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April 7, 2021

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
(via email: regan.michael@epa.gov)

RE: Ozone Transport Commission Recommendation That EPA Require Daily Limits for Emissions of Nitrogen Oxides From Certain Sources in Pennsylvania.
Docket ID No. EPA-HQ-OAR-2020-0351.

Dear Administrator Regan

The following comments are provided on behalf of the Midwest Ozone Group ("MOG"). in response to the notice captioned "Ozone Transport Commission Recommendation That EPA Require Daily Limits for Emissions of Nitrogen Oxides from Certain Sources in Pennsylvania" that was issued on January 15, 2021).[1]

MOG is an affiliation of companies and associations that draws upon its collective resources to seek solutions to the development of legally and technically sound air quality programs.[2] MOG's primary efforts are to work with policy makers in evaluating air quality

[1] These comments were prepared with the technical assistance of Alpine Geophysics, LLC. Comments or questions about his document should be directed to David M. Flannery, Kathy G. Beckett or Edward L. (Skipp) Kropp, Legal Counsel, Midwest Ozone Group, Steptoe & Johnson PLLC, 707 Virginia Street East, Charleston, West Virginia 25301; 304-353-8000; dave.flannery@steptoe-johnson.com; kathy.beckett@steptoe-johnson.com; or skipp.kropp@steptoe-johnson.com, respectively.

[2] The members of and participants in the Midwest Ozone Group include: American Electric Power, American Forest & Paper Association, American Wood Council, Ameren, Alcoa, Appalachian Region Independent Power Producers Association (ARIPPA), Associated Electric Cooperative, Big Rivers Electric Corp., Citizens Energy Group, Cleveland Cliffs, Council of Industrial Boiler Owners (CIBO), Duke Energy, East Kentucky Power Cooperative, ExxonMobil, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE/KU, Marathon Petroleum, National Lime Association, Ohio Utility Group, Olympus Power, and City Water, Light and Power (Springfield IL).

policies by encouraging the use of sound science. MOG has been actively engaged in a variety of issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules, NAAQS standards, nonattainment designations, petitions under Sections 126, 176A and 184(c) of the Clean Air Act ("CAA" or "Act"), NAAQS implementation guidance, the development of Good Neighbor state implementation plans (SIPs) and related regional haze and climate change issues. MOG Members and Participants own and operate numerous sources that would be adversely affected by EPA's implementation of the recommendations of the OTC. MOG seeks the development of technically and legally sound air pollution rules and actions that may impact on their facilities, their employees, their contractors, and the consumers of their products.

These comments will address the following points, among others, and express the concern of MOG with respect to any action by EPA to implement the OTC recommendations:

a. The OTC has failed to demonstrate that the recommended controls are necessary to bring any area into attainment by the dates provided in the Clean Air Act (CAA),

b. The OTC has failed to recognize that the sources subject to recommendation are already being evaluated by EPA under other authorities, and

c. The OTC has failed to recognize that residual nonattainment in the OTC is not being caused by the named sources in Pennsylvania, but rather, sources local to the areas of concern.

MOG calls upon EPA to disapprove the OTC recommendation and in doing so to find that local sources are the cause of the residual nonattainment that is the focal point of the OTC recommendation.

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Very truly yours,

/s/ *David M. Flannery*

David M. Flannery
Legal Counsel
Midwest Ozone Group

cc: Submitted to Docket ID No. EPA-HQ-OAR-2020-0351.

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MIDWEST OZONE GROUP COMMENTS ON OZONE TRANSPORT COMMISSION RECOMMENDATION THAT EPA REQUIRE DAILY LIMITS FOR EMISSIONS OF NITROGEN OXIDES FROM CERTAIN SOURCES IN PENNSYLVANIA

Docket ID No. EPA-HQ-OAR-2020-0351

**(86 Federal Register 4049, January 15, 2021;
86 Federal Register 10267, February 19, 2021)**

APRIL 7, 2021

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Exhibit B:

Stationary and Area Sources Committee; OTC / MANE-VU Joint Committees' Meeting September 21, 2018; http://www.midwestozonegroup.com/files/MOG_OTC_SAS_Public_09212018.pdf

Exhibit C:

Midwest Ozone Group Comments Regarding Cleaner Truck Initiative; Advance Notice of Proposed Rulemaking; Docket ID No. EPA-HQ-OAR-2019-0055, February 20, 2020; http://midwestozonegroup.com/files/Midwest_Ozone_Group_Comments_on_CTI_2.20.20.pdf

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Exhibit E

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MIDWEST OZONE GROUP COMMENTS ON OZONE TRANSPORT COMMISSION RECOMMENDATION THAT EPA REQUIRE DAILY LIMITS FOR EMISSIONS OF NITROGEN OXIDES FROM CERTAIN SOURCES IN PENNSYLVANIA

APRIL 7, 2021

I. Introduction.

The Midwest Ozone Group (MOG) is pleased to have the opportunity to comment on the "Ozone Transport Commission (OTC) Recommendation That EPA Require Daily Limits for Emissions of Nitrogen Oxides from Certain Sources in Pennsylvania" pursuant to the Notice of Public Hearing and Supplemental Information issued by the U.S. Environmental Protection Agency (EPA). (86 Federal Register 4049, January 15, 2021).[1] The comment period on this proposal was extended by EPA to April 7, 2021. 86 Federal Register 10267, February 19, 2021,

MOG is an affiliation of companies and associations that draws upon its collective resources to seek solutions to the development of legally and technically sound air quality programs.[2] MOG's primary efforts are to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG has been actively engaged in a variety of issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules, NAAQS standards, nonattainment designations, petitions under Sections 126, 176A and 184(c) of the Clean Air Act ("Act"), NAAQS implementation guidance, the development of Good Neighbor state implementation plans (SIPs) and related regional haze and climate change issues. MOG Members and Participants own and operate numerous sources that would be adversely affected by the OTC recommendation. MOG seeks the development of

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technically and legally sound air pollution rules and actions that may impact on their facilities, their employees, their contractors, and the consumers of their products.

The following comments will present three key conclusions about the OTC recommendation as follows:

a. The OTC has failed to demonstrate that the recommended controls are necessary to bring any area into attainment by the dates provided in the Clean Air Act (CAA),

b. The OTC has failed to recognize that the sources subject to recommendation are already being evaluated by EPA under other authorities, and

c. The OTC has failed to recognize that residual nonattainment in the OTC is not being caused by the named sources in Pennsylvania, but rather, sources local to the areas of concern.

II. Comments.

1. Section 184(c) provides a specific framework for not only assessing the merit of the OTC Recommendation, but also EPA's action in response.

As EPA notes in its notice, Section 184(c)(1) makes it clear the OTC Recommendation must be supported by a determination that the control measures being recommended "are necessary to bring any area in such region into attainment by the dates provided . . . "[3] This provision requires more than the presence of non-attainment on maintenance areas in the OTC, or named sources emitting NOx. For the OTC Recommendation to be approvable, the OTC must demonstrate that the prescribed control measures will be sufficient to bring the subject areas into attainment and that such attainment could not be achieved equally or more effectively by other actions. These comments will establish that the OTC has failed the meet the burden of this threshold test.

Section 184(c)(4) requires that EPA approve or disapprove the OTC Recommendation, in whole or in part, within 9 months of receipt. Should EPA disapprove all or any part of the OTC Recommendation, EPA is to specify:

1. Why any recommended control measures are not necessary to bring any such area in attainment, and

2. Equal or more effective actions that could be taken by the OTC.

Set forth below is a thorough demonstration of why the control measures recommended by the OTC are not necessary to bring any area into attainment and further, directs attention to more effective control measures that both the EPA and the OTC have already determined will bring OTC non-attainment and maintenance areas into attainment.

[3] 86 Fed. Reg. at 4050.

Section 184(c)(5) addresses EPA's options if it were to approve the OTC Recommendation in whole, or in part. In such event, EPA authority is limited to making a finding under Section 110(k)(5) that the Pennsylvania SIP is inadequate to meet the requirements of Section 110(a)(2)(D) which would allow Pennsylvania one year within which to revise its SIP. This provision does not mandate the application of the 4-step process typical for actions under the Good Neighbor Provisions of the CAA. Rather, Section 184(c) creates an independent test ("necessary to bring any area . . . into attainment") as the threshold test for action finding that a state SIP was inadequate.

2. The OTC fails to offer any demonstration that the recommended controls on the named 18 sources are necessary to bring any area into attainment.

Even though Section 184(c)(1) makes it clear that the OTC Recommendation must be supported by a determination that the recommended controls "are necessary to bring any area in such region into attainment by the dates provided . . .", no such demonstration is offered by the OTC. Neither the "OTC Recommendation nor its "Policy and Technical Rationale Supporting OTC's Recommendation for Additional Control Measures Under Section 184(c)," dated June 2020 present a quantified numerical linkage between the recommended control requirements or demonstrate the need for those reductions to bring any non-attainment or maintenance areas into attainment.

The OTC asserts that Pennsylvania was determined by EPA to be a significant contributor to each state failing to meet the 2015 ozone NAAQS. Pennsylvania has also been targeted for its significant contribution to portions of Connecticut, New Jersey and New York.[4] Each of EPA's determinations regarding Pennsylvania encompassed **all** sources located in Pennsylvania. EPA did not find justification for only targeting 18 sources, as has been suggested by the OTC Recommendation.

The OTC references general research that supports the assertion that reducing regional NOx emissions will lower peak ozone levels.[5] This research does not provide adequate detail that lends justification to targeting the 18 sources that are the subject of the OTC Recommendation. That research simply does not technically quantify reductions in ambient ozone concentrations attributable to the recommended measures for the 18 sources.

The OTC represents it relied on the Maryland modeling work related to that petition. Upon review, it is apparent that the Maryland modeling does not quantify the impact of controls upon achieving attainment. The Maryland modeling examined impact on monitors without revealing whether the monitors on those days were experiencing high or low ozone concentrations. The inadequacy of the Maryland modeling warrants additional discussion that will be addressed later in these comments.

The OTC Recommendation is that EPA approve and impose controls on the 18 identified sources based upon the representation of the appropriate application of specific emissions control

[4] Policy and Technical Rationale Supporting OTC's Recommendation for Additional Control Measures Under CAA Section 184(c) June 2020, p.2.
[5] *Id*. at p. 4

technologies. The OTC recommended implementation of controls does not reflect actual operations within current wholesale market conditions. This recommended strategy does not recognize the inherent limitations of the technologies identified nor does it focus upon the emissions reductions necessary to address the national air quality standard (NAAQS) non-attainment.

A matter of particular concern is that the OTC recommendation fails to recognize that several of the units it names are coal refuse-burning units that are equipped with circulating fluidized bed (CFB) boilers and SNCR which are not capable of being equipped with SCR controls; These units include Colver AAB01, Northampton NGC01, Panther Creek 1,2, Scrubgrass 1,2, and Seward 1,2. Further, the OTC and Maryland recommendation simply does not appreciate or understand that these boilers use coal refuse for fuel which is quite variable and is only able to be used as a primary fuel by circulating fluidized bed boilers. Due to the lack of understanding regarding these boilers and their fuel, the control of these units must be left to Pennsylvania which recognizes and understands the operations and emissions control capabilities of these units.

The OTC recommended control measures call for "optimizing" already installed SCR and SNCR controls without regard to any air quality metric that would indicate NOx emission reductions or attainment impacts. Modeling is of utmost importance relative to ozone transport analyses. In the singular court case that has addressed the applicability of Section 184(c)[6] the D.C. Circuit rejected EPA's SIP call under Section 184 "in the absence of applicable modeling" demonstrating that the applicable implementation plan was inadequate "to mitigate adequately the interstate pollutant transport described in' sections 176A or 184." The OTC Recommendation similarly fails in the absence of modeling assessing whether the recommended control measures "are necessary to bring any area in such region into attainment."[7]

3. The OTC inappropriately seeks to support its recommendation by asserting that EPA's November 21, 2019 modeling related to the 2015 ozone NAAQS identified Pennsylvania as a significant contributor to non-attainment in the OTC.

The OTC offers the Maryland Department of the Environment (MDE)-contracted project with the University of Maryland, College Park (UMD) Department of Atmospheric & Oceanic Science to perform photochemical sensitivity modeling to demonstrate that emissions from all Pennsylvania (PA) coal fired EGUs significantly contribute to ozone formation in Maryland (MD). This sensitivity modeling completed was intended to show the maximum ozone concentration reductions/ozone benefits if Pennsylvania coal-fired EGUs are required to optimize running their existing SCR and SNCR controls. The sensitivity analysis also had the intention of comparing current maximum allowable emission at Pennsylvania coal-fired EGUs to the emissions that would be allowed if Pennsylvania coal-fired EGUs were required to optimize their existing control

[6] *Virginia v. EPA*, 108 F.3d 1397 (D.C. Cir. 1997)

[7] In addition to its failure to address whether the recommended controls are necessary to bring any area into attainment, the OTC offers no analysis of whether any such controls would be cost effective when any required emission reductions are compared to any air quality improvements that may, or may not result from those control measures.

technologies every day of the ozone season. Significantly, this modeling included a series of assumptions that call into question the relative contribution findings of the analysis. Additional limitations of the modeling platform are discussed later in this document and here the focus is upon the presumed contribution of Pennsylvania and Pennsylvania EGUs to non-attainment in the OTC.

In their recommendation, the OTC states that "in its assessment of ozone transport, EPA has identified Pennsylvania as a contributor to high ozone in each of the states failing to meet the 2015 ozone NAAQS." What is critically omitted from this statement is the fact that, ***EPA's modeling accounts for <u>all</u> anthropogenic source emissions originating from Pennsylvania, not just the 18 EGUs that they seek to regulate***.

According to EPA's latest 2023 source apportionment modeling[8], only four monitors, all in Connecticut, are identified as nonattainment with the 70 ppb ozone NAAQS. From this list, as seen in the table below which also includes relevant 2023 modeled monitors in the OTC located outside of the Commonwealth of Pennsylvania, all Pennsylvania sources are no more than the third highest contributors to ozone nonattainment as the monitors modeled in nonattainment. When Connecticut emissions are accounted for in the calculation, Pennsylvania becomes the fourth highest contributing state to the Fairfield (90010017) monitor after New York, New Jersey, and Connecticut which must be addressed before any consideration is given to turning to upwind sources for additional controls.

			Ozone Concentration (ppb)									
					Total Anthropogenic Source Ozone Contribution							
AQS Site ID	**State**	**County**	**2016-Centered Average DV**	**2023 Average DV**	**CT**	**DE**	**MD**	**MA**	**NJ**	**NY**	**PA**	**VA**
90010017	CT	Fairfield	79.3	73.4	6.17	0.30	0.67	0.07	7.59	18.20	5.88	0.59
90013007	CT	Fairfield	82.0	74.3	4.04	0.42	1.18	0.34	7.48	14.01	6.53	1.25
90019003	CT	Fairfield	82.7	76.9	2.68	0.42	1.18	0.07	8.44	14.14	6.72	1.27
90099002	CT	New Haven	79.7	71.7	3.84	0.52	1.51	0.15	5.53	12.15	5.47	1.63
240150003	MD	Cecil	74.0	63.1	0.47	2.18	6.36	0.69	2.97	2.37	7.82	1.69
340150002	NJ	Gloucester	73.7	65.1	0.19	2.75	3.32	0.26	4.98	2.30	13.49	1.27
360850067	NY	Richmond	76.0	69.3	0.43	0.31	1.14	0.01	11.68	9.55	7.15	0.94
510130020	VA	Arlington	71.0	61.1	0.14	0.56	9.99	0.14	1.30	1.35	5.22	9.06

Table 1. EPA 2023 source apportionment analysis.

Importantly, only a small portion of the total Pennsylvania emissions are attributable to EGUs.

[8] https://www.epa.gov/sites/production/files/2020-10/ozone_design_values_contributions_proposed_revised_csapr_update.xlsx

Alpine Geophysics previously assessed[9] the impact on downwind air quality of specific source sectors within the upwind states. Since that time, the modeling effort was updated using EPA's 2023en modeling platform and those data were used to present results in comments to EPA rulemakings[10]. From this modeling, Alpine determined that the Pennsylvania EGU-only contribution to the Connecticut monitors in the 2023 platform were between 18 and 22% of the total Pennsylvania anthropogenic emission contribution (0.82 ppb – 1.09 ppb), far less than the maximum 7.0 ppb benefit claimed by optimizing Pennsylvania EGUs. This estimate includes all EGU sources in Pennsylvania, not just the 18 sources listed in the OTC recommendation to EPA. The figures below present this information from the Alpine modeling analysis with total EGU contribution from all Pennsylvania sources highlighted. Should the emissions from only the 18 sources be accounted for in this calculation, the relative contribution would be even lower.

Furthermore, from the figures set out below for selected OTC monitors located outside Pennsylvania, it is easily inferred that contributions from adjacent upwind states, in addition to contributions from the monitor-located state itself, have notable more impact on ozone formation at these monitors than does Pennsylvania, either from the EGU sector individually, or all anthropogenic emissions within the state.

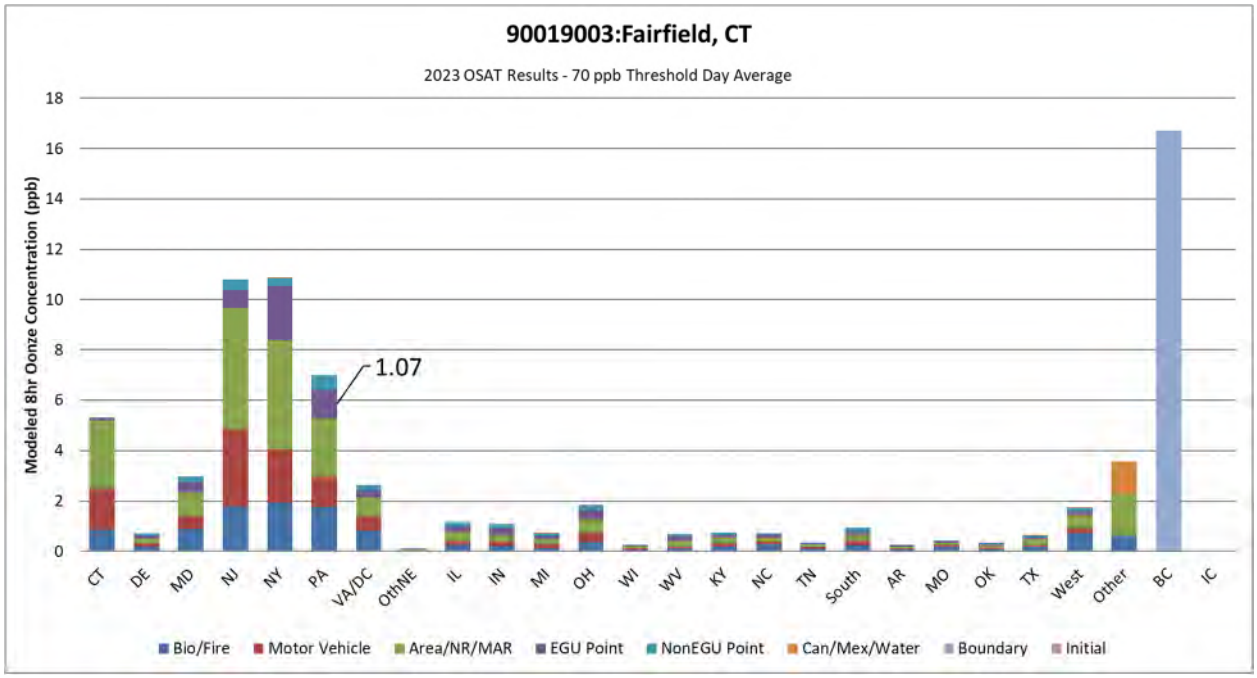

Figure 1. State-sector source apportionment results of 2023 for Fairfield, CT monitor 90019003.

[9] http://midwestozonegroup.com/files/IndependentSector-SpecificSourceApportionmentModelingofthe2017CrossStateAirPollutionRuleModelingPlatform.pdf

[10] EPA-HQ-OAR-2018-0225.

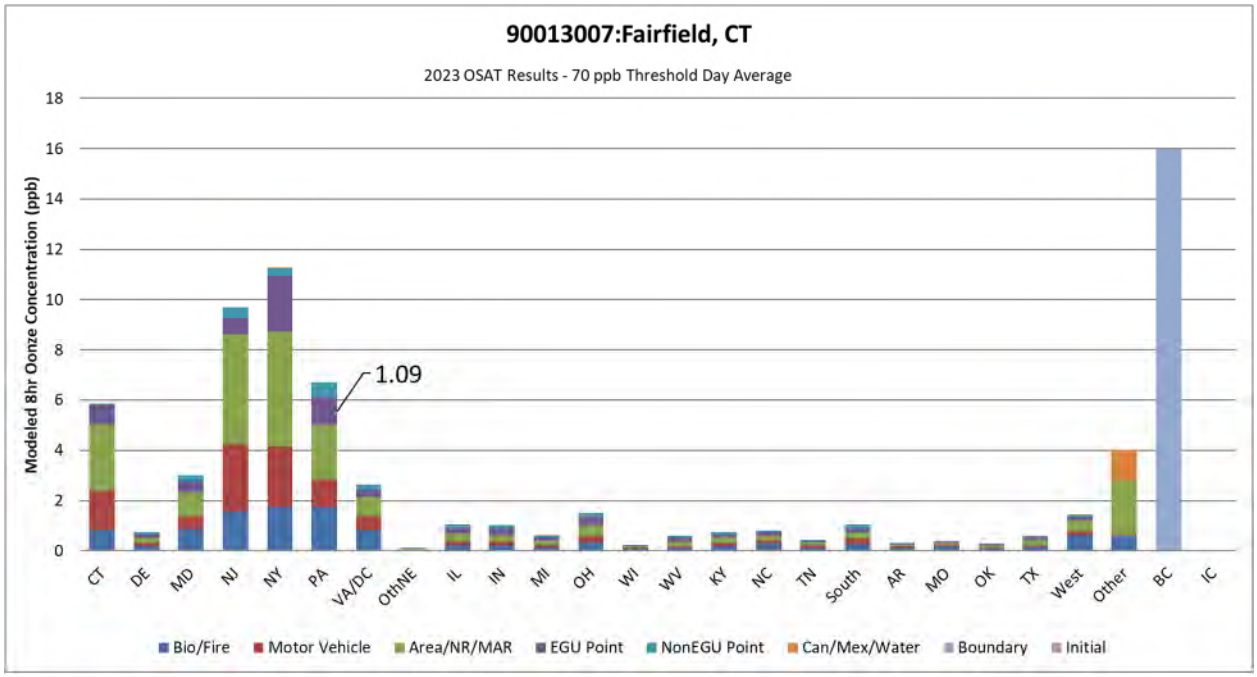

Figure 2. State-sector source apportionment results of 2023 for Fairfield, CT monitor 90013007.

