



Commonwealth of Massachusetts

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

Massachusetts Air Sensor Grant Opportunity

Application Guidance and Grant Requirements

October 15, 2025

Overview of this Grant Opportunity

The Massachusetts Department of Environmental Protection (MassDEP) is issuing this grant opportunity for tribal organizations, non-profit organizations, community-based organizations, and municipalities in the Commonwealth to receive up to five (5) PurpleAir sensors, at no cost, to measure levels of fine particulate matter (PM_{2.5}) in outdoor air in their local communities for at least one year. MassDEP has allocated approximately \$128,567 to the Air Sensor Grant Program to purchase PurpleAir sensors for distribution to eligible grant applicants.

MassDEP is offering this Air Sensor Grant Program to enable grant recipients to monitor outdoor air PM_{2.5} levels in their local communities, which can be a significant airborne pollutant that impacts public health. PM_{2.5} is a mixture of solid particles and liquid droplets found in the air and is so small that it can be inhaled deep into the lungs and may even enter a person's bloodstream. Breathing PM_{2.5} in the air can lead to adverse health effects, including aggravated asthma and other respiratory and cardio-pulmonary illnesses.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

Through this grant program, grant recipients will assess outdoor air PM_{2.5} levels to increase understanding of local air pollution by residents, schools, and community groups, and to identify any potential areas with higher pollution levels where mitigation efforts can be directed to protect public health.

PurpleAir Sensors: Description and functions for PM_{2.5} outdoor air monitoring

PurpleAir LLC manufactures and distributes PurpleAir Sensors, which are used to measure PM_{2.5} by a wide variety of governments, organizations, and citizens to monitor both indoor and outdoor air quality. MassDEP will be distributing the PurpleAir Flex sensor model to grant recipients to monitor outdoor air.

All PurpleAir Sensors require access to an electrical source and a 2.4GHz WiFi network for installation. The PurpleAir Flex sensor that MassDEP is offering through this Program can be deployed at residential, municipal, commercial, or industrial locations. Once installed, the PurpleAir Flex sensor measures PM_{2.5} levels in real time, and the data is transmitted to the PurpleAir Map, which displays the air sensor's readings at various average intervals based on user selection (e.g. 2-minute, 10-minute, 1-hour, 24-hour, etc). The PurpleAir Map stores the data where it can be viewed through any smart device.

Please note that you may download historical sensor data directly from PurpleAir's map up to a certain time point depending on the average interval of data selected. You may download data in 2-minute averages going back 3 days from present, 1-hour averages going back 14 days from present, and 24-hour averages going back 1 year from present. If you wish to download historical data outside these parameters, then you can do so by creating an account to use PurpleAir's API (more information [here](#)). New users receive 1 million 'points' to download historical data for free. However, once those points have been spent, PurpleAir LLC charges a fee to buy more 'points' and download more data. The PurpleAir sensor data may also be viewed in real time on the U.S. Environmental Protection Agency's AirNow Fire and Smoke Map together with data from regulatory PM_{2.5} monitors operated by MassDEP and other regulatory agencies (see <https://fire.airnow.gov/>). PurpleAir provides a limited warranty on its air quality sensors for a one (1) year period from the date of shipment to be free from defects in material and workmanship.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

Further details regarding PurpleAir sensors are available through a detailed FAQ on the PurpleAir LLC website at: <https://community.purpleair.com/c/faq/27>.

Eligible Applicants

The Air Sensor Grant Program is open to all tribal organizations, non-profit organizations, community-based organizations, and municipal entities located in the Commonwealth. Applicants must apply for up to five (5) sensors, which must be installed outdoors, at any location within Massachusetts. Applicants are encouraged to partner with residents, schools, and local organizations that work on public health and environmental issues to pick locations for the sensors.

Tribal organization means the applicant must meet the definition of Indian tribe under Section 302(r) of the Clean Air Act: “The term ‘Indian tribe’ means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.”

Non-profit organization, as defined by 950 CMR 106.00, means all corporations organized for a purpose consistent with M.G.L. c. 180, § 4, and not for personal financial gain. The term includes tax-exempt non-profit neighborhood organizations. Labor organizations, institutions of higher education, trade schools, and hospitals are not eligible to apply. Additionally, non-profit organizations described in Section 501(c)(4) of the Internal Revenue Code that engage in lobbying activities as defined in Section 3 of the Lobbying Disclosure Act of 1995 are not eligible to apply.

Community-based organization means the applicant must be an eligible non-profit or not for profit corporation in good standing under state law with authority to enter into binding legal agreements. The community-based organization need not be tax exempt under the Internal Revenue Code but may use documentation of tax-exempt status to demonstrate that it is a non-profit. Community-based organizations must specify the community they represent and provide documentation, such as their charter, mission statement, or other



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

official documentation of the organization; and include a statement demonstrating the effectiveness as a representative of the applicable community.

