



## Frequently Asked Questions

For background on the [Healthy Air Network](#) – see this [Fact Sheet](#). Questions below are from the Information Session on February 16, 2023, and subsequent “Open Office” hours. Other questions may be added over time.

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### Which AQ sensors can be connected to the Healthy Air Network?

- We will include sensors that can be calibrated and are found to show “good agreement” with EPA federal reference method (FRM) PM<sub>2.5</sub> instruments. We require that air sensors be connected to the internet such that collected measurements can be called through an application programming interface (API).
- Currently, the Healthy Air Network includes PurpleAir and TELLUS AirU sensors. We have selected these two sensors for the following reasons:
  - They are both relatively low cost (approximately \$315 each with weather protection, cables, and other accessories, with no on-going costs).
  - PurpleAir has two channels that calibrate that are inexpensive to replace (approximately \$30).
  - TELLUS AirU also measures ozone.
- Below is additional information about sensors that were asked about:
  - QuantAQ sensors may be connected. They cost approximately \$1200/sensor and have an ongoing operating cost. They provide data..
  - Clarity sensors cost approximately \$1500/sensor/year (note they are rented vs others that are purchased). They provide access to the data as long as you are paying the rental fee.
- The South Coast Air Quality Management District Here provides an excellent guide on air sensor performance at [AQ Sensor Performance Evaluation Center](#).
- For all sensors, we recommend a locking receptacle for accessing electricity when in public spaces (e.g., so that no one unplugs to charge a cell phone).

### Why should we join the Healthy Air Network if we are already connected to the PurpleAir’s [Real-Time Air Quality Map](#)?

- The PurpleAir network does not guarantee quality assurance. Unless calibrated regularly, we will not know if this is an accurate representation of the community AQ.
- The Healthy Air Network:
  - Calibrates sensors once before installation. As part of this pre-installation calibration, sensors are placed at a MA Department of Environmental Protection (DEP) air monitoring station for 3 to 4 weeks. Air sensor and FRM instrument PM<sub>2.5</sub> mass concentration are compared to develop a calibration factor. We regularly update this calibration factor once the air sensor is installed by comparing reported measurements with nearby sensors. If we identify that measurements collected by your air sensor are drifting over time, we will request the sensor be recalibrated at the DEP air monitoring station.

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- The Healthy Air Network (continued):
  - Pairs AQ data with weather and pollen data.
  - We are currently expanding the Healthy Air Network website to allow users to view historical data. Users will be able to specify a period of interest and view AQ (PM<sub>2.5</sub> mass concentrations and O<sub>3</sub>, if available) over this time.
  - Communities can embed the Healthy Air Network map on their own website.
- If you connect to the Healthy Air Network, you will still be connected to the PurpleAir network.

### **Can we join the Healthy Air Network if our sensors are already installed?**

- You will need to send them in for calibration.
- You do NOT need to take down the power cord. You just need to unscrew the sensor. We will connect the sensor to power on our end.

### **Will the Healthy Air Network include sensors that measure ultrafine particulate matter (below 0.1 µm diameter particles)?**

- At present, no. Monitors that provide high confidence measurements of ultrafine particulate matter are very expensive (\$10,000+). If technology is developed and validated for ultrafine particulate matter measurements and we have necessary resources, we would be open to including them in the future.

### **What criteria are used in placing the air monitors in the community, i.e near industrial sites, high traffic areas, high emitters, and/or other areas with high asthma rates, etc.?**

- Each community placing sensors will make their own decisions. We would encourage you to place them in a variety of locations (that have outdoor electricity and WiFi) – schools, near industry, residential areas, etc., prioritizing areas within your community with high asthma rates and sensitive populations.

### **Subjects to likely be raised in Networking Sessions:**

- As a municipality, there is apprehension about "finding problems". How have others reconciled transparent reporting and public discussion without inciting panic and demanding immediate solutions?
- Others – such as how to secure a monitor
- How to make data meaningful to your local community
- And more! We look forward to your ideas and questions!

**For more information and/or to let us know you'd like to have your sensors connected to the Healthy Air Network, for Western MA, email Sarita Hudson, [shudson@publichealthwm.org](mailto:shudson@publichealthwm.org), for the rest of MA or New England please email [AQ@HRiA.org](mailto:AQ@HRiA.org).**

- If you are interested in having your sensor(s) calibrated, please let us know the type and number of sensors you are planning to send. Again, calibration takes 3 – 4 weeks.