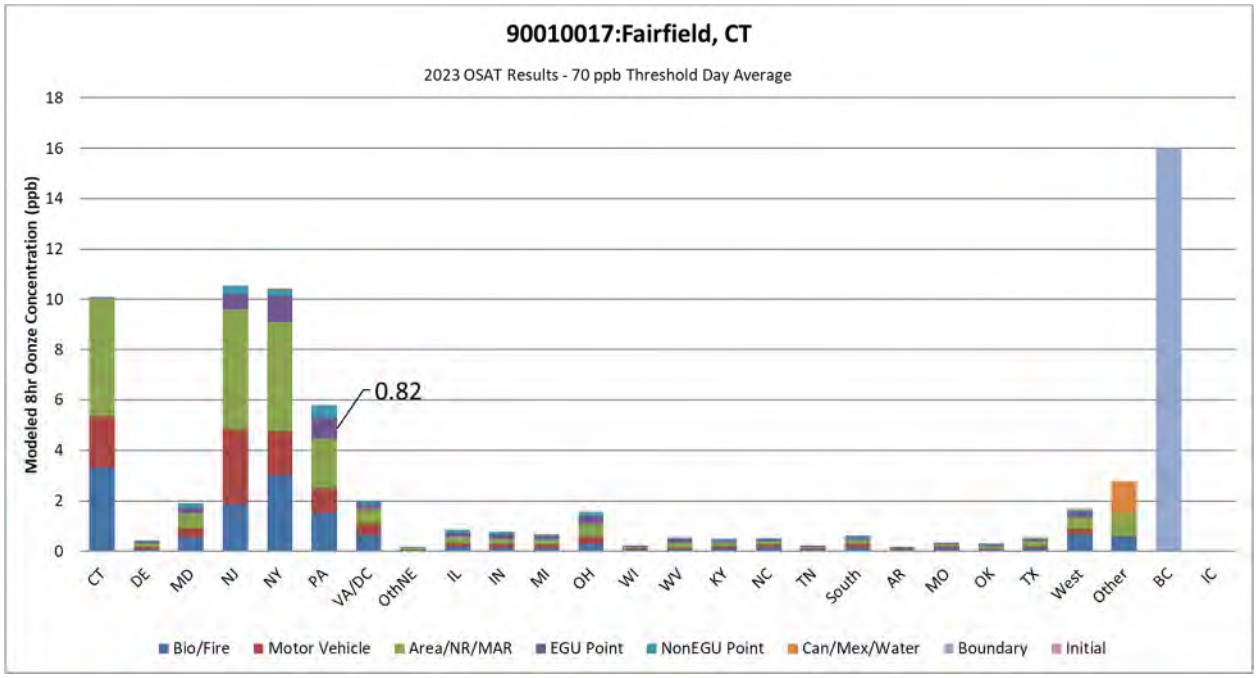

Figure 3. State-sector source apportionment results of 2023 for Fairfield, CT monitor 90010017.

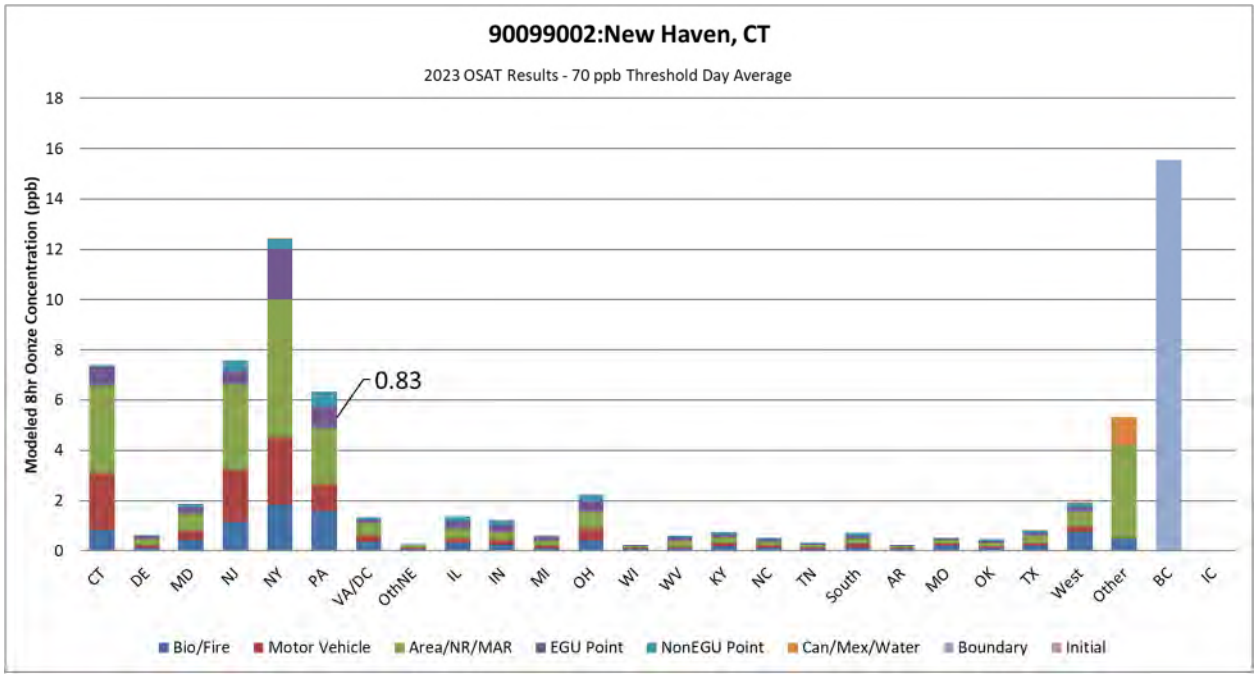

Figure 4. State-sector source apportionment results of 2023 for New Haven, CT monitor 90099002.

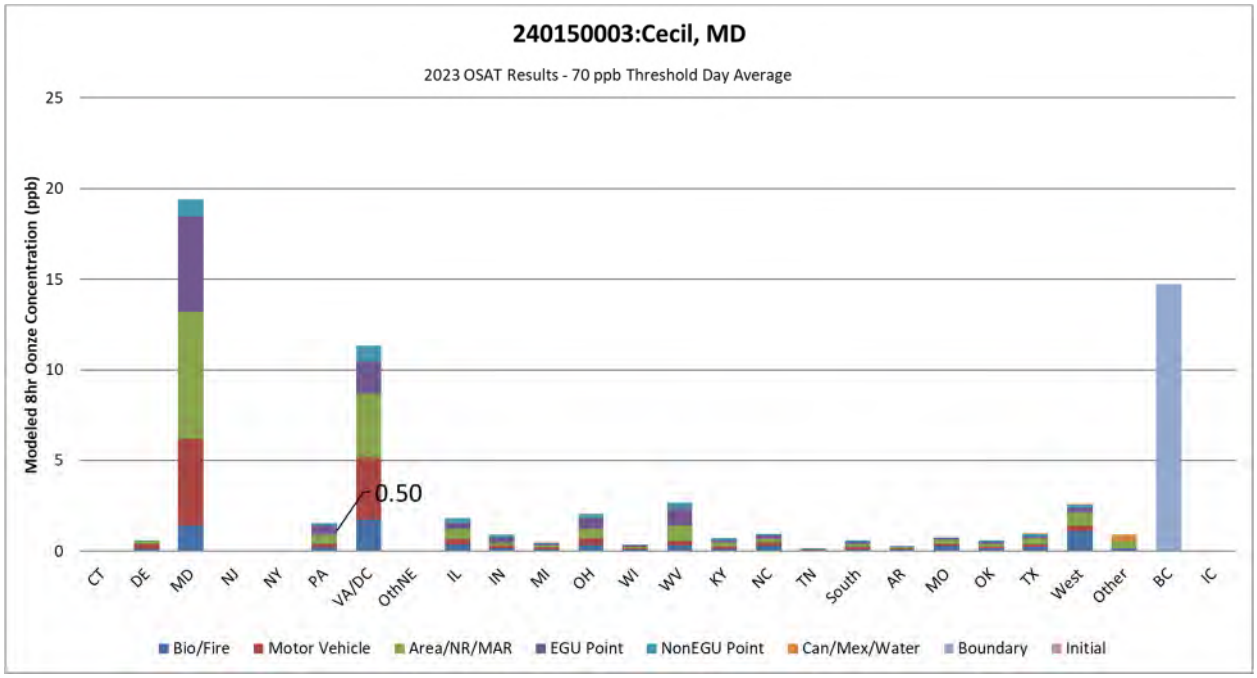

Figure 5. State-sector source apportionment results of 2023 for Cecil, MD monitor 240150003.

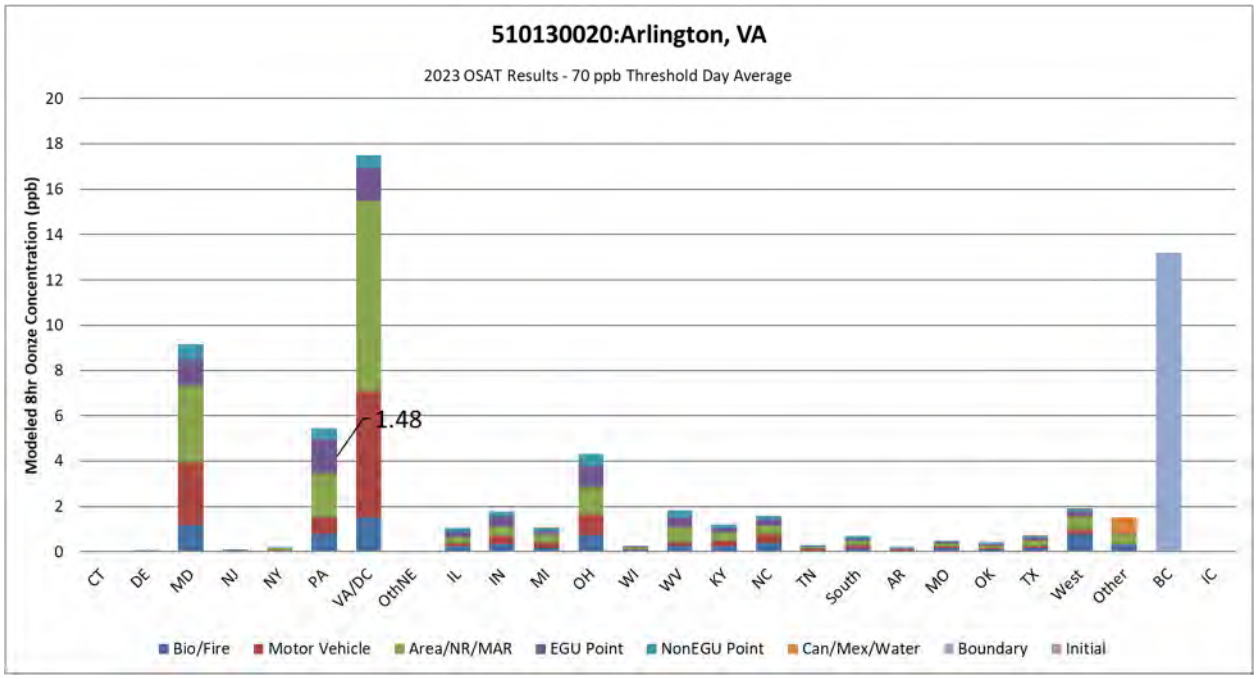

Figure 6. State-sector source apportionment results of 2023 for Arlington, VA monitor 510130020.

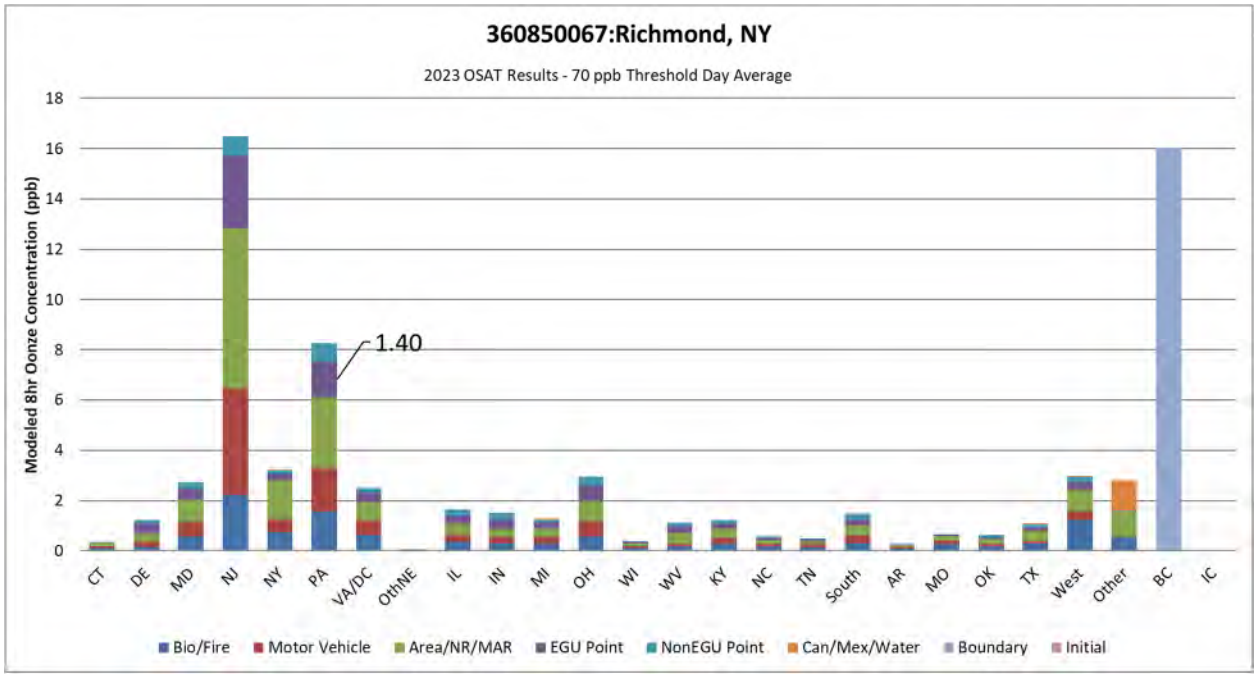

Figure 7. State-sector source apportionment results of 2023 for Richmond, NY monitor 360850067.

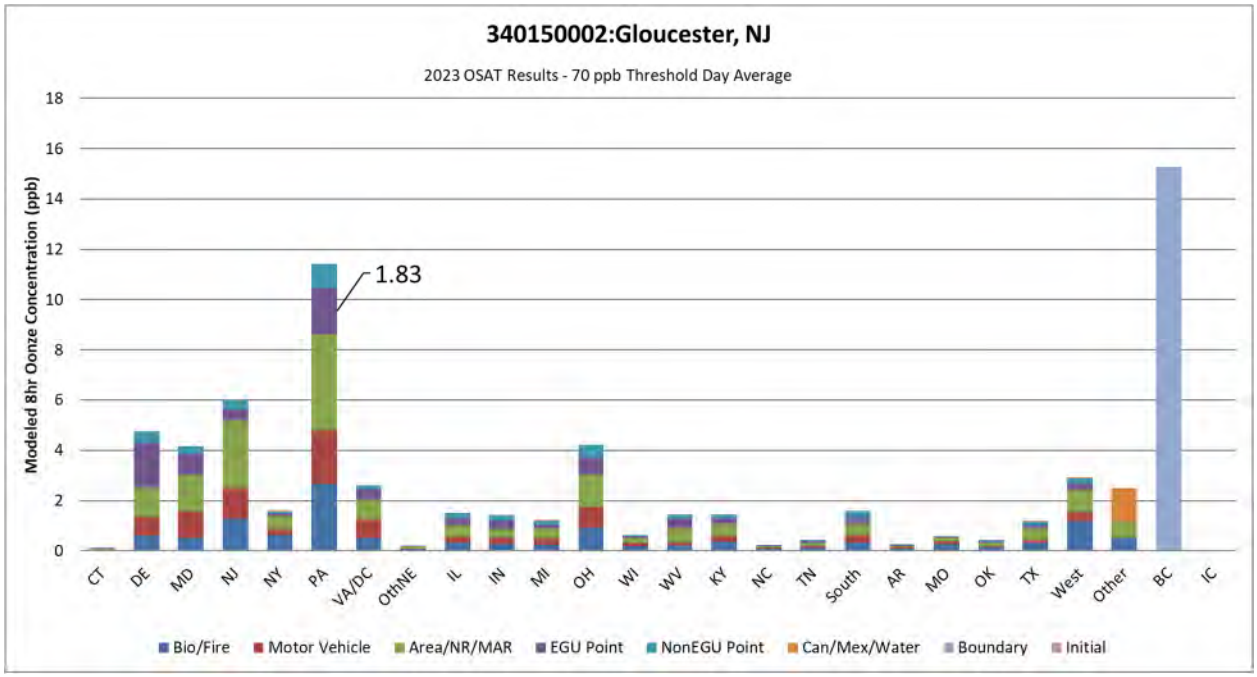

Figure 8. State-sector source apportionment results of 2023 for Glouchester, NJ monitor 340150002.

4. Other proceedings before EPA will resolve any open issues raised by the OTC recommendation.

CAA Section 184(c) applies in the following manner:

(c) Additional control measures

(1) Recommendations

Upon petition of any State within a transport region established for ozone, and based on a majority vote of the Governors on the Commission [1] (or their designees), the Commission [1] may, after notice and opportunity for public comment, develop recommendations for additional control measures to be applied within all or a part of such transport region if the commission determines such measures are necessary to bring any area in such region into attainment by the dates provided by this subpart. The commission shall transmit such recommendations to the Administrator.

(2) Notice and review

Whenever the Administrator receives recommendations prepared by a commission pursuant to paragraph (1) (the date of receipt of which shall hereinafter in this section be referred to as the "receipt date"), the Administrator shall…

> (B) commence a review of the recommendations to determine whether the control measures in the recommendations are necessary to bring any area in such region into attainment by the dates provided by this subpart and are otherwise consistent with this chapter. (emphasis supplied)

Approval of a recommendation made under CAA Section 184(c) turns ***on whether the additional controls recommended are necessary*** to bring the area into attainment by the statutory attainment deadline. The present OTC recommendation is based on an allegation, with no supporting data, that additional controls are necessary to bring nonattainment areas within the OTR into attainment with the 2008 and 2015 ozone NAAQS. MOG analysis demonstrates that allegation is not true.

EPA's Notice of Public Hearing recognized that the OTC CAA Section 184(c) recommendation was "made in the context of ongoing activities addressing other CAA provisions," and that such activities "have the potential to cause reductions in emissions from the Pennsylvania EGUs potentially affected by the OTC's recommendation by the point in time at which emissions reductions could be anticipated in response to an approval or partial approval of the OTC's recommendation, and the resulting SIP call and implementation." EPA discusses these activities and requests comment on the relevance of these or other activities to EPA's decision on whether to approve, disapprove, or partially approve and partially disapprove the OTC recommendation.

a. Revised CSAPR Update

One ongoing activity discussed by EPA in its Notice of Public Hearing is its Revised CSAPR Update rulemaking that specifically addresses transport obligations of states including Pennsylvania with respect to the 2008 ozone NAAQS. ***The OTC, however, dismisses the Revised CSAPR Update remand in making its recommendation. This dismissal and omission from its analysis, renders the OTC recommendation irreparably flawed.*** The OTC consistently dismisses the impact of the Revised CSAPR Update as evidenced in it Response to Comments regarding the proposed Revised CSAPR Update, dated December 14, 2020. The OTC stated that "we do not agree that the proposal fully addresses interstate transport of ozone and its precursors under the 2008 ozone NAAQS." The OTC, however, offered no data in support of its statement. Rather, it simply stated that the proposed rule does not include "all reasonable NOx reduction options prior to the 2021 attainment deadline."