Estimated Funding

As noted above, MassDEP has allocated approximately \$128,567 in funding in support of this program. All sensor awards are subject to the availability of funds. MassDEP reserves the right to increase or decrease the total amount of funding available through this program. In the event additional funding becomes available, MassDEP further reserves the right to make additional awards to successful grantees, or to make awards to applicants not who did not receive sensors in the initial grant offering.

Application Submission Process:

Applicants must perform the following steps to submit an application for this grant opportunity:

1. Read MassDEP's grant guidance document.
2. Visit the [PurpleAir website](#) to become familiar with the PurpleAir Flex sensor.
3. Read MassDEP's PurpleAir Installation Guidance at <https://www.mass.gov/how-to/apply-for-a-massdep-air-sensor-grant>; as noted above, PurpleAir sensors require electricity and access to 2.4GHz WiFi.
4. Determine how many sensors the applicant will request (this number must be between 1 – 5 air sensors) and identify the geographic area (i.e., outside locations) within Massachusetts where the air sensors will be deployed.
5. Develop a brief project description for how the applicant plans to deploy the sensors (e.g., work with residents in specific neighborhood; work with schools to educate students on air quality; partner with local organizations or companies to work with residents to deploy sensors, etc.).
6. Fill out the grant application in the [Executive Office of Energy & Environmental Affairs Grants Management System](#).
7. MassDEP will review each application for eligibility and completeness and will notify applicants of the outcome of the review.
8. For applications that meet eligibility requirements, MassDEP will issue an Approval Letter and grant agreement for execution by the Grantee.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

9. Grantees will have 30 days to return the signed grant agreement to MassDEP.
10. Note to Applicants: Applications for sensors will be considered on a **FIRST-COME, FIRST-SERVED basis** until program funds for sensors are exhausted.

Grant Terms and Conditions

1. Grantees must execute a grant agreement with MassDEP prior to MassDEP's distribution of the PurpleAir sensors. A copy of the MassDEP grant agreement can be found in the Grant Management Portal.
2. Grantees must agree to work directly with sensor hosts (i.e., residents, schools, community organizations, companies or other entities who will operate the sensors) or with one or more local partner organizations who would work with sensor hosts to deploy the sensors (i.e., locate the equipment in an outside location) within 60 days of receiving the Purple Air Sensors from MassDEP.
3. Grantees must ensure and confirm with MassDEP that the local hosts provide an outside location with electricity and access to WiFi, install and set the PurpleAir Sensor to "public mode" so the sensors appear on the PurpleAir website, and ensure/allow the sensors to operate for at least one year.
4. Each Grantee must notify MassDEP in writing when the PurpleAir sensors have been deployed and appear on the PurpleAir website.

More Information

Applicants interested in MassDEP's Air Sensor Grant opportunity may submit questions in the Info Requests function in the Grants Management Portal.

Frequently Asked Questions (FAQs)

1. **What should I enter under "Total Amount Requested" in the Application Information section of the Grants Management Portal?**
Please enter \$0 in this field. The application form includes a "Sensor count" field where you can request up to 5 sensors.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

2. Who is eligible for the Air Sensor Grant Program?

The Air Sensor Grant Program is open to tribal organizations, non-profits organizations, community organizations, and municipalities located in the Commonwealth of Massachusetts.

Tribal organization means the applicant must meet the definition of Indian tribe under Section 302(r) of the Clean Air Act: “The term ‘Indian tribe’ means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.”

Non-profit organization, as defined by 950 CMR 106.00, means all corporations organized for a purpose consistent with M.G.L. c. 180, § 4, and not for personal financial gain. The term includes tax-exempt non-profit neighborhood organizations. Labor organizations, institutions of higher education, trade schools, and hospitals are not eligible to apply. Additionally, non-profit organizations described in Section 501(c)(4) of the Internal Revenue Code that engage in lobbying activities as defined in Section 3 of the Lobbying Disclosure Act of 1995 are not eligible to apply.

Community-based organization means the applicant must be an eligible non-profit or not for profit corporation in good standing under state law with authority to enter into binding legal agreements. The community-based organization need not be tax exempt under the Internal Revenue Code but may use documentation of tax-exempt status to demonstrate that it is a non-profit. Community-based organizations must specify the community they represent and provide documentation, such as their charter, mission statement, or other official documentation of the organization; and include a statement demonstrating the effectiveness as a representative of the applicable community.

