



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

DRAFT
Certification of Adequacy of the
Massachusetts State Implementation Plan
with Clean Air Act Section 110(a)(2)(D)(i)
Interstate Air Pollution Transport Requirements for the
2008 Ozone National Ambient Air Quality Standards

December 14, 2017

Background

This is the Massachusetts Department of Environmental Protection's (MassDEP) Certification that the Massachusetts State Implementation Plan (SIP) adequately meets the basic (or "infrastructure") requirements of 7401 U.S.C. §2110(a)(1) and (2) of the federal Clean Air Act to address the interstate transport of air pollution with regard to the 2008 Ozone National Ambient Air Quality Standards (NAAQS).

Pursuant to Sections 110(a)(1) and 110(a)(2) of the CAA, each State is required to submit a plan to provide for the implementation, maintenance, and enforcement of a newly promulgated or revised NAAQS within 3 years after its promulgation. Section 110(a)(1) provides the procedural and timing requirements for SIPs. Section 110(a)(2) lists the basic elements that all SIPs must contain including emissions inventories, ambient air quality monitoring and data systems, programs for enforcement of control measures, and adequate resources to implement the plan. This SIP is commonly referred to as an "Infrastructure" SIP because its purpose is to ensure that a state's SIP contains the necessary structural elements needed to implement a new or revised NAAQS. Section 110(a)(2)(D)(i) specifically requires that the Infrastructure SIP prohibit emissions that will significantly contribute to nonattainment, or interfere with maintenance, of a NAAQS in downwind states. This requirement is commonly referred to as the "Good Neighbor" provision.

If a State determines that its existing SIP is adequate, then the State's SIP submittal may be a certification that the existing SIP contains provisions addressing all requirements of the section 110(a)(2) infrastructure elements as applicable to the 2008 Ozone NAAQS.

On March 12, 2008, the United States Environmental Protection Agency (EPA) lowered the NAAQS for ozone to 0.075 ppm as an 8-hour average. This triggered the requirement for states to submit infrastructure SIPs within 3 years. However, SIP requirements for the 2008 ozone NAAQS were delayed due to EPA reconsideration of the standard and then by uncertainty regarding the Good Neighbor provision caused by litigation of EPA's Cross State Air Pollution Rule (CSAPR).¹

On June 6, 2014, MassDEP submitted an Infrastructure SIP Certification for the 2008 ozone NAAQS to EPA that addressed all requirements of the Section 110(a)(2) infrastructure elements, but deferred addressing the Good Neighbor provision. MassDEP's 2014 Infrastructure SIP Certification stated:

¹ CSAPR was intended to help states meet the Good Neighbor provision for the 1997 ozone standard. The CSAPR litigation raised uncertainty regarding the Good Neighbor generally, thus creating uncertainty for SIPs for the 2008 ozone standard.

EPA has not issued new regulations or guidance regarding how states should address transport in connection with the 2008 ozone NAAQS. MassDEP will submit a separate Transport SIP to EPA to address this issue if necessary, once EPA has provided updated guidance.

On June 18, 2014, EPA found that MassDEP's Infrastructure SIP Certification was complete "with the exception of interstate transport elements found in Section 110(a)(2)(D)(i)(I) which were not part of the submittal." The uncertainty regarding the Good Neighbor SIP provision caused by the CSAPR litigation was resolved on April 29, 2014, when the U.S. Supreme Court issued a decision upholding CSAPR that clarified the Good Neighbor provision.² On January 20, 2017, EPA conditionally approved MassDEP's Infrastructure SIP Certification, noting that the transport components still needed to be submitted.³

Guidance and Modeling

On January 22, 2015, EPA issued a memorandum⁴ and preliminary air quality modeling results⁵ to assist states in developing Good Neighbor SIPs for the 2008 ozone NAAQS. In its memorandum, EPA established threshold criteria (following the approach it had used in CSAPR) to identify states that may significantly contribute to nonattainment or interfere with maintenance in downwind states. EPA's memorandum states:

CSAPR used a screening threshold (1 percent of the NAAQS) to identify contributing upwind states warranting further review and analysis. States whose air quality impact to a least one downwind problem receptor was greater than or equal to the threshold were identified as needing further evaluation for actions to address transport. States whose air quality impacts to all downwind problem receptors were below this threshold were identified as states not requiring further evaluation for actions to address transport - that is, those states had no emissions reduction obligation under the "Good Neighbor" Provision.

² For details on the legal history of this litigation see EPA's Findings of Failure to Submit a Section 110 State Implementation Plan for Interstate Transport for the 2008 National Ambient Air Quality Standards for Ozone, Federal Register / Vol. 80, No. 133 / Monday, July 13, 2015.

³ Air Plan Approval; MA; Infrastructure State Implementation Plan Requirements, Final Rule (81FR 93627) December 21, 2016.