In the preamble to final Revised CSAPR Update, EPA offered several comments explaining that the Revised CSAPR Update fully addresses any responsibility that Pennsylvania may have to other states with respect to the 2008 ozone NAAQS. Specifically, EPA offers the following comments on the full nature of the remedy imposed by that rule reflecting EPA's determination of the application of cost effective controls:

> Based on EPA's assessment of remaining air quality issues and additional emission controls, EPA is further determining that these NOX emission reductions fully

eliminate these states' significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS in other states.[11]

This rule is a full remedy for the good neighbor provision for the covered upwind states for the 2008 ozone NAAQS based on EPA's analysis. The good neighbor provision does not obligate upwind states to fully resolve a downwind nonattainment or maintenance problem. CAA section 110(a)(2)(D)(i)(I) only requires that upwind states prohibit those emissions that "contribute significantly to nonattainment" or "interfere with maintenance of the NAAQS."[12]

b. Revised Pennsylvania NOx RACT program

The second ongoing activity noted by EPA is Pennsylvania's proceedings to revise NO_x RACT requirements applicable to the state's coal and coal refuse-fired EGUs. EPA described the Pennsylvania NOx RACT program as follows:

> Pennsylvania most recently updated its NOX RACT requirements for coal-fired EGUs in 2016 to address the 2008 ozone NAAQS (Pennsylvania calls these requirements ''RACT II''). The requirements, which first became effective in January 2017, are codified at 25 Pa. Code §§ 129.96–129.100: Additional RACT Requirements for Major Sources of NOX and VOC. Section 129.97 sets ''presumptive'' RACT requirements for certain categories of sources, including coal-fired combustion units with SCR controls (129.97(g)(1)(viii)) and coal-fired combustion units with SNCR controls (129.97(g)(1)(ix)). Section 129.97(g)(1)(viii) requires that existing SCR-equipped coal-fired EGUs not exceed a NOX emission rate limit of 0.12 lb/mmBtu when operating with an SCR inlet temperature greater than or equal to 600 degrees Fahrenheit. Section 129.97(g)(1)(ix) requires that coal-fired combustion units with SNCR controls must operate their SNCR controls when operating with a temperature in the reagent injection area greater than or equal to 1,600 degrees Fahrenheit but does not set a NOX limit. Section 129.97(g)(1)(vi) establishes additional NOX emission rate limits that apply to coal-fired combustion units with rated heat input capacities greater than 250 million Btu per hour but operating at lower temperatures without regard to their installed control equipment: 0.16 lb/mmBtu for fluidized bed units, 0.35 lb/mmBtu for tangentially fired units, and 0.40 lb/mmBtu for all other types of units. Under section 129.100(a)(1), compliance with all of these limits must be demonstrated on a 30-day rolling average basis. Section 129.98 allows the emission rate limits to be met through averaging with other units subject to Pennsylvania's RACT requirements (including non-coal-fired units) under the control of the same owner or operator.

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[11] Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, Prepublication Version, https://www.epa.gov/sites/production/files/2021-03/documents/final_revised_csapr_update_-_prepublication_version_with_disclaimer.pdf at page 15.

[12] *Id* at p. 64.

All of the 18 EGUs which are targeted in the OTC recommendation are already subject to the Pennsylvania NOx RACT program – program that continuous to be reviewed and updated. The OTC recommendations apply to only 18 specific EGUs in the Commonwealth of Pennsylvania that are already regulated and fail to recognize the numerous on the books controls, reducing emissions from industrial, commercial and institutional boilers, stationary generators, combustion turbines, cement and glass plants, and municipal waste combustors. The OTC does not acknowledge what EPA does which is these reductions impact NOx emissions sufficiently to resolve 2008 ozone NAAQS nonattainment.

c. 2015 Ozone NAAQS FIP

On December 5, 2019, EPA issued a finding of failure to submit a Good Neighbor SIP to address the 2015 ozone NAAQS. EPA is under a deadline to promulgate a Federal Implementation Plan within 24 months, rendering the OTC recommendation moot. As previously stated, approval of the OTC recommendation is dependent on a finding of residual nonattainment in the OTR. On December 5, 2019, (84 Fed Reg 66412) EPA issued a final finding that seven states, including Pennsylvania, had not submitted complete interstate transport plans to meet the Good Neighbor requirements of CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS. The Good Neighbor provisions of the CAA already require states to address the specific request of the OTC CAA 184(c) recommendation in that states are required to submit a State Implementation Plan (SIP) to EPA that will eliminate the significant contribution to nonattainment or maintenance of an upwind state to downwind states.

After a state submits a Good Neighbor SIP, CAA Section 110(k)(1)(B) requires that EPA make a determination within 6 months of submittal regarding whether the state has made a submission that meets the minimum completeness criteria and, more importantly, if a state fails to submit a transport SIP by the SIP submittal deadline, the EPA determination is called a ‘‘finding of failure to submit.’’ That is the determination EPA made in the case of Pennsylvania on December 5, 2019. The ‘‘finding of failure to submit’’ then triggers an obligation of EPA, under CAA Section 110(c)(1), to promulgate a Federal Implementation Plan within 2 years of the finding to address the Good Neighbor requirement unless prior to such promulgation the state submits and EPA approves a Good Neighbor SIP submittal.

Accordingly, some combination of EPA promulgating a Good Neighbor FIP or Pennsylvania submitting and obtaining approved a Good Neighbor SIP is required under the CAA by December of 2021. Even though that statutory deadline is months in the future, either the Good Neighbor FIP or an approved Good Neighbor SIP will render the OTC recommendation moot because its concerns will have been addressed. MOG believes that an EPA approval of the OTC recommendation would therefore result in a duplication of effort and a waste of resources and possibly specify emissions reductions beyond any that might be deemed as necessary and implemented by through these other regulatory actions.

d. New York §126 Petition

The Pennsylvania EGU facilities potentially affected by the OTC's Section 184(c) Recommendation were also the subject of the denied and now remanded 2018 NY §126 Petition. The Notice of Public Hearing related to the OTC Recommendation included information and reference to the NY petition that was seeking a finding that approximately 350 sources in nine states emit or would emit NOx in violation of the good neighbor provision with respect to the 2008 and 2015 ozone NAAQS. EPA denied that petition (84 FR 56058, Oct. 18, 2019) but the D.C. Circuit subsequently vacated the denial and remanded the petition to EPA with instructions to promulgate a revised response (New York v. EPA, 964 F.3d 1214, 1226 (D.C. Cir. 2020).

In the Notice of Public Hearing, EPA requests comment on whether and how regulatory activities such as the New York CAA Section 126 petition remand may bear on EPA's decision to approve, disapprove, or partially approve and partially disapprove the OTC's section 184(c) recommendation. The short answer is that an EPA approval of the New York CAA Section 126 petition or even a partial approval only related to the Pennsylvania EGUs will moot the OTC section 184(c) recommendation.

As a result of these on-going initiatives, the OTC recommendation is premature. The combination of these programs will result in the Pennsylvania EGU sources that are the targets of the OTC recommendation being controlled at levels sufficient to eliminate any nonattainment issues about which the OTC is complaining in its recommendation.

5. With respect to the 2015 ozone NAAQS, the only remaining nonattainment in the OTC in 2024 is predicted to be in Connecticut where the OTC recommended control measure will have little or no impact.

In 83 Federal Register 25776, EPA designated the New York-Northern New Jersey-Long Island, NY-NJ-CT area as a Moderate ozone nonattainment area under the 2015 ozone NAAQS. As part of this classification, it was assigned an attainment date of August 2024 to show demonstrated attainment with the 70 ppb standard. EPA recently conducted photochemical air quality modeling for the future year 2023[13] in which it determined that all but four monitors within the NAA are in attainment with the NAAQS.

[13] EPA-HQ-OAR-2020-0272-0064

The table below presents those results for monitors within the New York-Northern New Jersey-Long Island, NY-NJ-CT NAA.

			Ozone (ppb)	
AQS Site ID	**State**	**County**	**2016-Centered Average DV**	**2023 Average DV**
90010017	Connecticut	Fairfield	79.3	73.4
90011123	Connecticut	Fairfield	77.0	68.5
90013007	Connecticut	Fairfield	82.0	74.3
90019003	Connecticut	Fairfield	82.7	76.9
90079007	Connecticut	Middlesex	78.7	69.1
90090027	Connecticut	New Haven	75.7	67.7
90099002	Connecticut	New Haven	79.7	71.7
340030006	New Jersey	Bergen	74.3	68.1
340130003	New Jersey	Essex	68.3	61.1
340170006	New Jersey	Hudson	71.0	64.1
340190001	New Jersey	Hunterdon	71.3	62.6
340230011	New Jersey	Middlesex	74.7	65.6
340250005	New Jersey	Monmouth	67.3	58.9
340273001	New Jersey	Morris	69.0	61.2
340315001	New Jersey	Passaic	67.7	59.4
360050110	New York	Bronx	67.7	62.8
360050133	New York	Bronx	70.7	66.1
360610135	New York	New York	70.3	65.2
360810124	New York	Queens	72.3	66.2
360850067	New York	Richmond	76.0	69.3
360870005	New York	Rockland	71.3	63.7
361030002	New York	Suffolk	74.0	67.0
361030004	New York	Suffolk	74.3	67.0
361030009	New York	Suffolk	71.0	63.8
361192004	New York	Westchester	74.0	67.2

Table 2. 2024 predicted DVs for NYMA.

As will be discussed elsewhere in these comments, an investigation of the four remaining nonattainment monitors in Connecticut reveals that EPA[14], New York DEC[15], and the OTC[16] recognize that these monitors are largely impacted by peaking unit EGUs located in the NYMA, a

[14] Presentation by Norm Possiel, USEPA OAQPS, May 14, 2018, which is attached and identified as Exhibit A.

[15] http://www.midwestozonegroup.com/files/New_York_Peakers.pptx

[16] OTC Stationary and Area Source Committee report, September 21, 2018, which is attached and identified as Exhibit B.

category comprised mainly of simple cycle combustion turbines, many which can emit over 20 lbs NOx/MWh (compared to boilers which tend to operate at no more than 2.0 lbs NOx/Mwhr). Controlling the 18 units listed in Pennsylvania will likely have no impact on the projected design values for these monitors whereas controls on these peaking units may resolve the high ozone day peaks associated with the operation of this largely uncontrolled equipment type.

6. The OTC incorrectly asserts (Rationale, p. 4) that it could potentially face economic burden in part because of upwind emissions.

The OTC asserts that for areas that are marginal and on the verge of failing to achieve 2015 ozone NAAQS (Washington, D.C., Baltimore, Philadelphia, and greater Connecticut) those OTC states are at risk for "bump up" requiring additional regulation. The OTC comment is as follows:

> "These nonattainment areas include all or portions of Connecticut, Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, and Virginia, all of which are OTC members. Because these areas are not likely to achieve the ozone NAAQS by the statutory deadline, they are at risk of being re-classified ("bumped up") into a higher status with additional regulatory requirements. This means that these areas could potentially face economic burden in part because of air pollution that is not entirely under their control." Policy and Technical Rationale Supporting OTC's Recommendation for Additional Control Measures Under CAA Section 184(c), page 4.

The OTC's assumptions are incorrect about the data and the timing of upwind controls and perceived additional burdens they fear for their member states.

The OTC misunderstands the process and incorrectly asserts a singular burden on its member states. EPA has clarified in SIP approvals the following tandem functions of the CAA relative to nonattainment,

> While the EPA recognizes, as the court held in North Carolina and Wisconsin, that upwind emissions-reduction obligations therefore must generally be aligned with downwind receptors' attainment dates, unique features of the statutory requirements associated with the Marginal area planning requirements and attainment date under CAA section 182 lead the EPA to conclude that it is more reasonable and appropriate to require the alignment of upwind good neighbor obligations with later attainment dates applicable for Moderate or higher classifications."

"Approval and Promulgation of State Implementation Plan Revisions: Infrastructure Requirements for the 2015 Ozone National Ambient Air Quality Standards; Colorado and North Dakota," 85 Fed. Reg 20165, 20169 April 10, 2020.

> …, the EPA believes it is more appropriate and consistent with the nonattainment planning provisions in title I of the Act to evaluate downwind air quality and upwind state contributions, and, therefore, the necessity for upwind state emissions reductions, in a year aligned with an area classification in connection with which downwind states are also

required to demonstrate attainment and implement controls on existing sources — i.e., with the Moderate area attainment date, rather than the Marginal area date. *Id* at 20168.

With respect to the 2015 ozone NAAQS, the NYMA moderate area attainment deadline is 2024 where attainment is anticipated, and the other OTC areas are designated marginal non-attainment where the OTC has no burden to place controls on its own sources.

7. Pennsylvania's NOx emissions have experienced significant reduction.

According to EPA annual emission trends[17] data, Pennsylvania's annual anthropogenic NOx emissions have been continually decreasing since 1990. This reduction is largely associated with federal, state, and local regulation on EGUs and onroad mobile sources. The Figure 9 below demonstrates the significant reductions seen across these sectors, ultimately resulting in a reduction of 77% in annual NOx emissions in Pennsylvania between 1990 and 2019 and a 93% reduction in annual NOx exclusively from the electric utility fuel combustion category.

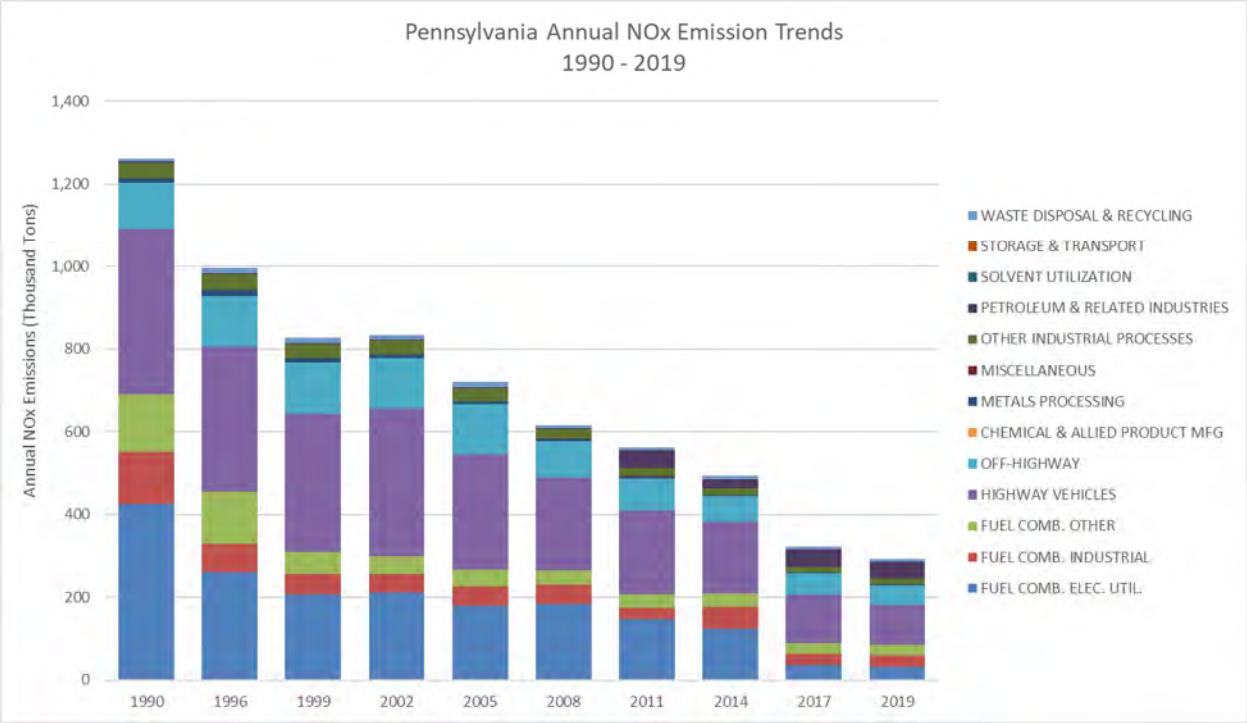


Figure 9. Pennsylvania Annual NOx Emission Trends.

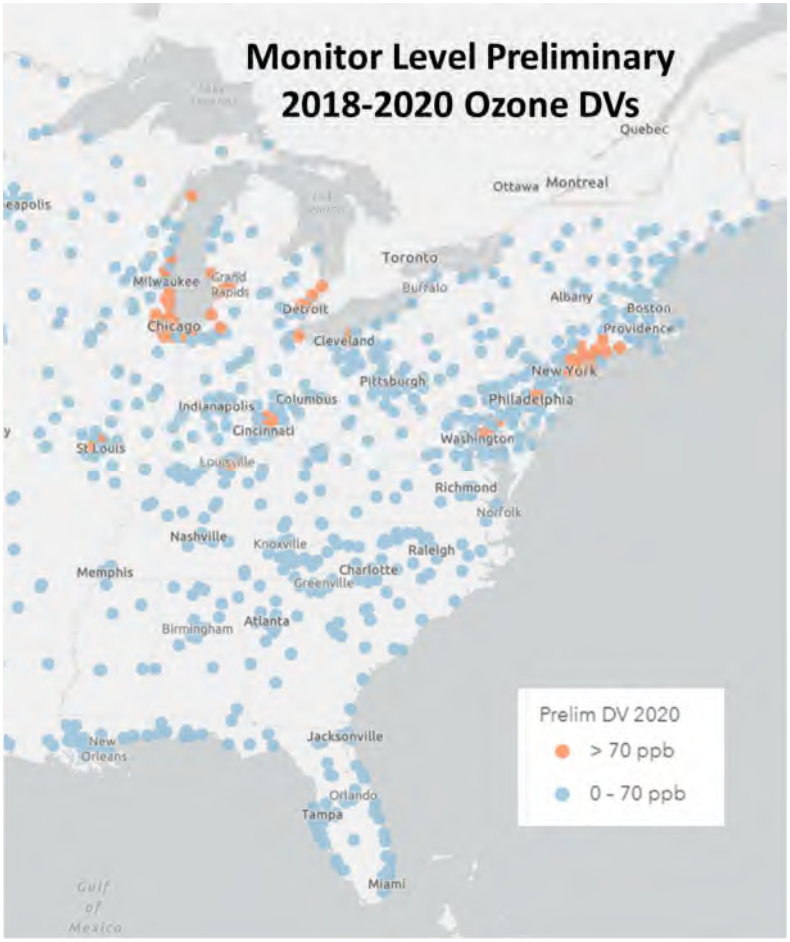
It is significant that the regional reductions that have occurred in recent years have occurred across all source categories and across EGU sources in many states. ***Emissions from the 18 named sources represent only 3.6% of emissions modeled from all Pennsylvania anthropogenic sources in the 2023 projection year platform (10,104 tpy NOx of a total 279,873 tpy NOx)***.

[17] https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data

Significantly important to current conditions and future modeling efforts, in addition to the relative contribution of source types in this 2016 simulation, it is recognized that additional EGU NOx emission reductions have been achieved since 2016 as a result of the Pennsylvania RACT II program and the deactivation of units. According to EPA CAMD data[18], ***Pennsylvania's ozone season EGU NOx emissions have decreased from 33,339 tons in 2016 to 11,636 tons in 2020, a reduction of 65% in four years.***

8. Air quality monitoring in the OTC continues to improve with on-the-books controls.

Alpine recently reviewed preliminary 2020 ozone measurements at monitors in the eastern U.S. As part of this analysis, they calculated preliminary 2018-2020 ozone design values relative to the 2015 ozone NAAQS of 70 ppb. Figure 10 below shows the location of monitors still found to be in nonattainment with the NAAQS (orange circles) based on these data. In the states of Connecticut, Maryland, New York, and New Jersey, thirteen (13) monitors move from nonattainment to attainment with the 2020 measurements with an average of 2 ppb reduction from 2017-2019 DV levels across all monitors in these states. The majority of monitors still in nonattainment are along the I-95 interstate corridor and primarily downwind of the New York metro area.



[18] https://ampd.epa.gov/ampd/

Figure 10. Preliminary 2018-2020 Ozone DVs.

Using these same data, 2021 4th high observations within key eastern states were estimated to determine ozone concentrations that would be required for currently non-attaining monitors to demonstrate attainment with the 70 ppb NAAQS. Table 3 below provides that information.

Of this list of monitors, only monitors in Connecticut have 4th high values at levels likely unattainable under current conditions and even with significant upwind reduction. This list in combination with the significant NOx emission reductions seen in all eastern states in the past decade appears to indicate that issues other than simply upwind sources are impacting design values at these locations.

State	County	AQS Site ID	Prelim 2018-2020 Ozone Design Value (ppb)	2021 4th High Needed for Attainment (ppb)
Connecticut	Fairfield	90010017	82	52
Connecticut	Fairfield	90011123	71	74
Connecticut	Fairfield	90013007	80	55
Connecticut	Fairfield	90019003	79	59
Connecticut	Middlesex	90079007	74	68
Connecticut	New Haven	90090027	72	67
Connecticut	New Haven	90099002	80	49
Connecticut	New London	90110124	73	67
Maryland	Anne Arundel	240031003	72	71
Maryland	Harford	240251001	72	69
Maryland	Prince George's	240339991	71	73
New Jersey	Bergen	340030006	72	76
New York	Bronx	360050133	71	76
New York	Queens	360810124	71	71
New York	Suffolk	361030002	71	72
New York	Suffolk	361030009	72	72
New York	Westchester	361192004	72	74

Table 3. OTC State Monitors with Preliminary 2018-2020 DV and Needed 2021 4th High Values Needed to Demonstrate Attainment with 2015 Ozone NAAQS.

9. Source apportionment demonstrates that EGU contribution is small compared to other categories.

As discussed earlier in this document, source apportionment modeling was conducted on an EPA 2023 modeling platform to determine the relative contribution of source categories within upwind states to downwind ozone contributions modeled under CSAPR. In addition to the stacked bar charts indicating the small relative contribution of Pennsylvania's EGU sources on downwind ozone concentrations, total EGU contribution to these monitors is also calculated as lower

compared to other categories impacting ozone formation at OTC receptors. The pie charts below were developed using the aggregate information from the bar charts and show the relative contribution, by major source category only, of all state contribution to key OTC monitors.

