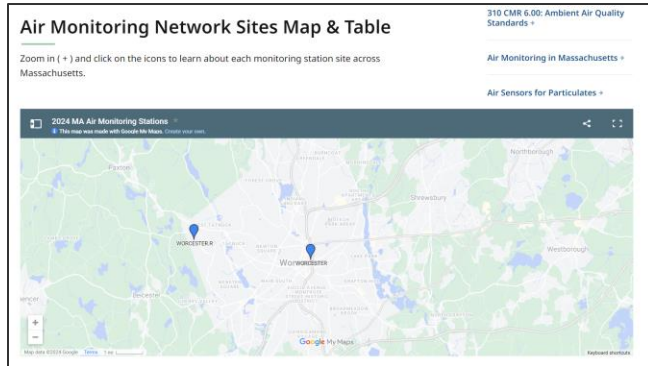


PurpleAir | Real-time Air Quality Monitoring

Active Air Quality Monitors

There are three providers of air quality monitors in Worcester:

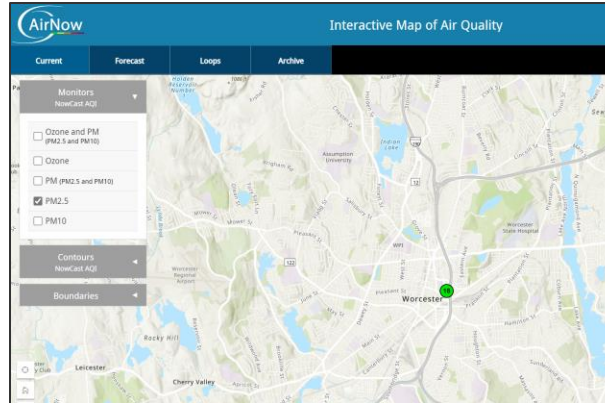
MassDEP



Hosts **1** sensor that measures **PM2.5**

MassDEP Ambient Air Quality Monitoring Network & Annual Plan | Mass.gov

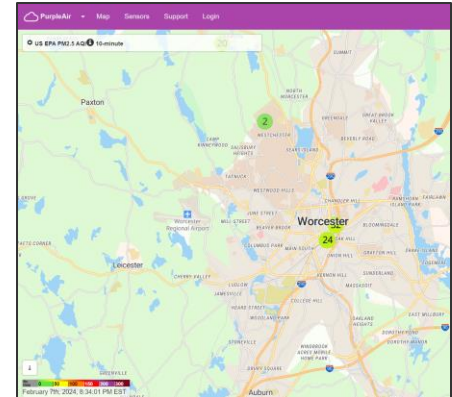
AirNOW



Hosts **1** sensor that measures **PM2.5**

AirNow Interactive Map (epa.gov)

PurpleAir



Hosts **4** sensors that measures **PM2.5**

Real-Time Air Quality Map | PurpleAir

Air Quality Monitors

There are three main providers of publicly-available air quality data in **Massachusetts**:

- **Mass Department of Environmental Protection (MassDEP)** hosts two air quality monitors within the city of Worcester.
- **AirNOW** hosts air quality sensors nation-wide, partnering with the U.S. Environmental Protection Agency, NOAA, the National Parks Service, NASA and state and local air quality agencies to monitor and report air quality.
- **PurpleAir** are global providers of low-cost air quality monitors, reporting air quality via app, and interactive web-map. Low-cost sensors from PurpleAir are available for public purchase, enabling citizens, organizations, school, businesses, and the like, to monitor and report air quality in their area.

Data Available

Sensor Name	Provider	Address	Capability (What does it Measure)	Frequency of Observation	Date of Installation
Worcester – Summer Street	MassDEP	Summer Street	PM2.5, PM10, NOX, SO2, CO	PM2.5 continuous is continuous	01/01/2004
Worcester – Summer Street	AirNOW (same sensor as MassDEP)	Summer Street	PM2.5, PM10, NOX, SO2, CO	PM2.5 continuous is continuous	01/01/2004
Forest Grove	PurpleAir	Tattan Farm Road (Northwest Worcester)	PM2.5	10 Minute Average	To be determined
Batters Eye 2	PurpleAir	Polar Park (Within stadium)	PM2.5	10 Minute Average	To be determined
Batters Eye Polar Park	PurpleAir	Polar Park (Outside of stadium area)	PM2.5	10 Minute Average	To be determined
DEP9A2C	PurpleAir	Summer Street	PM2.5	10 Minute Average	To be determined

Final Product

The final product will consist of a web-based-interactive dashboard that reports air quality from all publicly accessible air quality monitors in Worcester.

The main feature of the website will be an interactive web-map, showing the city of Worcester with each monitor labeled.

There will be panels on either side of the web-map, displaying contextual information about air quality, as well as interactive displays of air quality data (i.e. average monthly readings per monitor)

Interactive Capabilities:

- Clickable monitors that display a pop-up with information about the monitor, and its current AQ reading.
- Once a monitor is clicked, a side panel will display graph of average monthly AQ at that site

Map Design:

- Display sensors on point across Worcester

Features:

- Live AQ Readings –clickable
- (Is there a request to show other meteorological aspects? Temperature, PM10, etc.)
- Reports 1 hour average PM2.5
- Panel displaying graph of average monthly AQ