3. Is there a deadline to apply for the Air Sensor Grant Program?

There is no deadline to apply for the Air Sensor Grant Program. MassDEP will accept applications and grant sensors to qualifying applicants on a first-come, first-served basis until all available funding is spent.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

4. Can I apply for sensors if I already received sensors in the 2021 or 2024 Grant Programs?

Eligible applicants who received and used granted sensors in the 2021 or 2024 Grant Programs are eligible to apply for sensors again. However, if you received sensors in 2021 or 2024 and did not deploy the sensors or return the unused sensors to MassDEP, you will not be eligible to receive additional sensors.

5. What are PurpleAir sensors and what do they measure?

PurpleAir sensors are small, low-cost air quality sensors that measure and report levels of fine particulates (PM_{2.5}) in real time. PurpleAir sensors display real-time air quality information on an interactive map (<https://map.purpleair.com>). PurpleAir data is also available in combination with MassDEP regulatory monitoring data on the EPA Fire and Smoke Map (<https://fire.airnow.gov/>).

6. What is PM_{2.5} and how does it affect my health?

PM_{2.5}, also called fine particulate matter, is the term for a mixture of solid particles and liquid droplets found in the air. PM_{2.5} stands for “particulate matter less than or equal to 2.5 microns in size”. PM_{2.5} is so small that it can be inhaled deep into the lungs and may even enter a person’s bloodstream.

Numerous scientific studies have linked breathing PM_{2.5} to adverse health effects, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. People with heart or lung diseases, children, and older adults are the most likely to be affected by PM_{2.5} pollution exposure.

For more information PM_{2.5}, please see the following resources:

- [PM Basics](#)
- [Health and Environmental Effects of Particulate Matter \(PM\)](#)



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

7. Does the grant require sensors to be placed in specific communities or areas?

The Air Sensor Grant Program does not have specific placement requirements for sensors, although MassDEP encourages placement air sensors in communities with vulnerable populations.

8. Where should air sensors be sited?

Air sensors should be sited at outdoor locations within the applicant's target area that have readily available access to electricity and Wi-Fi, as both are required for deployment and operation of the sensors. The ideal locations are 7 to 30 feet above ground level, have at least 180° of unrestricted airflow, and are free of obstructions that may block the sensor inlet on the bottom of the unit. As much as possible, sensors should be placed away from vents, BBQs, smoking areas, and foliage. The sensor can be in direct sunlight; however, partially shaded areas are preferred.

Common sites for air sensors in the previous grant were schools, local businesses, public municipal buildings (ex. library, town hall, police station, board of health, DPW, senior center), and resident homes.

9. What if my proposed outdoor site does not have access to Wi-Fi or a source of electricity?

PurpleAir sensors require a plug-in power source to work and access to a 2.4GHz Wi-Fi network to make the data public, which is a requirement of this grant opportunity. You must know the correct Wi-Fi password for the network to be able to connect, and the network cannot be a captive portal network (e.g., where you must click on a button in a pop-up web page or enter a username and password, like at a public coffee shop, library, or hotel). Additionally, the Wi-Fi range of a PurpleAir is typically about 100 feet but can vary depending on barriers between the router and the sensor (such as thick brick walls). Siting the PurpleAir far away from the router (like on the roof of a building) will often result in a lack of suitable Wi-Fi connection.

If you are not sure that a proposed site will meet the siting requirements, please contact us using the Info Requests function in the Grants Management Portal for questions and assistance. Extension cords or Wi-Fi extenders can help a location



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

meet siting requirements in some cases. Ultimately, if a location does not have suitable Wi-Fi or a power source, the location will not work, and alternative sites should be explored.

10. What is the difference between MassDEP regulatory monitors and PurpleAir sensors?

MassDEP operates a network of regulatory ambient air monitoring equipment across the Commonwealth ([MassDEP Monitoring Network](#)). The instruments used at these sites are approved by EPA as collecting data of the highest quality, follow specific siting criteria, and are continuously maintained and calibrated by MassDEP staff to ensure high quality, defensible data. This data can be used to compare to health-protective National Ambient Air Monitoring Standards ([EPA NAAQS](#)) and determine compliance with the Clean Air Act.

PurpleAir sensors are consumer-grade air sensors and are not subject to the same siting requirements or quality control procedures as regulatory instruments. They also use different technology to measure PM_{2.5} and tend to read higher levels of pollution than a regulatory instrument would. Research from the United States Environmental Protection Agency (US EPA) suggest that PurpleAir sensors overestimate PM_{2.5} by ~60% and reported accurate Air Quality Index (AQI) values 75% of the time ([US EPA](#)).

Data collected from PurpleAir sensors and other non-regulatory air sensors are excellent sources of information for making daily decisions; however, they are not used for regulatory, compliance, or enforcement purposes and are intended to be informational only.

