



Department of Environmental Protection

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Massachusetts 2024 Air Monitoring Network Plan Response to Comments

September 12, 2024

MassDEP operates a network of 24 ambient air quality monitoring stations at locations across the Commonwealth as part of a comprehensive program to provide information about air quality to the public and to determine compliance with National Ambient Air Quality Standards (NAAQS). Each year, MassDEP is required to submit to the U.S. Environmental Protection Agency (EPA) an Air Monitoring Network Plan in accordance with Title 40 CFR Part 58.10. On May 9, 2024, MassDEP published a draft 2024 Network Plan for a 30-day public comment period that closed on June 10, 2024. At the request of the Conservation Law Foundation (CLF), MassDEP extended the public comment deadline until June 20, 2024. MassDEP received comments on the draft Plan from EPA and CLF. MassDEP has summarized and responded to the comments below.

- 1. Comment (EPA):** Page 7, Ozone (O₃) Network – The first sentence states there are 17 ozone monitoring stations, but the table following lists 18. Please clarify in the first sentence that there are 17 regulatory ozone monitoring stations and one nonregulatory ozone monitoring station. We appreciate the addition of language regarding the Chelmsford Manning Road Near Road site not meeting siting criteria for ozone in the initial paragraph. The footnote indicating it is nonregulatory is helpful, as well.

Response: MassDEP has clarified that there are 17 regulatory ozone monitors, 16 operated by MassDEP and one operated by the Wampanoag Tribe, and that MassDEP also operates one non-regulatory ozone monitor.

- 2. Comment (EPA):** Page 13, PM₁₀ continuous – We acknowledge that all three sites monitoring for particulate matter with diameter less than 10 micrometers (PM₁₀) have installed continuous instrumentation. EPA only requires collocated sampling for manual PM₁₀ samplers. See 40 CFR part 58, section 3.3.4 Collocated Quality Control Sampling Procedures for Manual PM₁₀. This presents MassDEP with a cost savings opportunity by discontinuing the collocated PM₁₀ sampler at the Boston - Harrison Ave site.

Response: MassDEP will continue to run the PM₁₀ samplers as a useful quality assurance check and does not currently have plans to discontinue the collocated PM₁₀ sampler at the Boston - Harrison Ave site. MassDEP will continue to consider cost saving strategies in the PM network.

3. **Comment (EPA):** Page 14, PM_{2.5} Network – On January 15, 2013, EPA revised the National Ambient Air Quality Standard (NAAQS) for fine particulate matter (PM_{2.5}). In that rule, EPA also established that all continuous PM_{2.5} Federal Equivalent Method (FEM) monitors operating for more than 24 months should be used for comparison to the NAAQS unless a state specifically requests that the data be excluded under 40 CFR 58.11(e) and EPA approves that request. All MassDEP’s instruments have an FEM designation. We are pleased that MassDEP will use data from all its continuous FEM monitors for comparison to the NAAQS.

Response: MassDEP appreciates EPA’s comment and will continue to use data from all its continuous FEM monitors for comparison to the NAAQS.

4. **Comment (EPA):** Page 17, Photochemical Assessment Monitoring Stations (PAMS) – Relative to enhanced ozone related monitoring activities, we formally approved your PAMS implementation plan for your Lynn site on May 9, 2018; and on August 15, 2019, we approved your Enhanced Monitoring Plan (EMP).

Response: MassDEP appreciates EPA’s approval of its enhanced ozone monitoring plan.

5. **Comment (EPA):** Page 19, Enhanced Monitoring in Environmental Justice Communities – We acknowledge and support your effort described under “Enhanced Monitoring in Environmental Justice Communities.” EPA requests that MassDEP continue to communicate the progress of establishing additional sites and ensure that these sites meet siting criteria based on sampling objectives.

Response: MassDEP will continue to communicate the progress of establishing additional sites and ensure that these sites meet siting criteria based on sampling objectives.

