



Department of Environmental Protection

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Massachusetts 2022 Air Monitoring Network Plan Response to Comments October 27, 2022

MassDEP operates a network of 23 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 July 5, 2022, MassDEP published a draft 2022 Network Plan for a 30-day public comment period. MassDEP received comments on the draft Plan from EPA and from citizens and local organizations. MassDEP has summarized and responded to these comments below.

EPA Comments

- 1. Comment:** Page 7, Ozone (O₃) Network – 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 also helpful as well.

Response: MassDEP will continue to clarify siting criteria for this monitor as long as it is in operation.

- 2. Comment:** Page 14. PM_{2.5} continuous – We acknowledge MassDEP plans to establish a new continuous PM_{2.5} monitoring station in the Chinatown neighborhood of Boston in 2023.

Response: MassDEP appreciates EPA's support of this project.

- 3. Comment:** Page 15. PM_{2.5} continuous – Per the collocated requirements listed in 40 CFR Part 58, each unique method is required to be collocated with at least FRM. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-58> Based on the PM_{2.5} collocation summary table, the only method that is collocated is the T640. Because there are BAMs currently in your network, an FRM needs to be placed at one of the five sites listed to

be in compliance with the collocation requirements. Please keep EPA posted on which site will be the collocated BAM site.

Response: MassDEP has added a BAM in place of a T640 at the Springfield site (25-013-0018). The Springfield site also has a FRM monitor so that now there is FRM collocation of the BAM method and MassDEP's PM_{2.5} network complies with collocation requirements listed in 40 CFR Part 58. MassDEP updated the collocation summary table (page 15) and the Springfield site description in Attachment 1 (page 30) of the 2022 Network Plan with these changes. MassDEP will operate a BAM at Springfield until all other BAMs have been replaced or discontinued.

- 4. Comment:** PM_{2.5} Network – On January 15, 2013, EPA revised the PM_{2.5} standard. In that rule, EPA also established that all continuous PM_{2.5} 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 of MassDEP's BAMs and a T640s have a Federal Equivalent Method (FEM) designation. We are pleased that MassDEP will use data from all its continuous FEM monitors for comparison to the NAAQS.

Response: MassDEP will continue to use data from all continuous FEM PM_{2.5} monitors for comparison with the NAAQS.

- 5. Comment:** 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). Regarding your EMP, we have cut and pasted what you proposed and we approved:

EPA's 2015 Ozone NAAQS regulations require states with ozone non-attainment and/or that are in the Ozone Transport Region (such as Massachusetts) to develop enhanced monitoring plans (EMPs) to help determine the distribution of ozone in the state and region. MassDEP has participated in a collaborative planning effort with EPA and other Ozone Transport Commission (OTC) states on the development of EMPs. MassDEP believes enhancements to the monitoring network that it has taken adequately meet the new requirements. This includes maintaining ozone monitoring at the summit of Blue Hill in Milton that measures higher elevation ozone (which had previously been scheduled to close) and expanding ozone monitoring in Southeastern Massachusetts to address higher ozone values that occur along the South Coast. This has included adding ozone monitoring at the Fall River station (25-005-1004), replacing the Fairhaven station (25-005-1006), and establishing a new Brockton monitoring station (25-023-0005). MassDEP also is planning to add additional upper air measurements.

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

- 6. Comment:** On page 19 we acknowledge and support your effort described under "Enhanced Monitoring in Environmental Justice Communities."

Response: MassDEP appreciates EPA’s support of MassDEP’s enhanced air monitoring in environmental justice communities.

7. Comment: Page 20. We note and acknowledge the following as your “**Summary of Recent and Proposed Network Changes.**”

MassDEP has not made any recent changes to the monitoring network (see MassDEP’s 2021 Network Plan for changes made to the monitoring network in 2021). MassDEP plans to make the following changes to the monitoring network:

- MassDEP plans to establish a new PM_{2.5} monitoring station in the Chinatown neighborhood of Boston.
- If MassDEP is awarded additional funds through EPA’s Enhanced Air Quality Monitoring for Communities grant, MassDEP plans to add ultrafine particle (UFP) monitors at its monitoring stations in Chelmsford, Boston-Von Hillern Street, Springfield, and Boston-Chinatown (planned), and add black carbon (BC) monitors at its monitoring stations in Chelsea and Boston-Chinatown (planned).

Response: MassDEP appreciates EPA’s support of our monitoring network efforts.