As is seen in these figures, at all represented monitors, the EGU contribution is significantly smaller than either the onroad mobile contribution or the area / nonroad mobile source contribution.

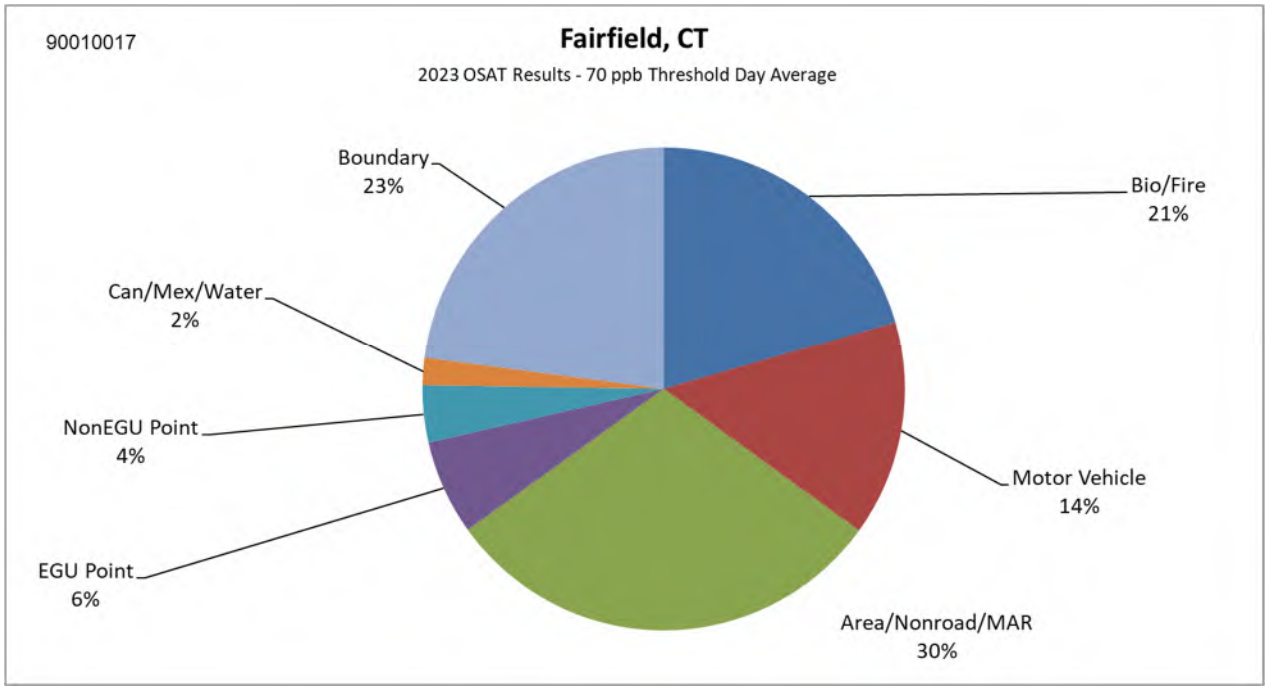


Figure 11. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Fairfield, CT monitor 90010017.

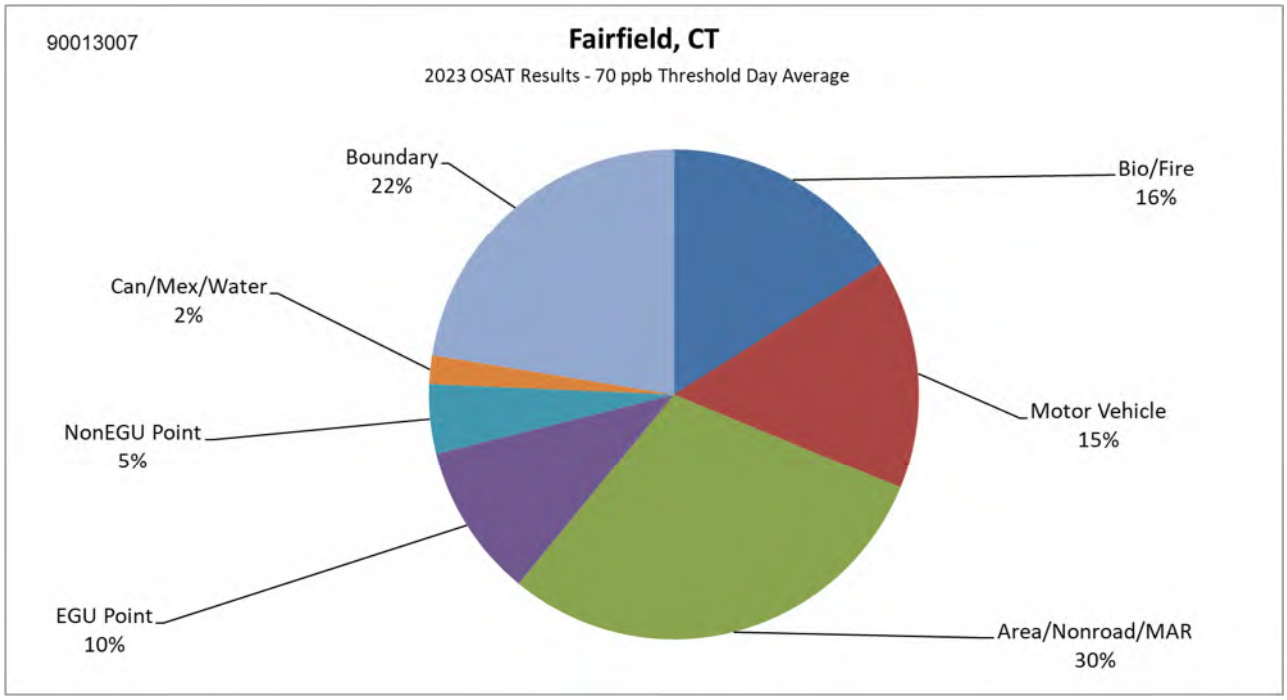


Figure 12. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Fairfield, CT monitor 90013007.

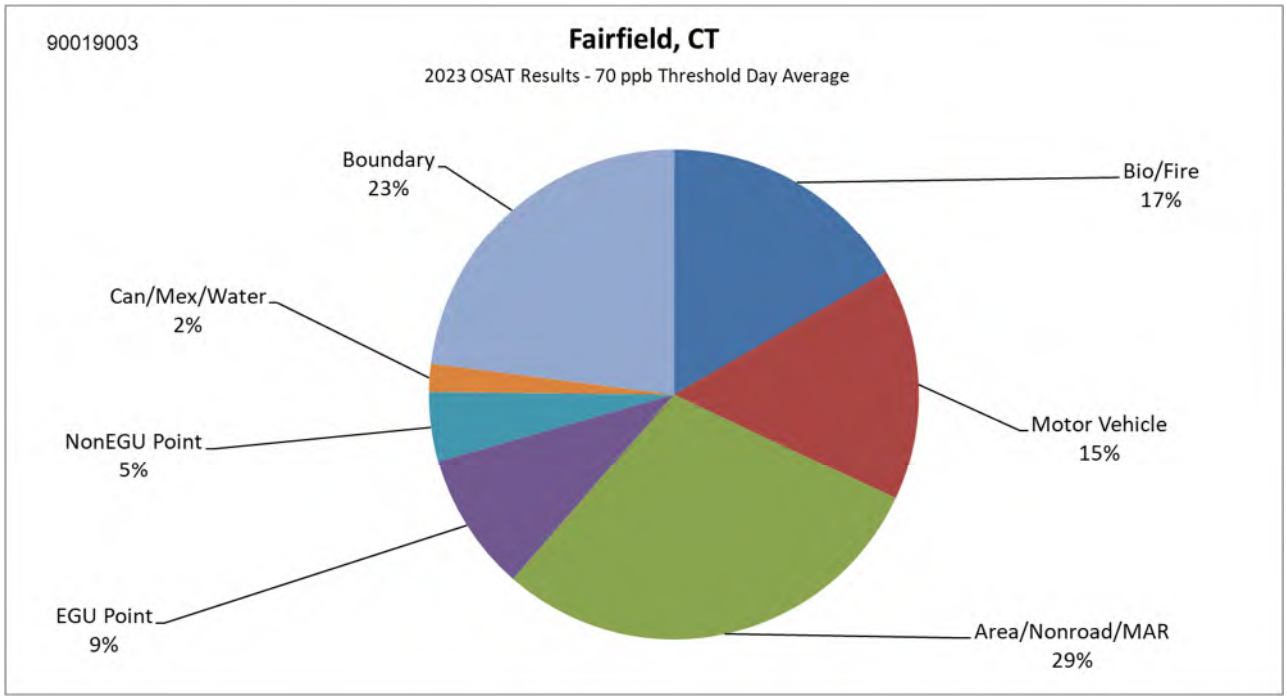


Figure 13. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Fairfield, CT monitor 90019003.

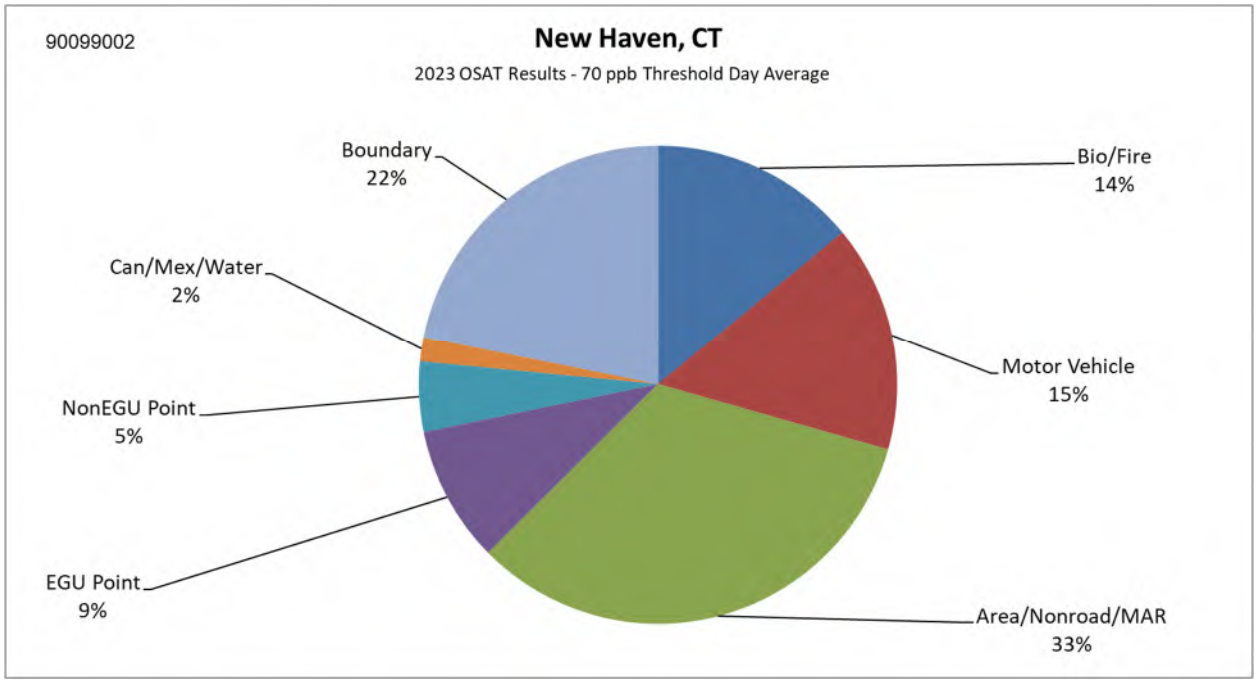


Figure 14. Relative contribution of 2023 emissions by major source sector on ozone concentrations at New Haven, CT monitor 90099002.

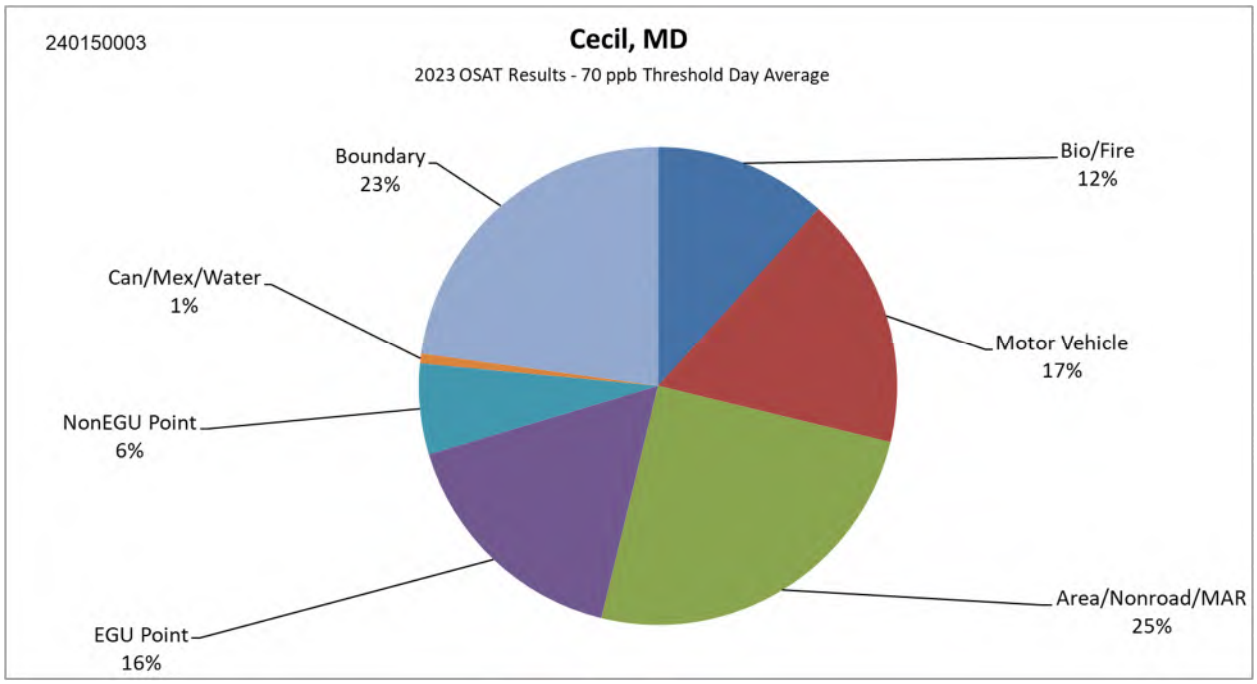


Figure 15. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Cecil, MD monitor 240150003.

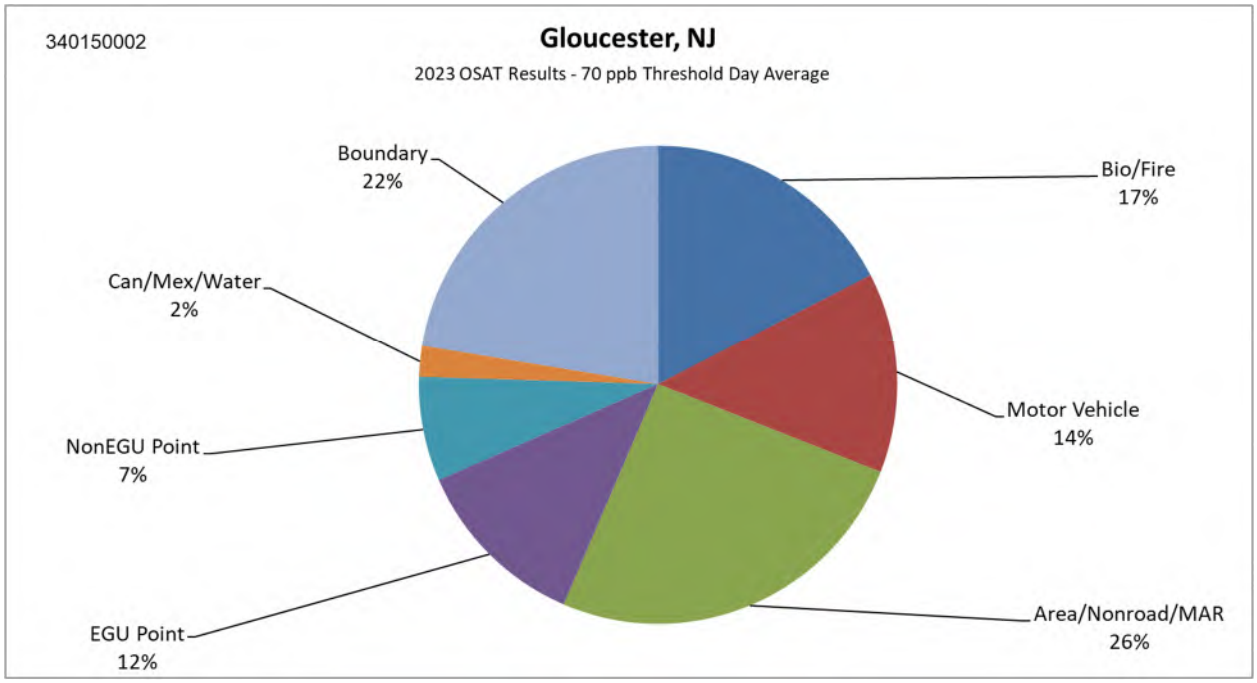


Figure 16. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Gloucester, NJ monitor 340150002.

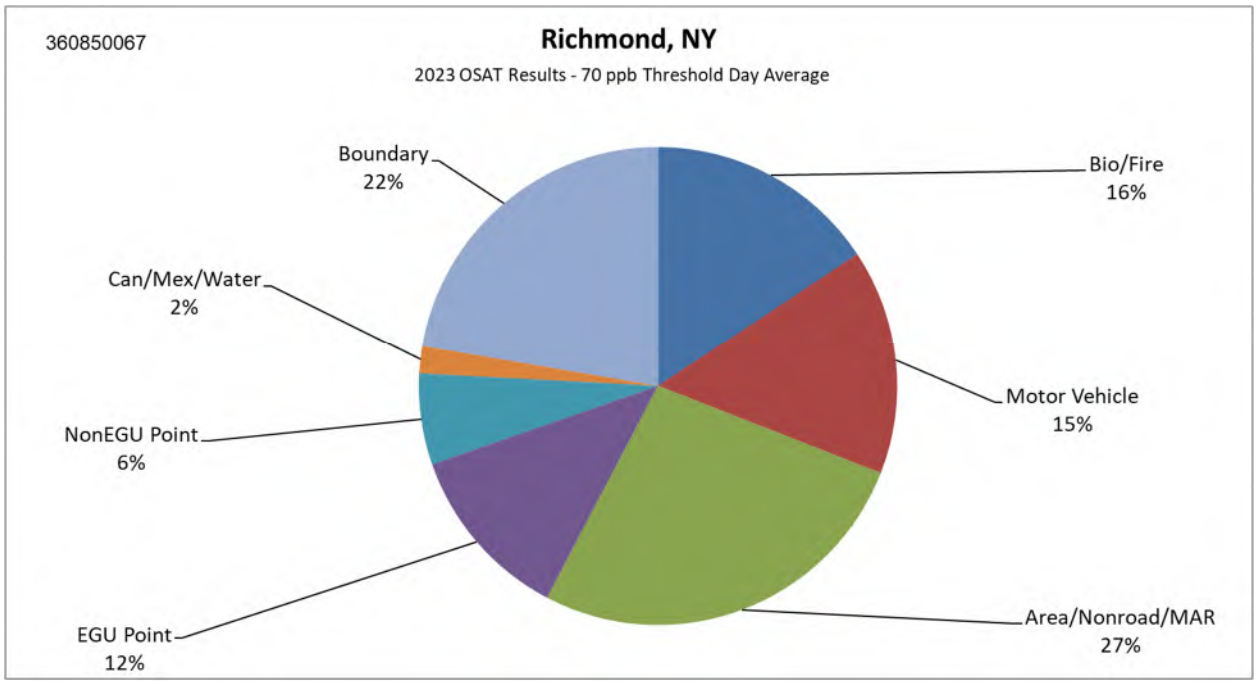


Figure 17. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Richmond, NY monitor 360850067.