⁴ Memorandum from Stephen D. Page, Director, EPA Office of Air Quality of Planning and Standards (OAQPS), to Regional Air Division Directors, "Information on the Interstate Transport "Good Neighbor" Provision for the 2008 Ozone National Ambient Air Quality Standard (NAAQS) under Clean Air Act (CAA) Section 110(a)(2)(D)(i)(I)," January 22, 2015. <http://www.epa.gov/sites/production/files/2015-11/documents/goodneighborprovision2008naaqs.pdf>

⁵ EPA OAQPS, "Updated Air Quality Modeling Technical Support Document for the 2008 Ozone NAAQS Transport Assessment," August 2015. http://www3.epa.gov/airtransport/pdfs/Updated_2008_Ozone_NAAQS_Transport_AQModeling_TSD.pdf

Using photochemical air quality modeling, EPA identified ozone monitors that it projected would be in nonattainment or would have maintenance problems with the 2008 ozone NAAQS in 2018. EPA projected that 11 monitors in the eastern half of the United States would be in nonattainment in 2018, and that 18 monitors would have maintenance issues. EPA then used source apportionment modeling to quantify the contribution of 2018 emissions from each state to projected 2018 ozone concentrations at each nonattainment and maintenance monitor. EPA classified a state's interstate transport impact as significant if the emissions from that state resulted in ozone levels of at least 1% of the 0.075 ppm NAAQS at any single nonattainment or maintenance monitor. EPA's modeling showed that emissions from sources in Massachusetts would not significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS in any downwind states in 2018.

EPA issued the CSAPR Update in October 2016⁶ that included updated photochemical air quality modeling that identifies monitors with projected nonattainment and maintenance problems in 2017 and the contribution of states to those problems. The modeling projected 6 monitors in the eastern U.S. would be in nonattainment and 13 monitors would have maintenance issues.⁷ The largest modeled contributions from Massachusetts emissions to nonattainment and maintenance monitors are shown in Table 1 below, which are well below the 1% of NAAQS threshold established by EPA. The reductions in modeled contributions from Massachusetts are due to the steady reduction of ozone pre-cursor emissions from Massachusetts sources, which are projected to continue in the future (see Figures 1 and 2). Therefore, according to EPA's January 2015 guidance memorandum and EPA's 2016 CSAPR Update, no further evaluation or emission reductions are required for Massachusetts to satisfy its interstate transport obligations.

⁶ 81 FR 74504; October 26, 2016.

⁷ Ibid. Table V.D-1, D-2, and D-3.

Table 1			
Massachusetts Largest Contribution in 2017	Percent of NAAQS	Monitor	Monitor Category
0.12 ppb	0.16%	New Haven, Connecticut Hammonasset State Park (09-009-9002)	nonattainment
0.06 ppb	0.08%	Greenwich, Connecticut Greenwich Point Park (09-001-0017)	maintenance

Source: Table V.E-1—Largest Contribution To Downwind 8-Hour Ozone Nonattainment And Maintenance Receptors For Each State In The Eastern U.S. (81 FR 74537) October 26, 2016; Air Quality Modeling Technical Support Document for the Final Cross State Air Pollution Rule Update, Appendix C: Contributions to 2017 8-Hour Ozone Design Values at Projected 2017 Nonattainment and Maintenance-Only Sites and associated spreadsheet Data File with Ozone Design Values and Ozone Contributions (final_csapr_update_ozone_design_values_contributions_all_sites.xlsx). EPA Office of Air Quality Planning and Standards, August 2016. <https://www.epa.gov/airmarkets/final-cross-state-air-pollution-rule-update>

FIGURE 1: VOC Emissions in Massachusetts
2008-2014 and EPA 2018 Projections (tons/year)