6. **Comment (EPA):** Page 20, Summary of Recent and Proposed Network Changes – We note and acknowledge the following as your “Summary of Recent and Proposed Network Changes.” The following are the recent and planned changes to the air monitoring network reported in the summary.

- Due to a redevelopment project affecting the location of the Haverhill monitoring station (25-009-5005), in March 2024 MassDEP moved the station to the Haverhill High School (25-009-5006) at 137 Monument Street, approximately one mile north of the previous location. The new location will include the same measurements as the former location (ozone, PM_{2.5}, meteorological parameters).

- MassDEP plans to use Inflation Reduction Act (IRA) funds to add a PM_{2.5} monitor at the Uxbridge monitoring station (25-027-0024) to satisfy new EPA PM_{2.5} monitoring network design criteria that requires an additional PM_{2.5} monitor in the Worcester MSA.
- MassDEP is in the process of establishing two additional monitoring stations with PM_{2.5} and black carbon monitors in EJ populations, one in or near Saugus and one in the Framingham area.
- MassDEP is in the process of adding ultrafine particle (UFP) monitors at its monitoring stations in Boston-Von Hillern Street, Chelmsford, Boston-Chinatown, and Springfield.

Response: MassDEP appreciates EPA’s comments and acknowledgements.

7. **Comment** (Conservation Law Foundation (CLF)): We recommend that the PM_{2.5} and black carbon monitor planned for “in or near Saugus” be placed near the Saugus/Lynn/Revere border. We also recommend Lawrence receive the PM_{2.5} and black carbon monitor slated for Framingham. Lawrence is a community with significant EJ populations: 100% of Lawrence is mapped for EJ population criteria, and 79.9% of the city’s residents speak a language other than English at home. Lawrence experiences significant tailpipe pollution due to Interstate 495 and Massachusetts Route 28. While Framingham is an EJ community in need of monitoring, we recommend that Lawrence receive priority for this specific opportunity. Framingham should be considered among additional EJ communities that ultimately benefit from the Multi-Pollutant Sensor Pilot Program.

Response: As noted in the draft Network Plan, MassDEP already has started the process of siting new PM_{2.5} and black carbon monitoring stations in Saugus and Framingham and is working with both communities to identify suitable locations for the monitoring stations. MassDEP expects to receive additional EPA air monitoring grant funding in 2025 and will consider a monitoring station in Lawrence.

8. **Comment** (CLF): There is significant need for air monitoring in Massachusetts’ EJ communities. Vehicular air pollution has major negative impacts on the public’s health. UFP matter leads to heart disease, stroke, diabetes, lung cancer, childhood asthma, and childhood autism, especially in areas near congested roadways. Dangerous air pollution, especially from UFP, NO_x, and black carbon persists today in many parts of the Commonwealth. EJ communities like Chelsea, Roxbury, Brockton, Lawrence, and Springfield, among other locations, are suffering from decades of air pollution. MassDEP should also add additional monitors in these communities, and other EJ communities across the Commonwealth, to measure particulate matter, including PM_{2.5}, PM₁₀, UFP, volatile organic compound (“VOC”), O₃, CO, SO₂, NO_x, and black carbon.

Response: MassDEP is committed to expanding air quality monitoring in EJ populations. As noted in the Network Plan, MassDEP is continuing efforts to establish additional monitoring stations in communities with EJ populations and is supporting the use of sensors to supplement and broaden air

monitoring coverage, especially in EJ populations. MassDEP does not have the resources to add additional monitors in Chelsea, Roxbury, Brockton, Lawrence, Springfield and other communities at this time. However, MassDEP expects to receive additional EPA grant funding in 2025 and will consider additional monitoring instruments and locations in future Network Plans.