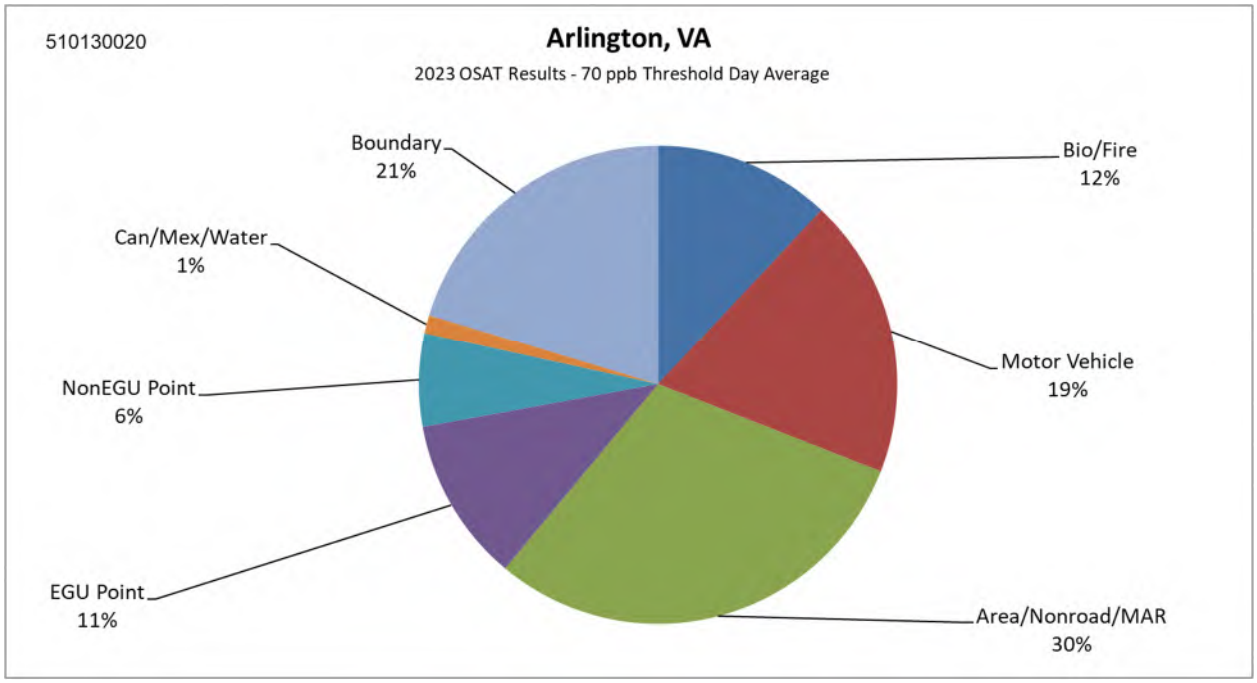


Figure 18. Relative contribution of 2023 emissions by major source sector on ozone concentrations at Arlington, VA monitor 510130020.

10. As part of its disapproval of the OTC recommendation, EPA should find that any residual nonattainment or maintenance concerns in the OTC should be addressed by the OTC with additional controls on local sources.

MOG urges EPA disapproval of the OTC Recommendation. Section 184(c)(4) provides that as part of any such disapproval, EPA is to specify recommendations "concerning equal or more effective actions that could be taken by the commission to conform the disapproved portion of the recommendations to the requirements of [section 184]." The OTC in its response to comments (p. 2) acknowledges that additional NOx and VOC reductions are needed from other sources to achieve attainment. ***This statement is a clear concession that the recommended controls on 18 Pennsylvania EGUs are unsubstantiated as necessary to bring the OTC areas into attainment.*** The OTC contradicts its recommended strategy and the mandate of 184(c) by conceding that other local controls may actually be the sources of reductions necessary to bring those areas into attainment. Residual non-attainment in the OTC is related to data indicating emissions from local sources, including mobile sources and peaking, HEDD, units are impacting attainment. In the following comments, MOG will identify several categories of sources in the OTC control of which would be more effective in addressing any residual nonattainment than is the case with the control measures recommended by the OTC.

a. It has been well-established that residual nonattainment in the OTC is being caused by local sources.

EPA itself has already recognized that the cause of remaining air quality concerns in the Northeast is local sources. EPA's analysis is reflected in a presentation by Norm Possiel of USEPA

OAQPS dated May 14, 2018, which is attached and identified as Exhibit A.

Principal among the conclusions reached in EPA's analysis are the following:

> (1) From an Eastern U.S. perspective, the current ozone levels appear to be more of a "local" problem (i.e., home state and adjacent neighboring states) compared to the larger regional ozone problem for (sic) that was evident back in 2010-2012;
>
> (2) The magnitude of net ozone available for transport into the NE Corridor and the Lake Michigan area from more distant upwind states appears to have declined by 5 to 10 ppb based on 2010-2012 vs 2015-2017 average ranked ozone values;
>
> (3) Ozone levels have also declined substantially at the traditionally high ozone sites in the southern and central portions of the NE Corridor and at the traditionally high ozone sites along Lake Michigan.

EPA's analysis also pointedly demonstrated that despite significant reduction in NOx and ozone transport from the upwind states between 2010-2012 and 2015-2017, there is little resultant change in the design values at the Connecticut monitors[19]. As EPA's presentation acknowledges, the lack of change in monitor data implies that the linkage assumed by transport rules between NOx from upwind states and ozone nonattainment at the relevant monitors is broken despite EPA modeling results showing otherwise. ***EPA's analysis would consequently indicate that the NOx reductions recommended by the OTC will not have the impact on the monitors that would result the measurement of attainment and may not have any effect at all.***

In addressing possible causes for continued high ozone at Connecticut coastal sites in the Northeast despite a reduction of ozone transport of 5-10 ppb, the EPA analysis identified specific source sectors within the Northeast Corridor believed to have a significant impact on nonattainment including the following:

> • The NYC area has higher mobile source emissions than other parts of the OTR, (onroad and non-road sources).
> • A unique mix of local (Tri-State area) contributions from other sources such as EGU, non-EGU point, nonpoint, and commercial marine.
> • "Behind the meter" generation (diesel generators that are not controlled and not in the emissions inventory that operate on hot summer days).
> • Peaking units (HEDD) within the OTR that may operate on mostly high ozone days.

Nowhere in this list does EPA implicate upwind states or any state outside the New York Nonattainment Area as a cause of the continued high ozone at the pertinent monitors.

Additionally, OTC research of air quality impacts of emissions from local sources emphasizes the need to focus upon nearby sources as part of implementation of the current ozone

[19] The same is also true when the 2019 DVs are assessed indicating little resultant change in the Connecticut DVs with emission reductions related to Pennsylvania RACT II.

standards. The September 21, 2018, report of the OTC Stationary and Area Source Committee (attached and identified as Exhibit B) identified many emission units of concern in the Northeast that are in need of controls to reduce their impact on ozone air quality concentrations. Data taken from this report has been incorporated into the following Figure 19 demonstrating that states within the OTC and specifically New York, New Jersey, Connecticut and Maryland have a significant reliance on the use of simple cycle combustion turbines with very high emissions rates.

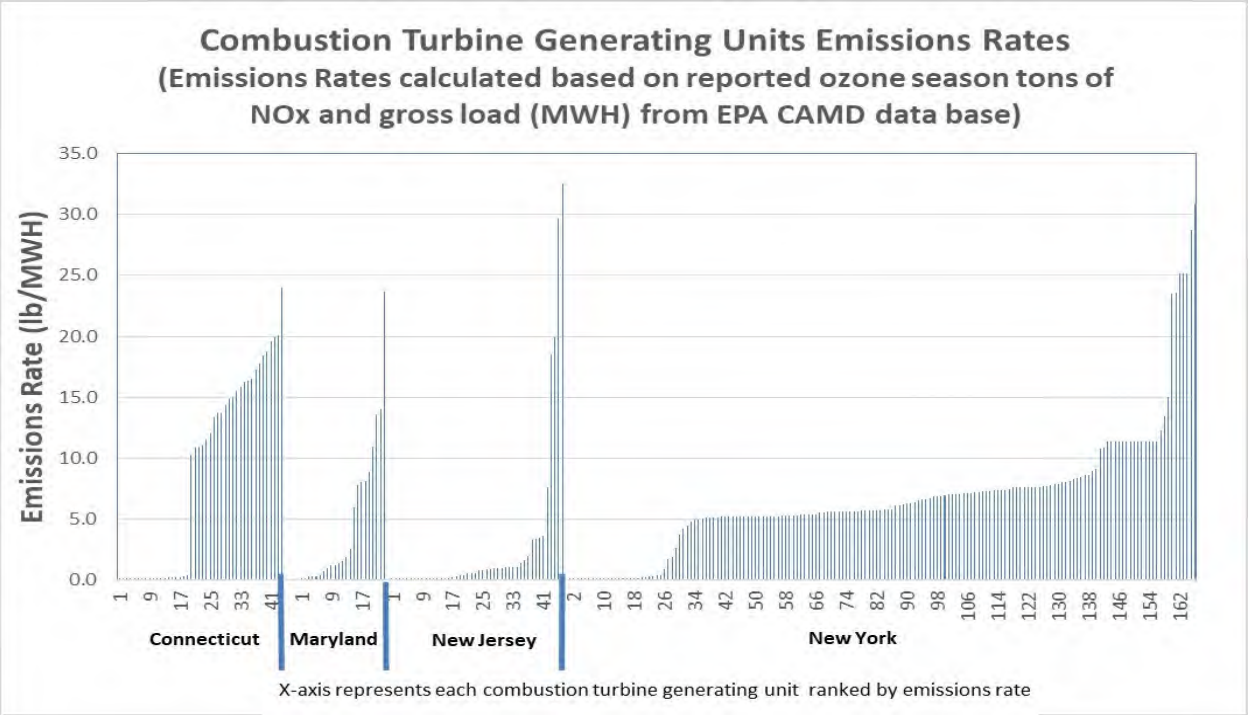


Figure 19. Combustion turbines generating unit emission rates.

Significantly, the September 18, 2018, OTC report reached the following conclusions:

- simple cycle turbines operate on high ozone days;
- control of NOx or replacement of old units is cost effective based on ozone day benefit;
- there are 200 simple cycle units in OTR with very high NOx emissions – approximately 10 times most boiler NOx rates and greater than 100 times most combined cycle NOx rates;
- simple cycle units significantly increase and can dominate EGU NOx emissions on high ozone days.

The D.C. Circuit Court of Appeals itself has specifically noted New York's contributions to the Connecticut monitors as being large. As the Court recognized in *Wisconsin*[20], of the 53.82

[20] *Wisconsin v EPA*, 932 F 3d 303 (D.C, Cir. 2019)

parts per billion of ozone in Fairfield County, Connecticut, that EPA modeling attributed to U.S. sources, "only 3.89 [parts per billion] of that 53.82" came from Connecticut; "[t]he rest … c[a]me from upwind contributions, with a significant share from one State alone (New York, which is projected to contribute 17.22 ppb)." *Wisconsin*, 938 F.3d at 316–17.

EPA also recognized the significance of New York's contribution to the Connecticut monitors in its designation of the New York Metropolitan Area as nonattainment. EPA guidance provides that designated nonattainment areas will include not only the area where the violation occurs but also nearby areas that contribute to that violation. EPA, Area Designations for the 2015 Ozone National Ambient Air Quality Standards, at Att. 3, EPA-HQ-OAR-2018-0170-0107; 42 U.S.C. § 7407(d)(1)(A)(i). As EPA has explained, *New York's own contribution* to Connecticut's air quality problems *caused* New York to be included in that nonattainment area. S*ee* EPA, Responses to Comments at 32, EPA-HQ-OAR-2018-0170-0128. ("Portions of New York were included in the [New York Metropolitan Area] nonattainment area because the EPA determined that those portions were themselves contributing to the air quality problems in Connecticut.").

Recently, to investigate the evolving nature of ozone formation and transport in the New York City (NYC) region and downwind, NESCAUM launched the Long Island Sound Tropospheric Ozone Study (LISTOS)[21]. This study is helping to confirm that a unique feature of Connecticut's chronic ozone problem is pollution transported in a northeast direction out of NYC over Long Island Sound. Using satellite, aircraft, balloon (ozonesondes), marine, and ground-based data collection and analysis methods to probe the New York City pollution plume and its evolution over and around Long Island Sound, the project is demonstrating NYC metropolitan area's large concentration of emission sources, including cars and trucks, ships, industrial boilers, stationary diesel engines, consumer products, power plants, and vegetation are significantly impacting air quality along the Long Island Sound and into Connecticut, Rhode Island, Massachusetts, and beyond.

Figure 20 below is a map recently produced[22] of the ozone and $PM_{2.5}$ AQI levels that were monitored on July 20, 2020. Note the general southwest to northeast orientation of the orange (unhealthy for sensitive groups) and red (unhealthy for all groups) levels exceeding the standards, originating from the NYC area and stretching to Massachusetts.

[21] http://www.nescaum.org/documents/listos
[22] https://gispub.epa.gov/airnow/index.html

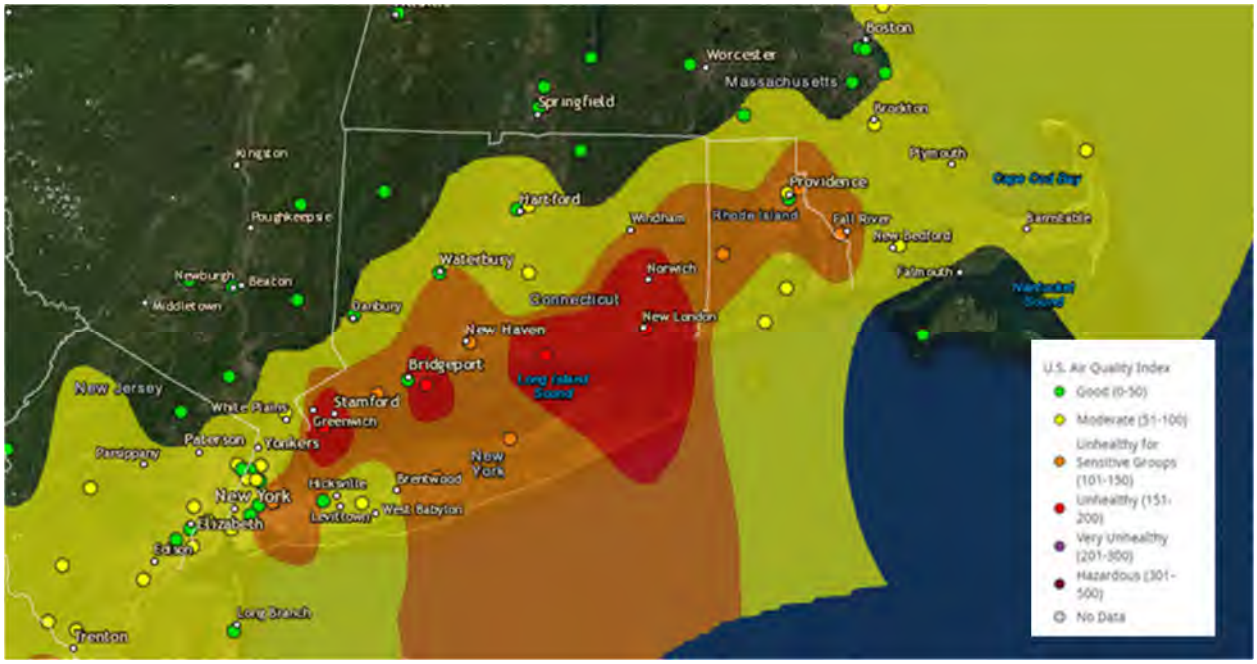


Figure 20. July 20, 2020 ozone and PM 2.5 AQI Index

b. Mobile sources are by far the most significant contributors to the nonattainment and maintenance monitors in the OTC.

In its recent advanced notice of proposed rulemaking for the Cleaner Trucks Initiative (85 Fed. Reg. 3306), EPA states that:

> Although NOx emissions in the U.S. have dropped by more than 40 percent over the past decade, we project that heavy-duty vehicles continue to be one of the largest contributors to the mobile source NOx inventory
>
> and
>
> Reducing NOx emissions from highway heavy-duty trucks and buses is thus an important component of improving air quality nationwide and reducing public health and welfare effects associated with these pollutants, especially for vulnerable populations and lifestages, and in highly-impacted regions.

Similarly, the Mobile Sources Committee of the OTC (whose Acting Chair at the time was the Maryland Air Director) noted in a March 30, 2020 stakeholder webinar[23] that "Heavy Duty Diesel Trucks are one of the major NOx emitting source categories in the OTR -- A transport issue and a local contribution issue."

[23] https://otcair.org/upload/Documents/Meeting%20Materials/OTC-MANEVU%20MSC_Stakeholder_Presentation%20Final%2020200330.pdf

Mobile sources present a significant impact on air quality as illustrated by the following figure for several nonattainment and maintenance monitors in the OTC. EPA recently conducted Anthropogenic Precursor Culpability Assessment (APCA) source apportionment modeling using a recent 2016 modeling platform[24]. These results provide ozone precursor emissions, by source sector, and their relative contribution to modeled ozone concentrations at individual receptors. The following Figures 21 - 25, prepared for the several nonattainment and maintenance monitors in the OTC, demonstrate the significant relative contribution of mobile source (onroad + nonroad) emissions, largely considered to be local source contributions, to ozone concentrations at each receptor. As is seen in these charts, the amount of contribution from the combined mobile source sector can be nearly four times the amount of contribution as the next largest sector. Add the area source sector, also largely considered a local contribution sources, and close to half of each monitor's 2016 ozone concentration is identified.

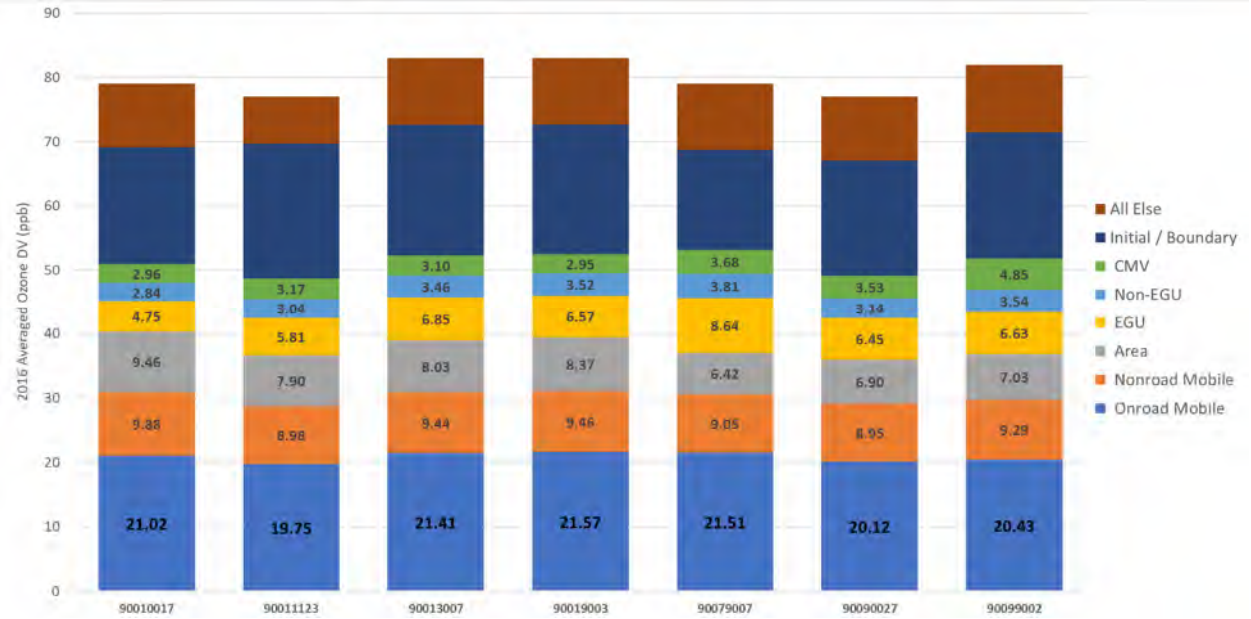


Figure 21. Source apportionment assessment of Connecticut monitors in NY-NJ-CT nonattainment area.

[24] EPA/OAQPS/AQAD – 2016ff Modeling Platform, APCA Source Apportionment Simulation." Data obtained by Alpine Geophysics, LLC in personal communication with EPA/OAQPS/AQAD staff.

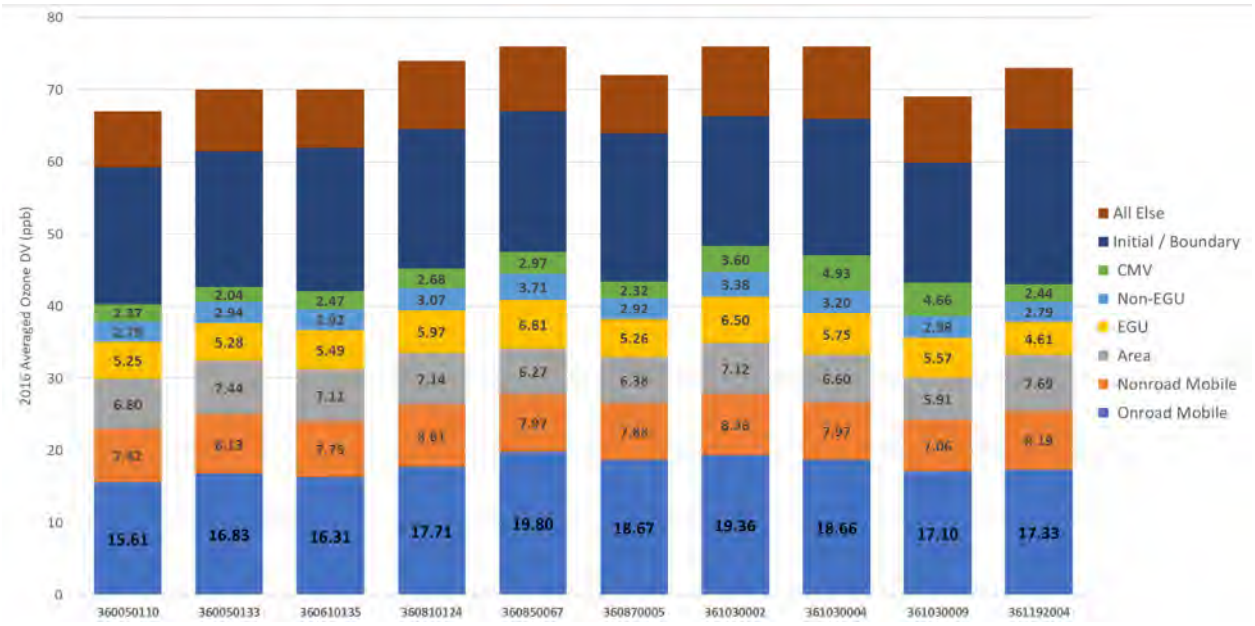


Figure 22. Source apportionment assessment of New York monitors in NY-NJ-CT nonattainment area.