Other Comments

8. Comment (Berkshire Environmental Action Team): Berkshire Environmental Action Team commends your efforts to monitor the air quality of Massachusetts. We would like to note that because Pittsfield Generating runs infrequently and the incinerator has closed, the largest source of air pollution in Pittsfield is now vehicular traffic. We believe the current air quality monitor in Pittsfield would not effectively capture air pollution from heavy traffic, including diesel buses and delivery vehicles, and that the current monitoring facility should be moved to capture these emissions. The Pittsfield monitoring facility should be in a highly trafficked residential EJ neighborhood, for example on Tyler Street which is approximately one mile north of the current monitoring location. Additionally, we believe that there should be air quality monitoring in Adams, near the Specialty Minerals limestone mining facility, in order to monitor particulate matter pollution.

Response: MassDEP’s monitoring network is designed primarily to determine statewide compliance with EPA’s National Ambient Air Quality Standards (NAAQS) for criteria pollutants and is not designed to monitor individual sources of pollution since there are thousands of individual sources in the state. The data generated by the existing air monitoring stations in Pittsfield and North Adams are considered representative of ambient conditions in the surrounding areas. These monitoring stations show that fine particulate matter (PM_{2.5}) and ozone (O₃) levels are well below the NAAQS.

MassDEP supports the growing interest in localized air monitoring to more precisely answer the question “what is the air quality in my neighborhood or on my street?” and “how are

emissions from this facility affecting local air quality?” The use of smaller air sensors can be helpful in answering these questions because they are portable, relatively inexpensive, easy to use, and easy to deploy in a neighborhood. As noted in the Network Plan, MassDEP has distributed over 200 fine particulate matter sensors to more than 30 municipalities through a new grant program launched in 2021. MassDEP plans to continue to support efforts to place more air sensors across the Commonwealth, especially in environmental justice populations.

- 9. Comment** (Conservation Law Foundation): CLF is particularly concerned about the air quality in neighborhoods of color and low-income communities, where residents face disproportionate exposure to harmful air pollutants and, as a result, suffer higher rates of asthma and other respiratory and cardiovascular diseases.

CLF recommends that MassDEP modify the Massachusetts 2022 draft Air Monitoring Network Plan (“Network Plan”) to add additional monitors to measure particulate matter (PM), including PM_{2.5}, PM₁₀, ultrafine particles (“UFP”), volatile organic compound (“VOC”), O₃, CO, SO₂, nitrogen oxides (“NO_x”), and black carbon, to be sited in environmental justice (“EJ”) populations facing disproportionate levels of air pollution and the resulting negative health effects.

CLF recommends that UFP matter monitoring capabilities be added to all existing and planned monitoring stations, and at least to monitoring stations near major roadways, such as Boston - Chinatown, Boston – Roxbury, Chelsea, Lynn, Springfield. Additionally, while the Commonwealth’s air monitoring network includes 17 air monitors measuring continuous PM_{2.5} and six federal reference PM_{2.5} air monitors, and 7 monitors for black carbon, there are often few near roadways, ports, or airports to identify pollution hotspots. CLF acknowledges and thanks MassDEP for applied to the U.S. Environmental Protection Agency for adding UFP monitors and black carbon monitors. CLF recommends expanding UFP and black carbon monitoring at locations near major roadways, major ports, and all commercial airports, including Worcester.

CLF is pleased that, since the issuance of the 2020 network plan, MassDEP has added PM_{2.5} monitoring capabilities to stations located in Boston’s Kenmore neighborhood and in Chelsea; CLF further encourages MassDEP to install a multi-parameter monitoring station in Boston’s Chinatown. The new monitoring stations in Chinatown and downtown should monitor for all pollutant parameters associated with tailpipe pollution – including PM_{2.5}, PM₁₀, VOCs, O₃, NO_x, CO, SO₂, black carbon, and UFPs. MassDEP should ensure that the new monitoring station has the capacity to meet all future monitoring needs, as it will be more challenging and costlier to install monitoring capabilities for additional parameters after the stations are built.

CLF recommends that MassDEP add a stationary air monitoring station in East Boston, Everett and Revere to its air quality monitoring network. The new station should have the capacity to test for all pollutants associated with nearby industrial emissions and exhaust pollution, including PM_{2.5}, PM₁₀, VOCs, O₃, NO_x, CO, SO₂, black carbon, and UFPs.