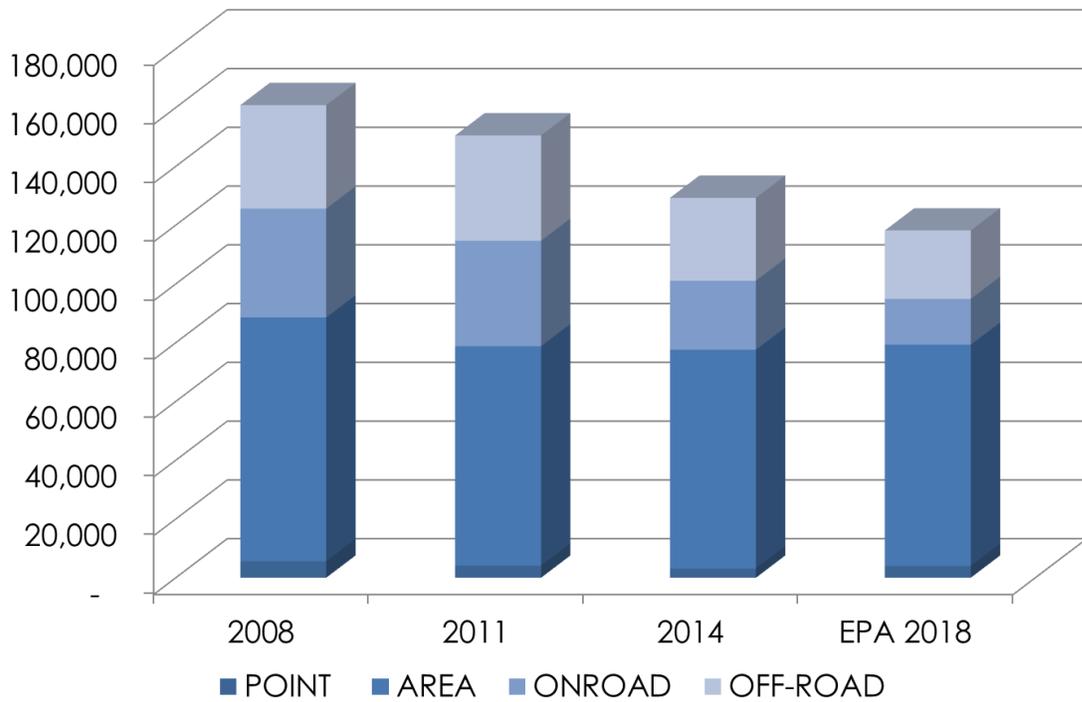


FIGURE 2: NOx Emissions in Massachusetts
2008-2014 and EPA 2018 Projections (tons/year)

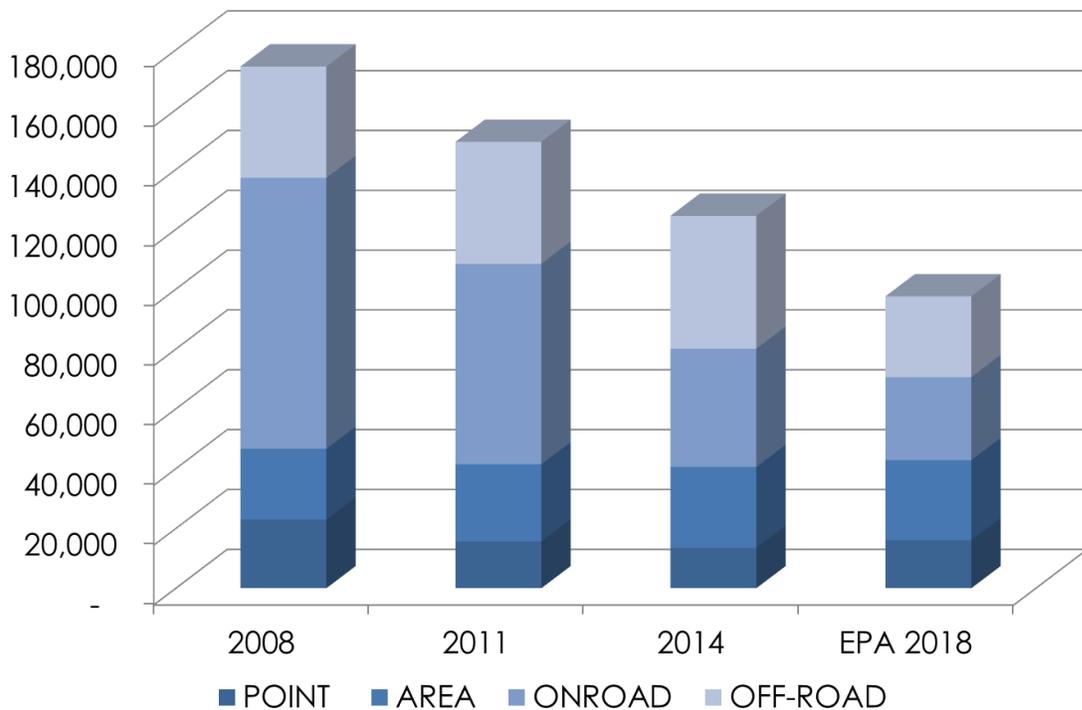


Figure 1 and 2 Sources:

- 2008/2011 – Massachusetts Periodic Emissions Inventory of VOC, NO_x, CO, SO₂, PM₁₀, PM_{2.5} and NH₃ – 2011. September 2016. SECTION 1 – SUMMARY, TABLE1.5: MA 1990 TO 2011 VOC, NO_x, CO & SO₂ EMISSIONS TRENDS (at <http://www.mass.gov/eea/agencies/massdep/air/reports/emissions-inventories.html>)
- 2014 – MassDEP unpublished inventory files (will be published at location link above).
- 2018 EPA PROJECTIONS: National Emissions Inventory v6, v1 modeling platform reports (ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform/reports/2018_emissions/2018ed_v6_11f_s_tate_sector_totals.xlsx) January 7 2014

Conclusion

Based on EPA’s guidance and photochemical air quality modeling, MassDEP certifies that its SIP ensures that emissions from sources in Massachusetts do not significantly contribute to nonattainment, or interfere with maintenance of, the 2008 ozone NAAQS in any downwind states. This Certification fulfills the interstate transport requirements in Section 110(a)(2)(D)(i) of the CAA and completes MassDEP’s Infrastructure SIP Certification in accordance with Sections 110(a) (1) and (2) of the CAA for the 2008 ozone NAAQS.