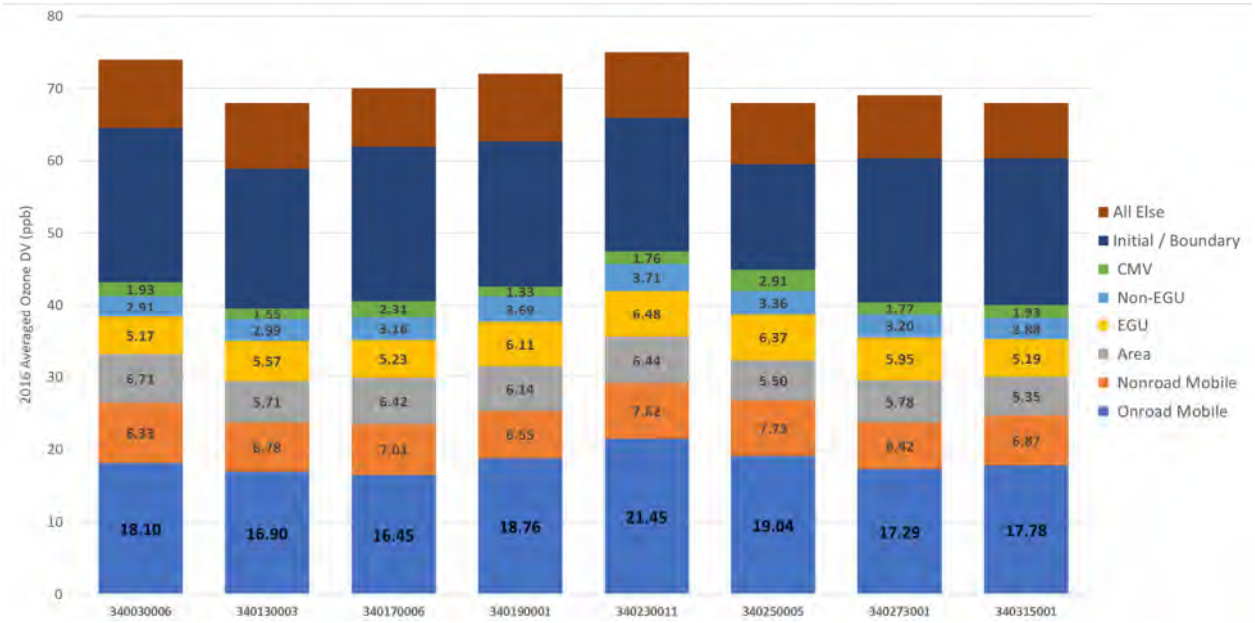


Figure 23. Source apportionment assessment of New Jersey monitors in NY-NJ-CT nonattainment area.

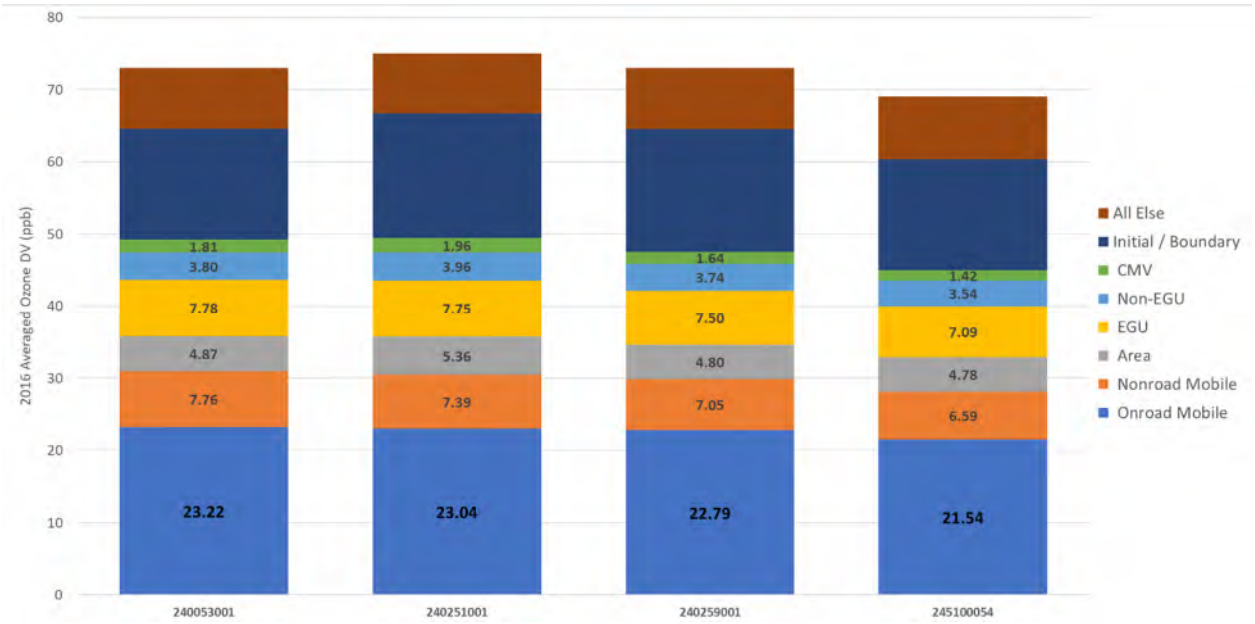


Figure 24. Source apportionment assessment of select Maryland monitors.

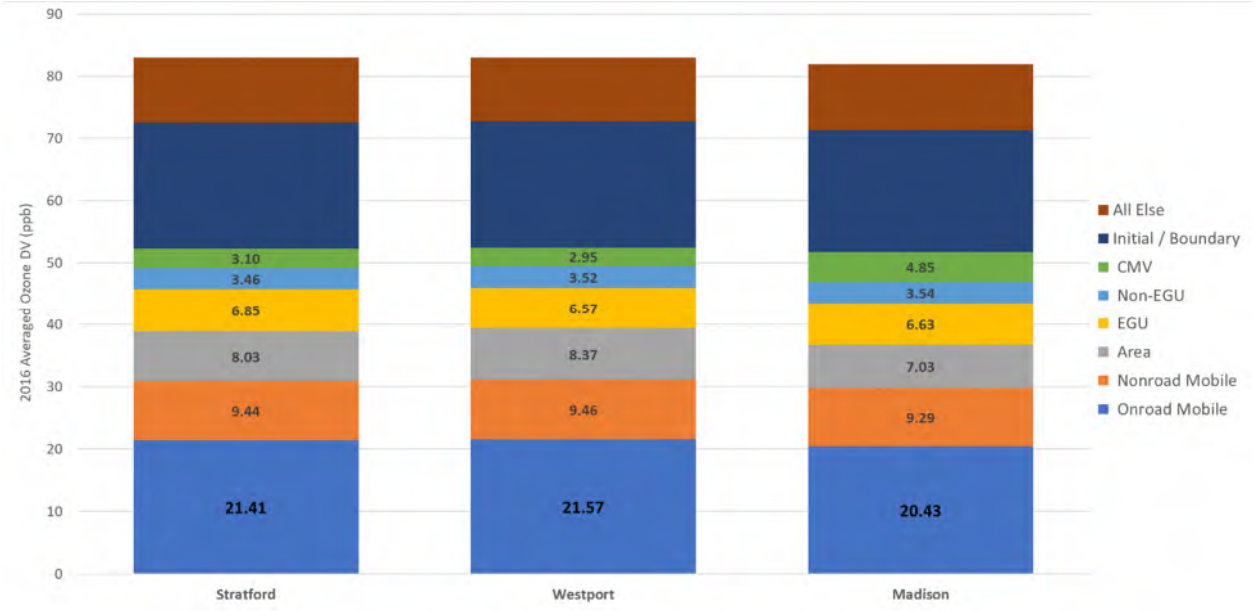


Figure 25. Source apportionment assessment of OTC monitors.

Of additional mobile source interest is the announced EPA Air Enforcement Division ("AED") November 2020 report on the emission effect of 550,000 diesel trucks with defeat devices equivalent to adding 9 million additional trucks to the road. EPA has made "Stopping Aftermarket Defeat Devices of Vehicles and Engines" a National Compliance Initiative for 2020-2023. It has been observed by AED that Class 2b and 3 diesel trucks emitted 30 to 300 times higher NOx and 15 to 40 times higher PM as the result of tampering. *Id.* at 12. The following table indicates excess

NOx emissions due to confirmed and extrapolated tampering from 2009 to 2019 at 570,423 excess NOx (tons).

Table 3. Summary of "Confirmed and Extrapolated" Class 2b and 3 Diesel Vehicles Deleted from 2009 through 2019

Certified Vehicle Emissions Controls Deleted	Number of Deleted Trucks	Excess NO_x (tons) [a]	Excess PM (tons) [a]	Vehicles Added to Road Based on Excess NO_x [b]
EGR+DOC (2003-2006 MY)	72,904	16,770	0	21,016
EGR+DOC+DPF (2008-2010 MY)	129,555	65,114	1,823	184,871
EGR+DOC+DPF+NAC (2007-2012 MY)	150,954	159,001	1,313	2,623,886
EGR+DOC+DPF+SCR (2010+ MY)	204,066	329,539	2,270	6,889,968
Total Deleted Vehicles	***557,478***	***570,423***	***5,407***	***9,719,741***

See Section 4.1.1 for detailed explanations of "confirmed" versus "extrapolated" data.
a—These columns represent the excess emissions anticipated over the remaining service life of the vehicle after tampering occurs.
b—Based on the number of deleted vehicles multiplied by the ratio of NO_x emitted from a deleted vehicle over its entire life compared to NO_x emitted from a vehicle that is never deleted.

AED provides a breakdown by state of excess NOx emissions as the result of truck tampering. Based on observed data from 2009 to 2019, AED reports that New Jersey represents 5,019 (tons) excess NOx emissions, New York represents 13,927 (tons) excess NOx emissions and Connecticut represents 3,062 (tons) excess NOx emissions for a total of over 22,000 (tons) excess NOx for the nonattainment region25. The following AED figure depicts nonattainment and maintenance areas for 2008 ozone NAAQS with shaded areas indicating the number of unique invoices per 100 square miles containing delete parts. *Id.* at 20. This figure illustrates the tampering and therefore NOx emissions within the OTC region as elevated.

Figure 13. Number of Unique Invoices Per 100 Square Miles Containing Delete Parts – Mid-Atlantic Region

[25] By comparison, the total ozone season emissions of all EGUs named in the OTC recommendation is 8,866 tons of NOx/ 86 Fed, Reg. 4052.

Further evidence of mobile source impacts on ozone nonattainment is EPA's work on the Cleaner Trucks Initiative ("CTI"). MOG submitted comments to EPA's CTI Advanced Notice of Proposed Rulemaking on February 20, 2020[26] and subsequently on July 6, 2020[27]. MOG's initial comments on the CTI ANPR offered support for the EPA initiative particularly with regard to air quality modeling data available at the time which demonstrated the significant contribution of mobile sources to ozone concentration in the East. That data confirmed the significant role that mobile sources play in determining air quality. In the later comments, MOG reviewed new air quality modeling (including the MOVES inventory completed by Oak Leaf Environmental, Inc. at the request of MECA and the related air quality modeling performed by Alpine Geophysics, LLC at the request of MOG) that directly assessed how the implementation of a CTI 90% NOx emission reduction scenario is likely to improve air quality in the continental U.S. The following map illustrates the benefit of NOx emissions reductions on ozone attainment with the newer 2015 ozone NAAQS. MOG Supplemental Comments at p. 5.

As shown in Figure 3, applying the 90% NOx emission reduction CTI scenario to the 2028 base year eliminates ozone nonattainment everywhere east of the Rockies and in Denver and leaves only the states of California and Utah with 70 ppb 2015 ozone NAAQS nonattainment areas. Multiple monitors in California and in Salt Lake County, Utah also show modeled attainment with the CTI strategy.

Figure 3. Calculated MDA8 Ozone Design Values (ppb) resulting from CTI strategy run.

c. Emission impact of local sources is significantly greater per ton on ozone concentrations at local monitors than emission from sources in upwind states.

[26] Midwest Ozone Group Comments Regarding Cleaner Truck Initiative; Advance Notice of Proposed Rulemaking; Docket ID No. EPA-HQ-OAR-2019-0055, February 20, 2020 attached and identified as Exhibit C.

[27] Midwest Ozone Group Supplemental Comments on Advanced Notice of Proposed Rulemaking Related to the Cleaner Truck Initiative; Docket ID No. EPA-HQ-OAR-2019-055, July 6, 2020 attached and identified as Exhibit D.

In a report[28] prepared for MOG by Alpine Geophysics, Alpine examined which state's emission have the greatest impact on downwind ozone concentrations on a future year ozone concentration projection. In this report, Alpine has determined, at each monitor, from where and what source category, on a ppb per ton basis, the greatest relative contribution to ozone concentrations are realized. In other words, which source category, and from what state, has the greatest per ton NOx contribution to the monitors' modeled ozone concentrations. Results from Alpine's calculations were then normalized to the results to the maximum individual state/category contributor, so that one can easily identify the greatest ppb per ton by state/source category and have an easy way of determining which categories have greater relative impact compared to all others. In addition to recognizing the usefulness of this impact factor in determining which states and categories are the largest ppb/ton contributors to each monitor, the results may be used in assisting policy makers in the development of control strategies and their relative impact on ozone concentrations at various locations. Resulting monitor-level, relative impact factors for the twenty-one eastern state proposed rule identified nonattainment and maintenance monitors are presented in the tables set forth in that report. Source apportionment modeling updates to this analysis[29] were made with EPA's 2023en modeling platform with results for selected OTC monitors shown in the Figures 26 - 34 below.

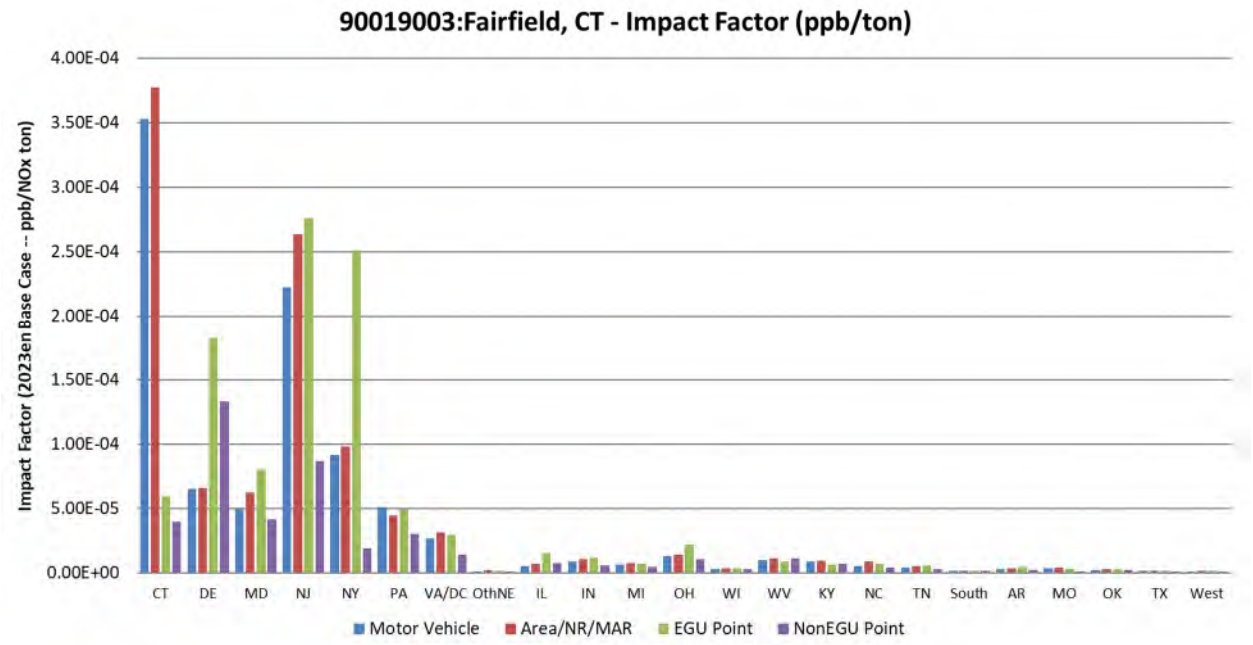


Figure 26. Impact of local sources on Fairfield, CT monitor 90019003.

[28] Relative Impact of State and Source Category NOx Emissions on Downwind Monitors Identified Using the 2017 Cross State Air Pollution Rule Modeling Platform, prepared by Alpine Geophysics January 2016 and attached to these comments and identified as Exhibit E.

[29] 4kei OSAT Modeling Results - Preliminary Report – prepared by Alpine Geophysics March 2019 and attached to these comments and identified as Exhibit F.

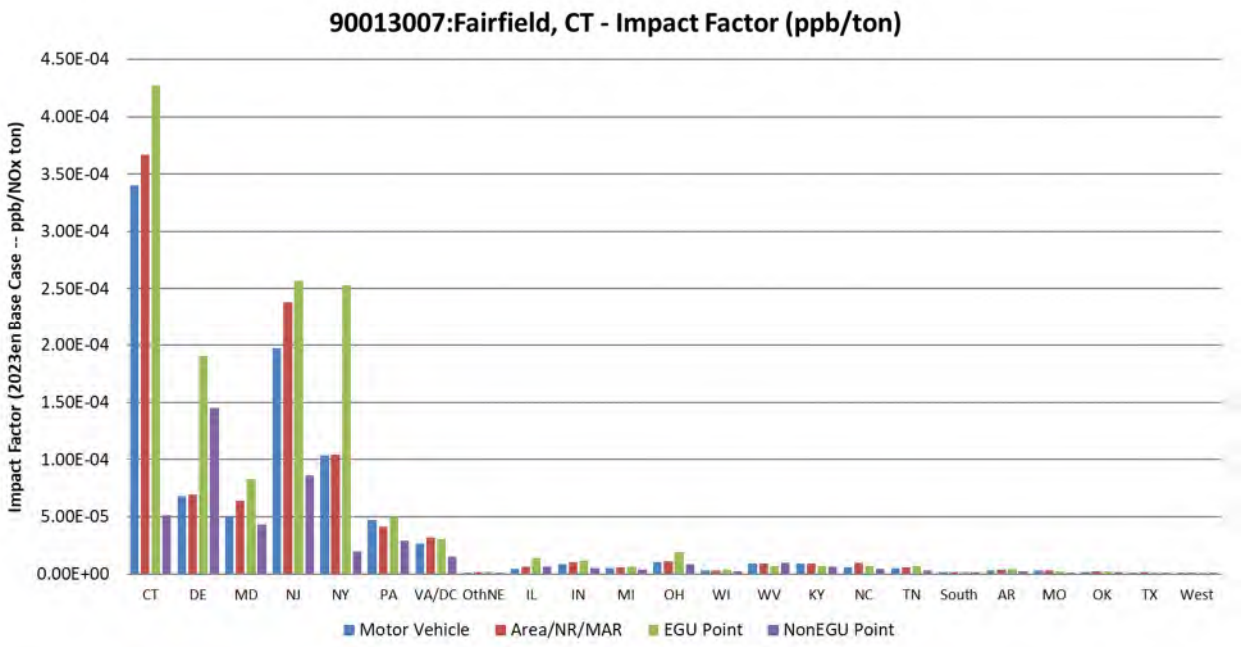


Figure 27. Impact of local sources on Fairfield, CT monitor 90013007.

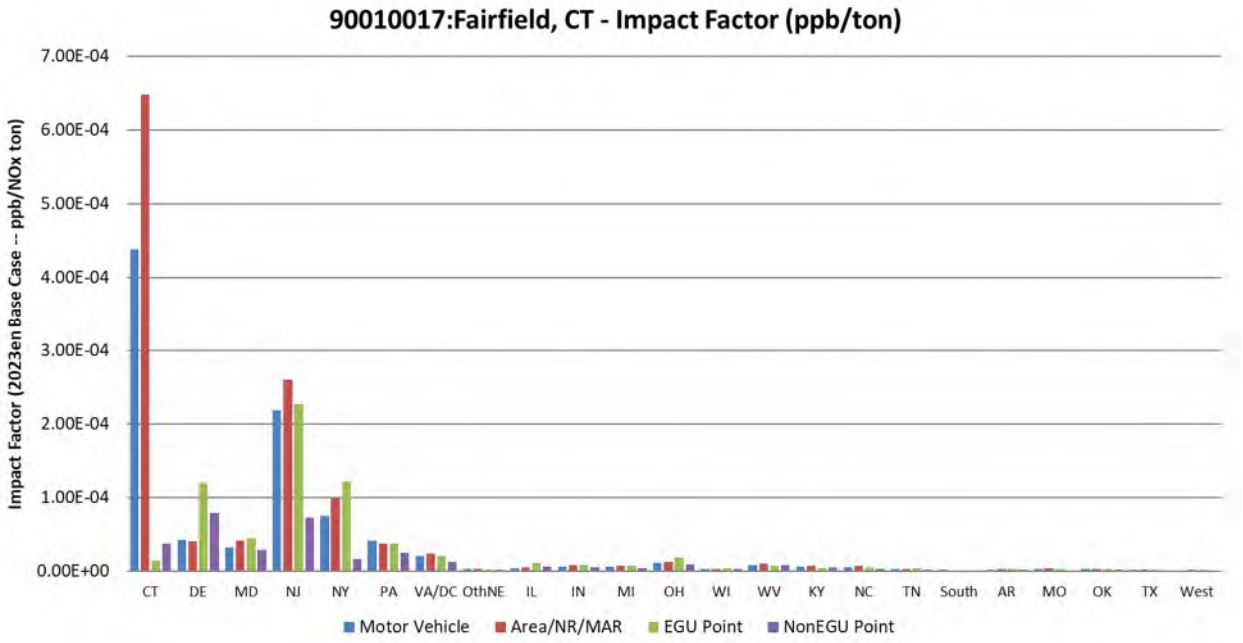


Figure 28. Impact of local sources on Fairfield, CT monitor 90010017.