CLF Recommends that MassDEP install at Least Thirty Mobile PM Air Quality Monitors Across the Commonwealth. CLF encourages MassDEP to dramatically expand its air quality

monitoring capacity by adding a number of mobile PM air quality monitors to its network. Given their small size, ease of siting, and low cost, MassDEP could quickly deploy multiple mobile monitors to immediately increase its PM_{2.5} and UFP data. Mobile air quality monitors, such as those available from PurpleAir, can be purchased for less than \$300 and installed on the side of any building, so long as there is internet access and electricity. Installing many mobile monitors would provide MassDEP with more granular air pollution data for particular neighborhoods leading to better, local solutions for specific communities' air quality problems.

Worcester, Springfield, and Boston are ranked eleventh, twelfth, and eighteenth, respectively, by the Asthma and Allergy Foundation in 2021 as the top places that are most challenging to live with asthma. Suffolk County, the county which encompasses Boston, Chelsea, Revere, and Winthrop, is the Massachusetts county with the highest average PM_{2.5} concentrations, with average concentrations 88 percent above the state average. CLF encourages MassDEP to focus on ensuring comprehensive air quality monitoring coverage across the Commonwealth by installing at least thirty mobile monitors, beyond those already dedicated to Chelsea. These mobile monitors will provide both a comprehensive picture of air quality across the Commonwealth and a focused view in EJ populations suffering higher rates of air pollution-related negative health effects, including in Chinatown, East Boston, Everett, and Revere.

CLF also recommends that MassDEP install mobile air quality monitors in Worcester and Springfield. Springfield suffers from extremely high rates of asthma prevalence compared with the rest of the state – the Asthma and Allergy Foundation of America ranked eleventh Springfield in its list of U.S. “2021 Asthma Capitals” due to its high rates of overall asthma prevalence, which is an improvement from 2019 when the city ranked first in the nation (17.35 percent compared with a statewide average of 11.5 percent) and number of emergency room visits for asthma. Highway I-91 runs through Springfield and contributes greatly to the City's vehicle emissions levels, which are 43 percent higher than the state average. Such high vehicle emissions result in high levels of PM_{2.5}. Springfield is an EJ population: 95.8 percent of the population resides in EJ populations. Given Springfield's high air pollution-related health burden, MassDEP should establish a more comprehensive network of mobile air quality monitors to better understand the sources and patterns of its air pollution problems.

Finally, CLF recommends 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 other appropriate locations for future mobile and permanent air monitoring locations, including locations that are 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 determine additional air monitoring locations for UFP. We recommend that the 2023 air monitoring plan include baseline air quality conditions and suggestions for reducing air pollution in pollution corridors and hotspots by 2030.

Response: MassDEP is concerned about disparate air quality impacts on environmental justice populations. As noted in the Network Plan, MassDEP has focused recent efforts to establish additional monitoring stations in communities with environmental justice populations and is supporting the use of air sensors to supplement and broaden air monitoring coverage, including

distributing 248 PM_{2.5} air sensors to 33 municipalities. MassDEP established a monitoring station in Chelsea in 2021 and will establish a monitoring station in the Chinatown neighborhood of Boston in 2023. MassDEP recently received from EPA American Rescue Plan direct grant funding that will enable the establishment of two additional monitoring stations in environmental justice communities to monitor PM_{2.5} and black carbon. MassDEP also has applied for additional funding through EPA's Enhanced Air Quality Monitoring for Communities grant, and if awarded MassDEP plans to add ultrafine particle (UFP) monitors at its monitoring stations in Chelmsford, Boston-Von Hillern Street, Springfield, and Boston-Chinatown (planned site), and add black carbon monitors at its monitoring stations in Chelsea and Boston-Chinatown (planned site). However, due to limited resources, MassDEP does not have the resources to establish full-scale monitoring stations in all environmental justice communities but will continue to seek additional funding and support the use of air sensors to "fill in the gaps" between regulatory monitoring stations.

MassDEP plans to seek input from environmental justice advocates as it considers where to site the additional monitoring stations for which funding has been secured and the best way to expand the use of air sensors and will coordinate with MassDEP's Environmental Justice Director regarding an opportunity to seek input from the new Environmental Justice Advisory Council and other stakeholders.

MassDEP also is co-leading a workgroup of states facilitated by the Georgetown Climate Center as part of the Transportation and Climate Initiative (TCI) to discuss community-based air monitoring. The workgroup is seeking to establish a new "community of practice" to serve as a regional forum for sharing information and building capacity within agencies and communities to develop and maintain community-based air quality monitoring programs to improve monitoring of air pollution emitted from transportation and other sources in underserved and overburdened communities and environmental justice populations.