9. **Comment (CLF):** MassDEP has announced a Multi-Pollutant Sensor Pilot Program of 40 black carbon sensors and fifty multi-pollutant sensors across 2-3 EJ communities to track high levels of pollutants from truck traffic and other transportation pollutants. We recommend that DEP expand the initial communities it will work with and provide clear structure as to the program's timeline and when DEP will move beyond the initial communities. We recommend DEP prioritize Springfield, New Bedford, and Brockton, with EJ populations of 100%, 78.9%, and 100%, respectively. New Bedford, Amherst, Framingham, and Randolph are all also communities with significant EJ populations, ranging from approximately 79 – 100% of the population living in EJ block groups. Rural communities like Dudley and Becket, both of which have EJ populations, should also receive consideration in this program.

Response: MassDEP is committed to deploying new advanced air sensors in EJ populations. MassDEP plans to initially work with two or three communities with EJ populations on a pilot basis to gain experience with the new sensors. Through the pilot program MassDEP expects to gain insight on the capabilities of sensors for achieving community monitoring goals, including experience with siting, data acquisition, troubleshooting, calibrating, and maintaining the sensors. Once experience is gained using the sensors, MassDEP will be in a better position to expand the use of these sensors and will be able to deploy the sensors in different communities over time.

10. **Comment (CLF):** We are pleased that this Network Plan shows progress on placing the four UFP monitors funded by the Inflation Reduction Act (“IRA”). We encourage MassDEP to add additional monitors in similarly congested areas and operate them such that they monitor for all pollutant parameters associated with transportation pollution. This includes PM_{2.5}, PM₁₀, VOCs, O₃, NO_x, CO, SO₂, black carbon, and UFPs. While MassDEP collects ambient air quality data to provide information to the public, it only does so for criteria pollutants for which the EPA has designated National Ambient Air Quality Standards, including sulfur dioxide, ozone, carbon monoxide, nitrogen dioxide, lead, PM₁₀, and PM_{2.5}. This data misses other pollutants, such as metals from incinerator ash, that are emitted onto already burdened communities. MassDEP should deploy UFP monitoring and expand NO_x and black carbon monitoring. The CAFEH research team confirmed that UFP presents a significant public health concern, especially for people living, working, and going to school within 500 feet of a congested roadway, many of which are environmental justice populations. MassDEP should deploy UFP monitoring and expand NO_x and black carbon monitoring. The CAFEH research team confirmed that UFP presents a significant public health concern, especially for people living, working, and going to school within 500 feet of a congested roadway, many of which are environmental justice populations. MassDEP should work to secure federal and/or state funding for new monitoring stations for UFPs. MassDEP should also prioritize adding the capacity to test for all pollutants associated with nearby industrial emissions and tailpipe pollution, including PM₁₀, VOCs, O₃, NO_x, CO, SO₂, black

carbon, and UFPs, to all air quality monitoring stations in the network that are proximate to EJ populations.

Response: MassDEP has received EPA grant funding to add four UFP monitors at existing monitoring stations near high-traffic roadways, but has not received funding to add additional monitors at this time. MassDEP is expecting to receive additional EPA grant funding in 2025 and will consider additional monitoring in EJ population, including high-traffic locations, in future Network Plans.

11. Comment (CLF): MassDEP should continue programs like the Air Sensor Grant Program. In response to CLF's comment on the 2023 draft Network Plan, MassDEP stated that "MassDEP is planning a second Air Sensor Grant Program in 2024, potentially adding up to 300 PM sensors to the existing sensor network." We are hopeful that the recently-closed application period will yield such high results. As stated above, PM_{2.5} will be particularly important for continuous monitoring as such pollution remains an issue for non-combustion vehicles. For ensuring transparency and enabling knowledge of the network, we ask MassDEP to publish a publicly accessible list of the awardees for this grant as well as the progress made on deploying sensors.

Response: MassDEP recently announced the award of 213 PM_{2.5} sensors to 27 grantees as part of the second Air Sensor Grant Program. MassDEP has published the list of grantees on its website (<https://www.mass.gov/how-to/apply-for-a-massdep-air-sensor-grant>) and is currently working with the grantees to deploy the sensors.