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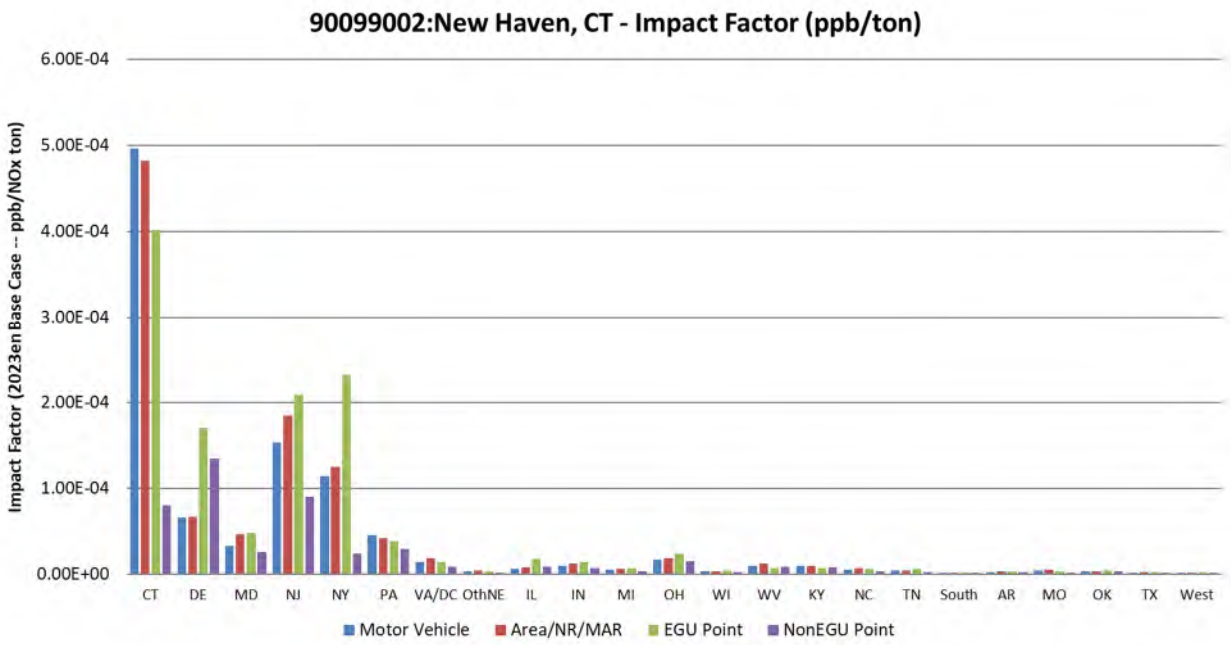

Figure 29. Impact of local sources on New Haven, CT monitor 90099002.

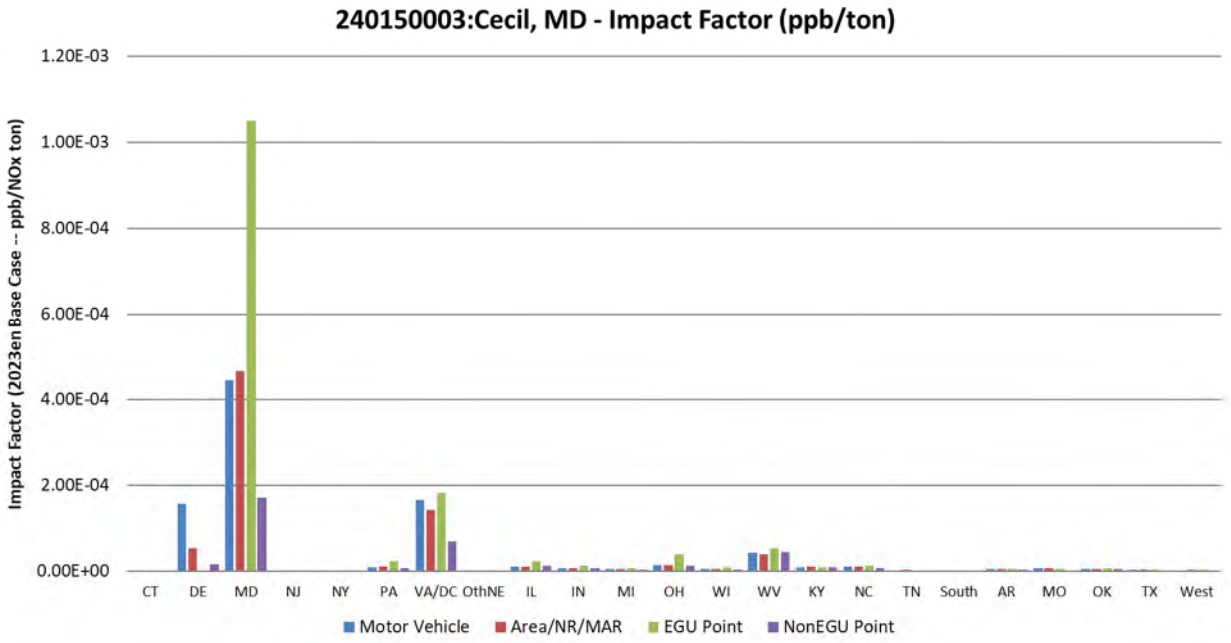

Figure 30. Impact of local sources on Cecil, MD monitor 240150003.

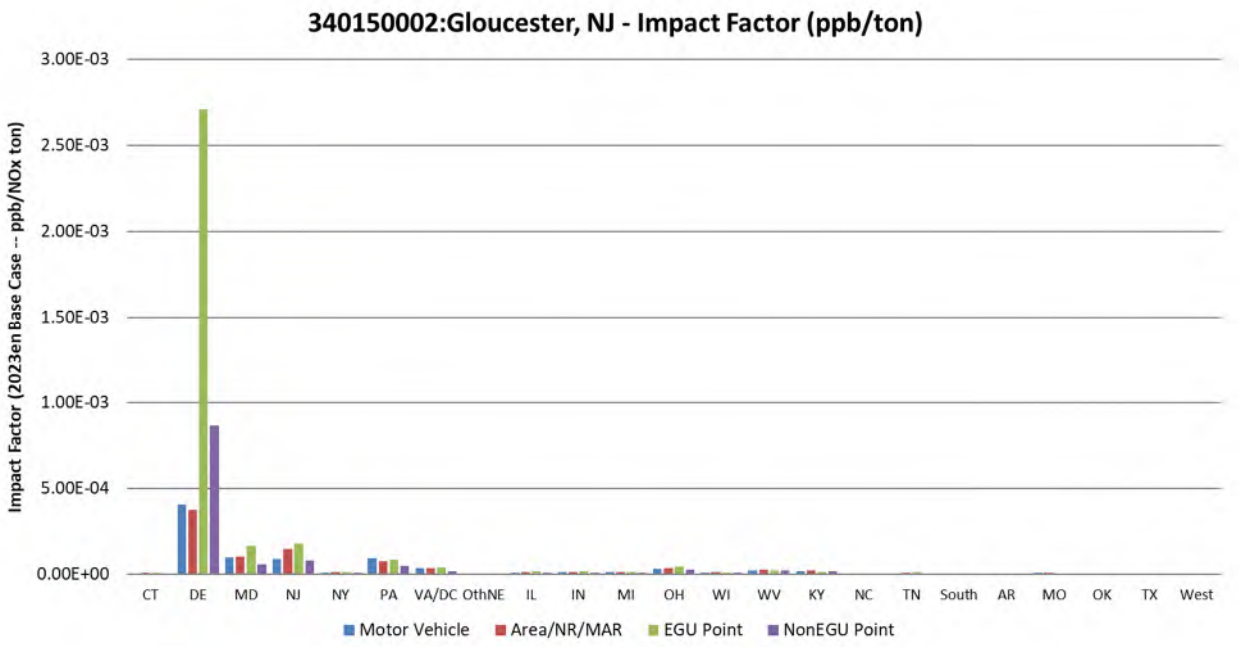

Figure 31. Impact of local sources on Gloucester, NJ monitor 340500002.

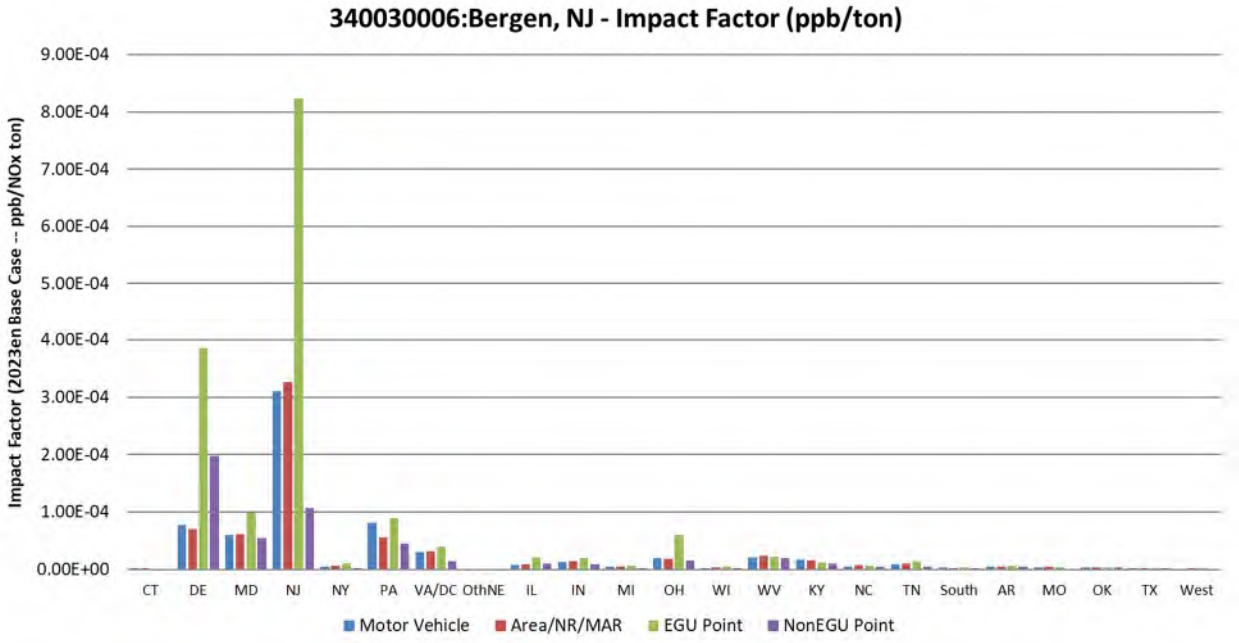

Figure 32. Impact of local sources on Bergen, NJ monitor 340030006.

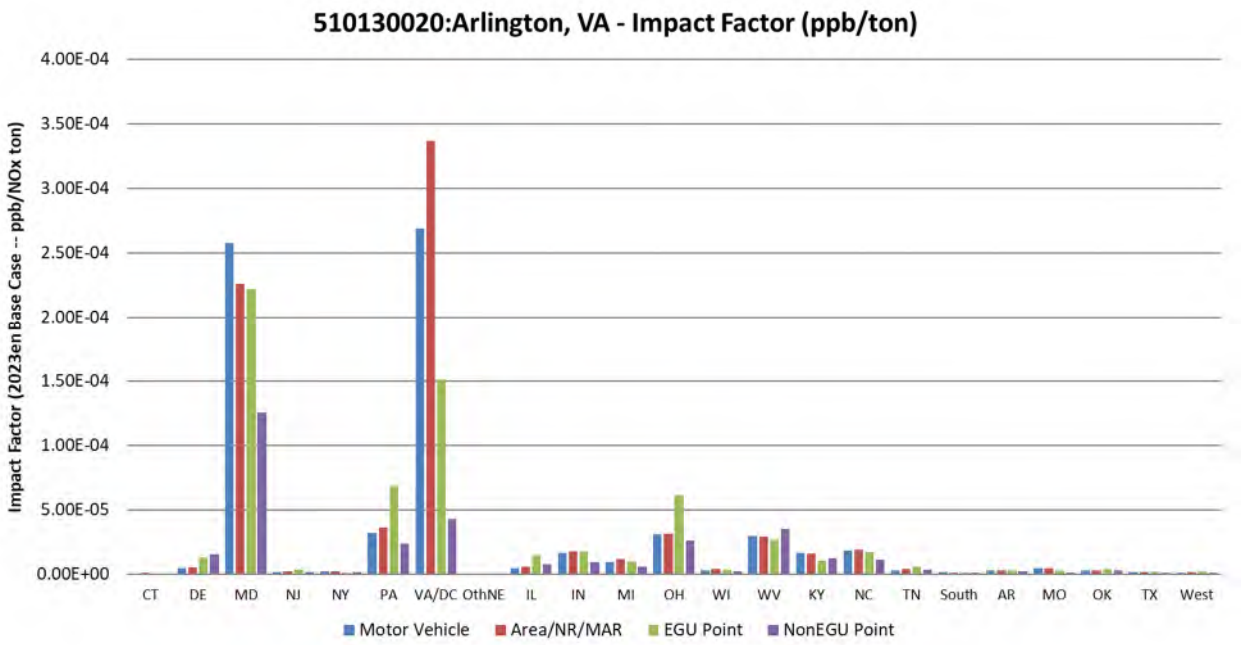

Figure 33. Impact of local sources on Arlington VA monitor 510130020.

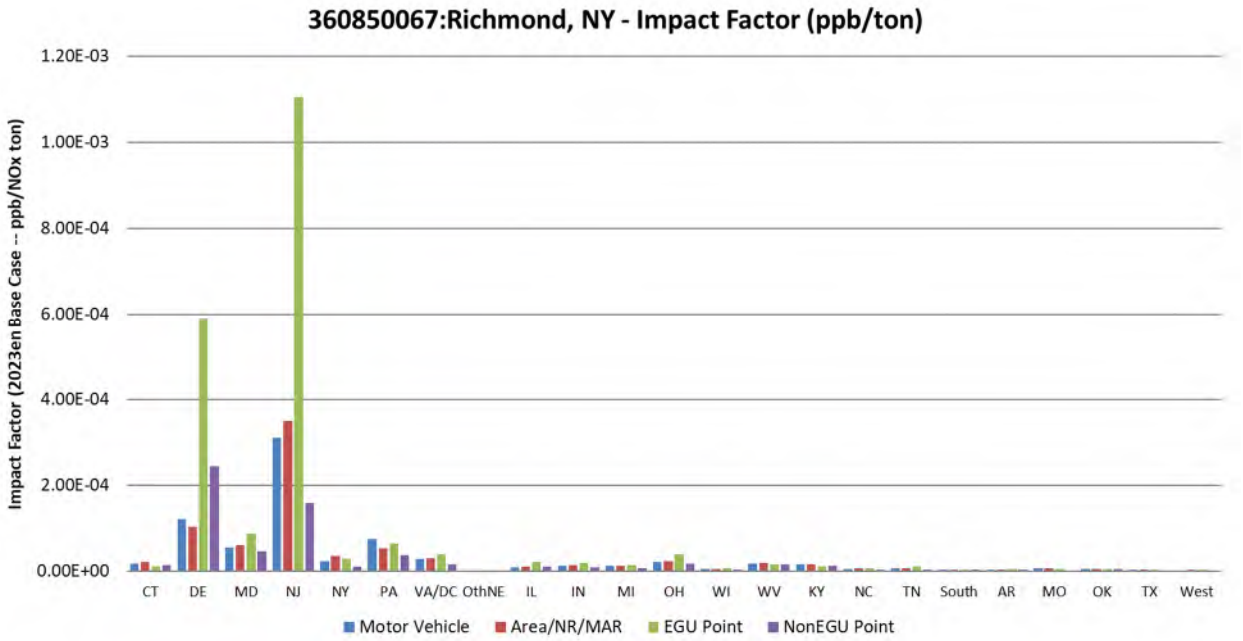

Figure 34. Impact of local sources on Richmond VA monitor 360850067.

As can be seen from these figures, assuming linearity of NOx emissions and ozone concentration changes, the greatest relative contribution impact in ozone concentrations come from emissions and sources located in Connecticut and throughout the Northeast. The chart also shows that the three states with the next greatest potential to improve air quality in Connecticut on a per ton of NOx reduced basis are New Jersey, New York, and Delaware. The chart also shows that even the total EGU emissions from Pennsylvania tends to have relatively insignificant impact

on a per ton basis compared to other categories and states influencing ozone concentrations at these monitors.

This analysis further supports the conclusion that the control of local sources and local transport are key components to addressing residual nonattainment concerns in the OTC.

d. EPA has already identified several significant sources in New York as mitigation techniques that need to be addressed to effectively resolve all downwind nonattainment.

In connection with the Mitigation TSD which accompanied EPA's Revised CSAPR Update (85 Fed. Reg. 68993) EPA identified several local controls that would be necessary for attainment of ozone NAAQS requirements in the OTC. The following comments review three specific categories of sources located in New York that EPA itself has identified as needing additional NOx control.

(1) Simple Cycle Combustion Turbines (SCCT)

In its Revised CSAPR Update Mitigation TSD,[30] EPA correctly notes that on the days conducive to high ozone in the summer, high temperatures also occur resulting in a substantial increase in electricity demand. As noted in the previous section of these comments, this increased demand in the OTC states of Connecticut, New York, New Jersey and Maryland is achieved by using peaking units that have relatively high NOx emission rates. These units are often simple cycle combustion turbines that operate on high ozone days, are cost effective to be controlled or replaced, and can dominate EGU NOx emissions on high ozone days – an analysis that is confirmed by EPA's Mitigation TSD.

In the preamble to the recently final Revised CSAPR Update Rule related to the 2008 ozone NAAQS [31], EPA offered the following response to comment related to the New York SCCT rule:

> EPA notes the New York rule referenced above was finalized in early 2020, but its control measures will phase in during the 2023-2025 period. Therefore, EPA is not finalizing any additional reductions from new control measures at these sources in this final rule, but, pending further analysis, doing so may be appropriate in a future context (e.g., under a different NAAQS).

MOG notes with great interest the NYDEC rulemaking which imposes new controls on these simple cycle combustion turbines located in New York. Beyond the importance of addressing these controls generally, it is significant that these controls have been advanced by NYDEC specifically to address their impact on nonattainment monitors in Connecticut.

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[30] Mitigation TSD, https://www.epa.gov/sites/production/files/2021-03/documents/egu_nox_mitigation_strategies_final_rule_tsd.pdf at page 21 of 28.

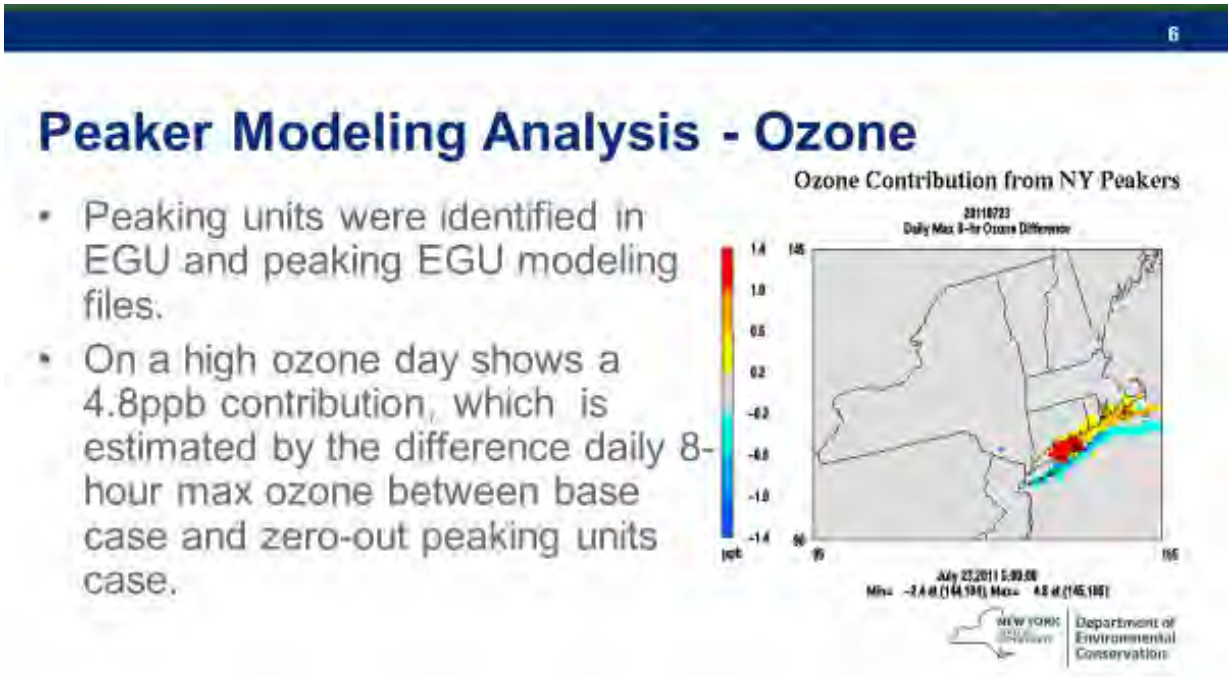
[31] https://www.epa.gov/sites/production/files/2021-03/documents/final_revised_csapr_update_-_prepublication_version_with_disclaimer.pdf, prepublication Federal Register at page 154.