11. Is there a way to make PurpleAir data more comparable to regulatory data?

Yes. Many groups have developed mathematical formulas to ‘correct’ PurpleAir data to make sensor data more comparable to regulatory instruments. One of the most common is the US EPA correction factor. You can view ‘corrected’ PurpleAir data from the PurpleAir map (<https://map.purpleair.com>) by adjusting the data layers to apply the conversion. Additionally, EPA’s Fire and Smoke Map



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

(<https://fire.airnow.gov>) automatically applies this correction factor when displaying sensor data.

Please note, corrected sensor data is still not able to be used for regulatory or enforcement purposes and is for informational purposes only.

12. How do I see data from PurpleAir sensors?

Once sensors are registered, connected to Wi-Fi, and installed, data will display on the PurpleAir map (<http://map.purpleair.com>). PurpleAir data is also displayed on EPA's Fire and Smoke map, along with data from MassDEP permanent regulatory monitoring stations (<https://fire.airnow.gov>). Please note, the Fire and Smoke map automatically applies a correction factor developed by US EPA to the data before displaying it.

13. Can I download data from PurpleAir sensors?

Yes. You can download data from PurpleAir sensors in a few ways.

1. You can download data directly from PurpleAir's map by loading a graph of data, selecting the sandwich menu, and downloading a CSV or XLS file with numerical data. You may download data from multiple sensors this way.

Ensure the correct averaging interval of interest (real time, 10 minute, 1-hour, etc.) and parameter of interest (raw PM_{2.5} concentrations, Air Quality Index (AQI) values, etc.) are selected before downloading. See the following resources on navigating the PurpleAir map and downloading data from the map:

- a. [Download Map Graph Data](#)
- b. [How to use the Map Graph](#)
- c. [PurpleAir Real-Time Map Guide](#)

2. You can use the PurpleAir Data Download Tool user interface ([Data Download Tool](#)) to download historical data from sensors. You will need an API key to use this feature. You may sign up for a PurpleAir develop account to get an API key using any Gmail account at <https://develop.purpleair.com>.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114
Phone: 617-292-5500

3. You can use PurpleAir's API directly. For more information, please visit <https://community.purpleair.com/t/using-the-api-dashboard/3981>.

Please note, currently you are only able to download raw PM_{2.5} concentration data from the PurpleAir API; you cannot download 'corrected' data or AQI values.

Please visit <https://community.purpleair.com/t/how-do-i-download-sensor-data/4650> for PurpleAir's guide on downloading sensor data.

14. What are the best uses for PurpleAir sensors?

Air sensors can be used to:

- Work with residents, schools, businesses, and community groups to assess PM_{2.5} levels in outdoor air
- Increase public understanding of local air quality conditions and their effects
- Identify areas where pollution levels might be higher and mitigation efforts can be directed to protect public health
- Obtain hyperlocal air quality information, especially during smoke events, wildfires, or local pollution events where conditions can change rapidly
- Explore air quality trends over time and how conditions may vary at different times or the day (ex. morning vs. night, rush hour) or times of year (ex. summer vs winter)
- Help inform day-to-day personal decisions for those with pre-existing health conditions (ex. is it a good day to go for a walk or exercise outside? Should I leave my windows open or closed?)

15. My PurpleAir is not working or is malfunctioning. What should I do?

PurpleAir has many resources for troubleshooting sensor issues:

- [Sensor Wi-Fi and Registration Guide](#)
- [Sensor Maintenance/Troubleshooting Guide](#)
- [BME Troubleshooting \(Temperature/Humidity Readings\)](#)

If you are unable to resolve the issue with the above resources, please contact us for assistance using the Info Requests function in the Grants Management Portal. MassDEP will repair or replace malfunctioning sensors within one year.



Commonwealth of Massachusetts
Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston, MA 02114

Phone: 617-292-5500

16. Is MassDEP monitoring or managing the data from PurpleAir sensors?

No, MassDEP will not be monitoring the operational status or the data from PurpleAir sensors. It is the responsibility of the recipient to run and maintain the sensors for one year, and to notify MassDEP of malfunctions in sensor operation if they would like replacements. Any desired data analysis from granted sensors is the responsibility of the recipient.

17. Are there resources available for using air sensors for community projects?

Yes. EPA's [Enhanced Air Sensor Guidebook](#) is one of the most comprehensive resources available for using air sensors. The guidebook is just one resource of many available in EPA's [Air Sensor Toolbox](#).

18. Will MassDEP help grant recipients with sensor projects?

Yes. While deployment and management of granted sensors is ultimately the responsibility of the recipient, MassDEP is happy to provide virtual or in-person assistance to all sensor grant recipients. MassDEP's goal is to get 100% of granted sensors reporting useful air quality data to the public. Assistance can be requested by contacting us using the Info Requests function in the Grants Management Portal.