12. Comment (CLF): MassDEP should correct any inoperable monitors and sensors. MassDEP should devise an annual schedule for performing quality assessment checks on all operating monitors. MassDEP should publish the results of these checks in its Annual Air Quality Reports. This report should include any plans for addressing substandard monitor performance. In the Massachusetts 2022 Air Quality Report, the section entitled "Quality Assurance and Quality Control" provides a general overview of standard procedures for quality assurance but does not include any data. MassDEP should include up-to-date information in the same section of next year's report.

Response: MassDEP implements a rigorous program of regular maintenance by trained staff for all of its monitoring stations according to a Quality Assurance Project Plan (QAPP) approved by EPA, including regular equipment audits in accordance with EPA and manufacturer specifications. Due to its intense maintenance of its monitoring stations there is very little down time for the stations. MassDEP also works closely with communities that have received PM sensors from MassDEP to ensure they are operating correctly. Because these sensors are relatively low cost, they are not as robust and durable as regulatory monitors, and they have a limited life expectancy.

13. Comment (CLF): MassDEP should coordinate with MassDOT to plan for future monitors based on plans for future changes to infrastructure. As MassDOT evolves and decarbonizes the transportation sector to meet our climate targets, MassDEP should work closely with MassDOT through all available channels to plan for locations of future monitor siting. Although combustion vehicle use will likely

decrease in the future, combustion vehicles will continue to be used for the foreseeable future, and electric vehicles still place communities at risk for exposure to particulate matter of various kinds. Since many of MassDOT's future plans will inevitably revolve around vehicles driving through our network—and even further siting infrastructure to support electrification—vigilant monitoring of air in EJ communities will be essential for ending the generational cycle of EJ communities suffering from pollution as the Commonwealth strives to transition away from fossil fuels.

Response: MassDEP takes into account high-traffic areas when siting monitoring stations and air sensors. For example, MassDEP has two EPA-designate near-road monitors and has sited several monitoring stations in urban areas that generally have higher traffic levels. As MassDOT develops plans future transportation infrastructure MassDEP will take this plan into consideration in the design of its monitoring network and sensor programs.

- 14. Comment (CLF):** MassDEP should increase its community engagement, including by engaging with the Environmental Justice Advisory Council. We urge MassDEP to coordinate with stakeholders in communities that currently have monitoring stations or will soon. These communities deserve MassDEP's continued communication and clarity with the processes that are designed to protect their air. The process of submitting formal commentary is an important aspect of ongoing agency work. However, MassDEP should frequently engage directly with these communities to remove the barrier of the formal commentary process that many people cannot engage in due to a lack of awareness, lack of technical resources, or language differences. We recommend that MassDEP engage with the Environmental Justice Advisory Council established pursuant to An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy and Executive Order 552 to determine appropriate monitoring locations other than our recommendations. This includes mobile and stationary monitors that are located [in] communities disproportionately burdened by transportation infrastructure. We urge MassDEP to convene an air quality technical advisory committee comprised of air monitoring experts and environmental justice community experts to identify additional air monitoring locations for UFP. We recommend that the 2025 air monitoring plan include baseline air quality conditions and suggestions for reducing air pollution in pollution corridors and hotspots by 2030.

Response: MassDEP air monitoring staff spend considerable time working with communities to provide information on air quality and to implement air sensor programs and has added new staff positions devoted to community monitoring, especially in environmental justice populations. MassDEP also works with its Director of Environmental Justice to ensure all stakeholders are aware of and have the opportunity to be engaged in MassDEP's air monitoring efforts, and will continue to seek input from EJ advocates including the Environmental Justice Advisory Council on its air quality monitoring plans and will continue to build on our community engagement efforts. Communities can continue to direct questions about air monitoring, air sensors, and monitoring data to Allison Langone at allison.m.langone@mass.gov.