Indeed, NYDEC's SIP revision submitted on May 14, 2020 offers the following comments regarding the basis for the its new rule to impose NOx controls on simple cycle and regenerative combustion turbines during the ozone season[32]:

> New York must fulfill its CAA "good neighbor" obligations which require states to include adequate measures in its state implementation plans (SIPs) prohibiting emissions of air pollutants "in amounts which will… contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to" a NAAQS. In addition, New York must meet the 2008 and 2015 ozone NAAQS, for which the New York-Northern New Jersey-Long Island, NY-NJ-CT area is in nonattainment.[33]

> As stated in the RIS, the proposed regulation is a step towards attaining the ozone standards in the New York City metropolitan area. It is estimated that this regulation could reduce ozone levels at downwind monitors by as much as 4.8 parts per billion on high ozone days.[34]

The following slide taken from a presentation of NYDEC[35] graphically displays the area predicted by its modeling to be impacted by emissions from these sources and confirms the NYDEC Regulatory Impact Statement that these peaking units cause in an increase in ozone concentrations at monitors in neighboring states by 4.8 ppb.



[32] https://www.dec.ny.gov/docs/air_pdf/siprevision2273.pdf
[33] *Id.* Notice of Adoption, NYS Register/December 31, 2019.
[34] *Id.* Assessment of Public Comment, page 47 of 50.
[35] http://www.midwestozonegroup.com/files/New_York_Peakers.pptx

In its May 17, 2019 comments[36] on the New York SCCT rule, the State of Connecticut reinforced New York's admission of responsibility for Connecticut's ozone non-attainment and maintenance concerns as follows:

> "Excessive and unnecessary levels of air pollution from these units contribute to unhealthy ozone levels in Connecticut, particularly on days most conducive to high ozone levels in the region . . .
>
> "Connecticut cannot attain the ozone standards without further emission reductions occurring in the New York metropolitan area. Connecticut currently exceeds the 70 parts per billion (ppb) ozone standard with design values of 82 ppb at the Stratford and Westport monitors.

It is also significant that beyond Connecticut's recognition that non-attainment at its Stratford and Westport monitors are being caused by emissions from these SCCT units, Connecticut's comments are critical of the New York SCCT rule as not assuring that these sources will be prevented from significantly contributing to non-attainment in downwind states. The Connecticut comments go on to state:

> The proposed rule will not begin its first phase until May 2023 and allows for compliance extensions up to four years. Delaying requirements for emission reductions from some of the most inefficient and dirtiest units in the region only helps to assure extended non-attainment of the standards. The timeframe for the implementation of the rule should be condensed to be more consistent with attainment dates for the non-attainment area. (Emphasis added).[37]

Even though NYDEC acknowledges that New York's SCCT units are causing the nonattainment at the monitors in other states, New York has elected to defer the implementation of required controls beyond the attainment date mandated by the Clean Air Act. As EPA has noted in its Revised CSAPR Update Mitigation TSD, the controls established by NYDEC call for subject units to meet a NOx emission rate of 100 ppmvd by May 1, 2023 and a more stringent limit by May 1, 2025. When challenged by those commenting on its SCCT rule to condense the timeline for implementation to be more consistent with the attainment dates for nonattainment areas, NYDEC responded by stating that it deferred the compliances dates for other reasons not related to the applicable attainment date.[38]

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[36] Tracy Babbidge, Chief, Bureau of Air Management, CTDEEP letter to Ona Papageorgiou, NYDEC dated October 7, 2019. https://portal.ct.gov/DEEP/Air/Planning/Ozone/Ozone-Planning-Efforts

[37] *Id.*

[38] 6 NYCRR Subpart 227-3, Ozone Season Oxides of Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines, Assessment of Public Comment, Comments received from February 26, 2019 through 5:00 P.M., May 20, 2019, page 46 of 50. https://www.dec.ny.gov/docs/air_pdf/siprevision2273.pdf

EPA's independent analysis of SCCT units as set forth in the Revised CSAPR Update Mitigation TSD confirms the conclusions reached by both New York and Connecticut, that units of this kind which are operated for only a small number of hours on high energy demand days produce emissions "that cause, help cause or exacerbate exceedances of the NAAQS.[39] EPA's analysis also concludes that:

- In the 12 states addressed in the CSAPR Update Revisions 102 SCCT units had capacity factors below 10% in 2019, but actually produced an average of 13% of their gross generation in high energy demand hours and for 18 of those units electric production in higher energy demand hours accounted for 20% of total generation of those units in 2019.[40]

- Emission rates of SCCT units can be 118 times their respective state averages.[41]

- In New York, these peaker units were found to be "highly emissions-intensive" but "provide relative minimal generation in peak hours.[42]

MOG urges that as a part of its denial of the OTC recommendation, EPA should urge the OTC to call upon New York to properly address these sources by imposing new controls on these sources by the legally mandated attainment date of 2021.

(2) Municipal Waste Combustion (MWC)

It is also significant that EPA has determined that emissions from Municipal Waste Combustion (MWC) "significantly contribute to ozone levels" in the NY-NJ-CT non-attainment area.[43] This conclusion again is particularly significant because EPA has determined in connection with the proposed Revised CSAPR Update that the only non-attainment monitors (and one maintenance monitor) in the OTC in 2021 are indeed in the NY-NJ-CT non-attainment area.

We again direct our comments to the regulatory program of New York with respect to the MWC units, which according to EPA's analysis is less stringent than Connecticut and New Jersey – the other states in the NYMA.[44]

It is obvious that the significance of the emissions from MWC and their impact on the monitors in the OTR makes these sources candidates for the imposition of new controls by the applicable 2021 attainment date.

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[39] Mitigation TSD at p. 16 of 22
[40] *Id.*
[41] *Id*. at p. 17 of 22.
[42] *Id*.
[43] *Id*. at p. 20 of 22
[44] *Id*. at p. 21 of 22

(3) Distributed Generation

In addition to the need for additional controls SCCT and MWC units, MOG urges EPA to consider utilizing its denial of the OTC Recommendation as the opportunity to address new mitigation measures for Distributed Generation (DG) units. While New York has undertaken the regulatory process related to DG units, its approach to addressing the emissions from these sources is inadequate with respect to both the timing and degree of emission reduction control.

On September 4, 2019, New York proposed a revision to 6 NYCRR Subpart 222. Even though the Regulatory Impact Statement in support of that proposal concedes that additional controls on these sources "is a critical component" in the state's strategy to meet the federal 2008 ozone NAAQS with an attainment date of 2021 and even though New York concedes its significant contribution to non-attainment monitors in Connecticut, its proposed rule[45] defers full implementation of control requirements until May 1, 2025 – some four years later than the attainment deadline. MOG again calls on EPA to utilize its denial of the OTC Recommendation to urge that the OTC advance the imposition of these control requirements to address any residual nonattainment in the OTR.

(4) EPA RACT Review

EPA took the occasion of its review of New York's RACT program to recognize the need for New York to take additional measures to properly address all three categories of sources in New York to address attainment of the 2008 ozone standard in the NYMA.[46]

With respect to SCCT units, EPA has found that New York's limits for these units are less stringent than neighboring states. Specifically, in comparison to the new limit of 100 ppmvd, effective May 1, 2023, EPA found that Connecticut had adopted a more stringent NOx limit of 50-75 ppm with a compliance date of June 2018 and 40-50 ppm with a compliance date of June 2023. Anticipating that the New York SCCT rule would be submitted to EPA for approval as a SIP revision, EPA offered the following comment which recognizes the need for more stringent controls on these sources.

> The EPA will fully assess New York's recently adopted Subpart 227-3 for approvability once the rule is submitted to EPA for inclusion into the New York SIP. Inclusion into the SIP of more stringent NOx emission limits for simple cycle turbines located throughout the State, and particularly in the New York portion of NYMA, would provide additional NOx reductions to help attain the 2008 ozone NAAQS.

With respect to Municipal Waste Combustors (MWC), EPA first pointed out that the New York limits were less stringent than those of Connecticut and neighboring states and then offered the following statement:

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[45] NYDEC Parts 222 and 200 Revised Regulatory Impact Statement

[46] 85 Fed. Reg. 8238 (February 13, 2020)

> Inclusion in the SIP of more stringent NOx emission limits for MWCs located in the New York portion of NYMA would provide additional NOx reductions to help attain the 2008 ozone NAAQS.

With respect to Distributed Generation, EPA noted that New York has undertaken the regulatory process to address NOx emissions from those units on HEED and that Connecticut had already done so. EPA encouraged New York to submit its regulation of these sources as a SIP revision "as soon as possible after completion of the regulatory process."

There can be no denying the fact that these New York SCCT, MWC and DG units are causing monitors in the other OTC states to be in nonattainment or maintenance. The New York rule addressing these sources acknowledges the applicable 2021 attainment date related to the 2008 ozone NAAQS but for other reasons elects to defer the specified controls requirements. The practical and legal effect of such a decision is ongoing nonattainment/maintenance status for these monitors. We urge that EPA recognize that imposing controls on these SCCT, MWC and DG units is an appropriate mitigation measure that should be recommended to the OTC as an integral part of EPA's denial of the OTC Recommendation.

11. Application of EPA's "maintenance" guidelines eliminates all remaining maintenance areas.

With respect to any maintenance monitors that may underlie the OTC recommendation, we note that EPA has released guidance that provides a more flexible approach to making a determination about maintenance monitors. Under EPA's memo[47], a modeled demonstration would need to show that using an alternative base year period would lead to a projected future year design value at or below NAAQS. If that demonstration is successful, EPA would expect states to include with their SIP demonstration submission technical analyses showing that:

1. meteorological conditions in the area of the monitoring site were conducive to ozone formation during the period of clean data or during the alternative base period design value used for projections;
2. ozone concentrations have been trending downward at the site since 2011 (and ozone precursor emissions of nitrogen oxide (NOx) and volatile organic compounds (VOC) have also decreased); and
3. emissions are expected to continue to decline in the upwind states out to the attainment date of the receptor.

MOG has applied this analysis to maintenance monitors in OTR with respect to the 2008 ozone NAAQS and has determined that using EPA's modeling and available observed ozone concentrations, all monitors can meet the conditions outlined in EPA's memo. It is therefore not appropriate for the OTC to consider any of the subject monitors as maintenance monitors with respect to the 2008 ozone NAAQS. We urge that the OTC and EPA apply the same guidance to the 2015 ozone NAAQS where we expect as similar conclusion will be reached.

[47] https://www.epa.gov/sites/production/files/2018-10/documents/maintenance_receptors_flexibility_memo.pdf

As a first step in demonstrating whether a monitor should be properly characterized as a maintenance receptor, 2023 ozone design values (and their associated 2021 linear interpolation) using alternate base year concentrations (from the three, three-year time periods between 2014 – 2018) for the nonattainment and maintenance monitors are presented in the following Table 4. These data demonstrate that three of the four monitors have at least one alternate base year period design value that results in an interpolated 2021 maximum design value projection equal to or lower than the 75.9 ppb threshold satisfying this condition.

			2021 Interpolated Ozone Design Value (ppb)				
Monitor	**Site**	**DVb (2016)**	**DVf (Avg)**	**DVf (Max)**	**DVf Max (2014/16)**	**DVf Max (2015/17)**	**DVf Max (2016/18)**
90013007	Stratford	82.0	76.5	77.4	75.6	77.4	76.5
90019003	Westport	82.7	78.6	78.9	78.9	78.9	77.9
90099002	Madison	79.7	74.0	76.1	70.6	76.1	75.2
482010024	Houston	79.3	75.5	77.1	75.2	77.1	74.3

Table 4. Alternate Base Year Projections of 2021 Ozone Design Values (ppb).

The next criteria established in EPA's guidance memo for approving an alternative demonstration of a monitor's maintenance status is that the "meteorological conditions in the area of the monitoring site were conducive to ozone formation during the period of clean data or during the alternative base period design value used for projections."

Meteorological conditions including temperature, humidity, winds, solar radiation, and vertical mixing affect the formation and transport of ambient ozone concentrations. Ozone is more readily formed on warm, sunny days when the air is stagnant and/or when the winds are favorable for transport from upwind source areas. Conversely, ozone production is more limited on days that are cloudy, cool, rainy, and windy (http://www.epa.gov/airtrends/weather.html). Statistical modeling analyses have shown that temperature and certain other meteorological variables are highly correlated with the magnitude of ozone concentrations. The overall extent to which meteorological conditions vary from year-to-year (i.e., interannual variability) depends on the nature of large-scale meteorological drivers such as the strength and position of the jet stream. Inter-annual cycles in the jet stream contribute to interannual variability in the degree to which summertime meteorological conditions are favorable for ozone formation within a particular region. Meteorological conditions that frequently correspond with observed 8-hour daily maximum concentrations greater than the National Ambient Air Quality Standards (NAAQS) are referred to as being conducive to ozone formation.

In general, below average temperatures are an indication that meteorological conditions are unconducive for ozone formation, whereas above average temperatures and mean temperature departures from average are an indication that meteorology is conducive to ozone formation. Within a particular summer season, the degree that meteorology is conducive for ozone formation can vary from region to region and fluctuate with time within a particular region. As presented in Figure 35 below, the temperature and precipitation-related information suggests that ozone season

meteorology was generally conducive for ozone formation in both Connecticut and Houston in all years between 2014 and 2018, the years in which each of the 3-year design values used in maintenance monitor determination were calculated.

As an additional supporting case for flexibility in identifying maintenance monitors, EPA guidance provides that a state would need to show that "ozone concentrations have been trending downward at the site since 2011". Table 5 below presents 3-year ozone design value data calculated for each receptor from yearly 4th high values and a calculated slope between 2011 and the most recently EPA-approved design value for 2019. For all monitors listed, negative slope, indicating the necessary downward trends, are demonstrated which satisfies the required condition of trending downward concentrations.

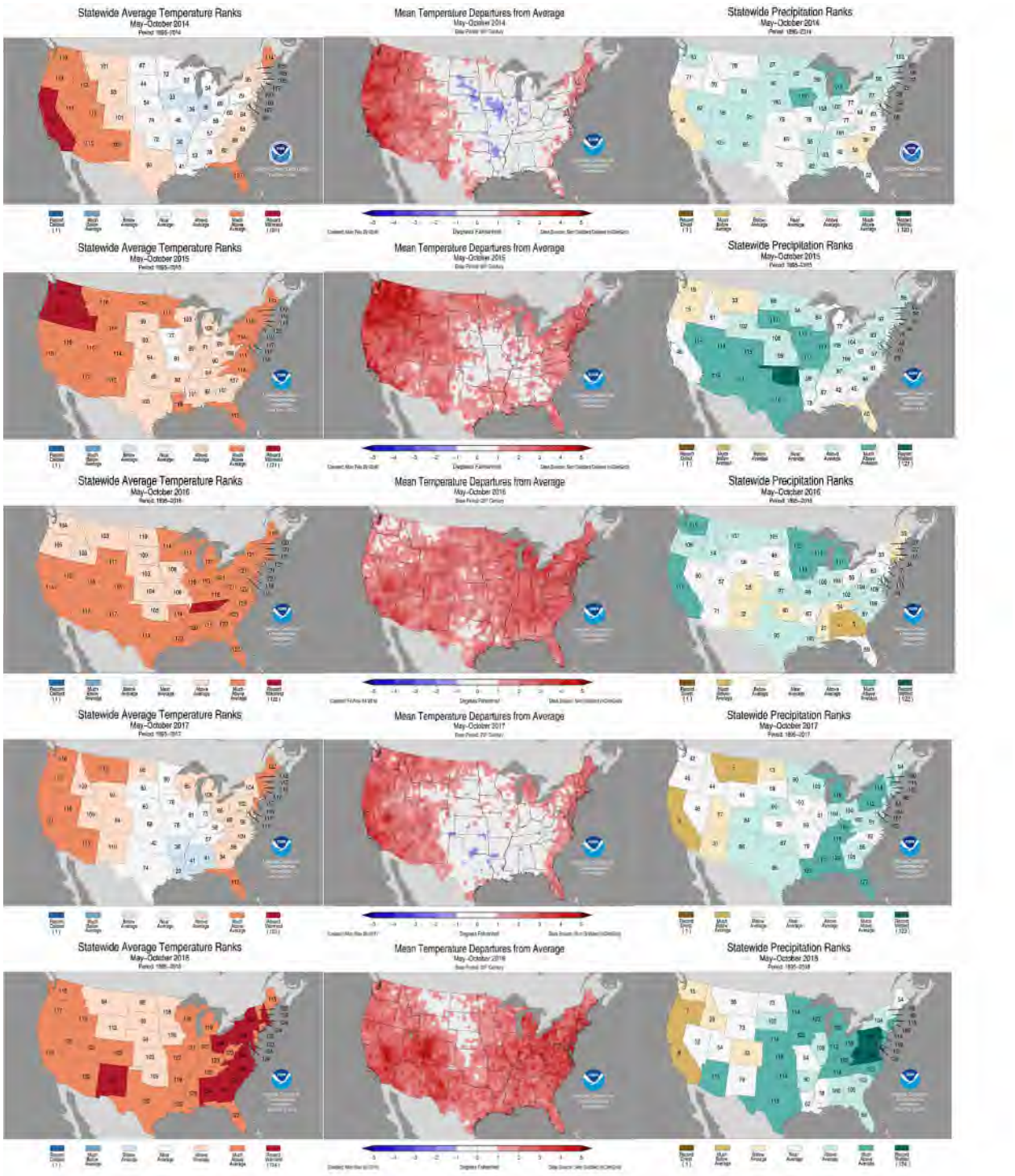

Figure 35. Statewide Ozone Season Temperature Ranks, Temperature Departure from Average, and Precipitation Ranks, 2014-2018, for Years Used in Maintenance Design Value Calculations.

				3-Year Ozone Design Value (ppm)									
State	**County**	**Site ID**	**Local Site Name**	**2009-2011**	**2010-2012**	**2011-2013**	**2012-2014**	**2013-2015**	**2014-2016**	**2015-2017**	**2016-2018**	**2017-2019**	**Slope (2011 to 2019)**
Connecticut	Fairfield	090013007	Stratford	0.079	0.085	0.089	0.084	0.083	0.081	0.083	0.082	0.082	-2.00E-04
Connecticut	Fairfield	090019003	Westport	0.079	0.085	0.087	0.085	0.084	0.083	0.083	0.082	0.082	-1.17E-04
Connecticut	New Haven	090099002	Madison	0.081	0.087	0.089	0.081	0.078	0.076	0.082	0.081	0.082	-5.50E-04
Texas	Harris	482010024	Houston	0.083	0.081	0.077	0.072	0.079	0.079	0.081	0.078	0.081	-3.33E-05

Table 5. 3-Year Ozone Design Values (ppb) and Slope Calculation (2011-2019).

EPA's October 19, 2018 guidance memo offers states the option of using an alternative method of identifying maintenance monitors to be addressed in their Good Neighbor SIPs. The analysis presented here illustrates that when current data is applied to the various criteria identified by EPA, states are provided with the basis for requesting EPA to determine that it is no longer necessary to consider any of the subject monitors as maintenance monitors.

Accordingly, MOG urges EPA to apply its own guidance for determining maintenance monitors and therefore to conclude that an additional factor supporting denial of the OTC Recommendation is that there are no remaining maintenance monitors to be addressed in the OTR.

12. EPA has consistently rejected application of EGU NOx limits on daily basis and should do so here.

MOG opposes any suggestion that it would be appropriate to impose EGU NOx limits on any time scale shorter than the ozone season.

EPA has consistently rejected the suggestion that it should use a daily emission limit instead of, or in addition to, the seasonal trading program. As it stated in the proposal of the CSAPR Update rule this rejection is based on the fact that "NOx ozone season trading programs are effective at reducing peak ozone concentrations."[48]

No party in the *Wisconsin* litigation challenged EPA's decision to use a seasonal cap. As noted, the *Wisconsin* court found "no basis to set aside the challenged determinations" on modeling and implementation choices. *Id.* at 320. The court upheld EPA's assumption that turning on idled "Selective Catalytic Reduction" (SCR) controls on a seasonal basis would reduce an EGU's emissions to 0.10 lbs/mmBtu. *Id.* at 320. The EGU related emissions reduction strategy in the CSAPR Update rule was upheld by *Wisconsin*, and therefore the continuation of that strategy in the revised CSAPR Update is reasonable.

EPA has repeatedly considered and rejected the assertion that short-term limits are necessary to prevent NOx emission control units from being under-utilized on days with high ozone.[49] Based on reported emissions data, EPA found in its denial of the Maryland 126 petition that this was not typically occurring. Instead "[catalytic]-controlled units generally operated with lower emission rates during high generation hours, suggesting [catalytic controls] generally were in better operating condition – not worse, let alone idling-during those days/hours." EPA concluded that "the data do not support the notion that units are reducing [catalytic control] operation on high demand days." [50] Not injecting ammonia during high load periods is not something that is done. When in market or at high loads, the high heat input without ammonia injection would result in excessive allowance use during periods when ammonia injection provides a more economical means to account for emissions. NOx control at higher loads is cheaper than allowances except when allowances are extremely inexpensive.

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[48] See 81 Fed. Reg. at 74,523 and Response to Comments to the Proposed Action on Section [7426(b)] Petitions from Delaware and Maryland.
[49] 83 Fed. Reg. at 50,466-7.
[50] *Id.*

In its rejection of the merit of short-term emission limits, EPA has assessed the lack of technical support for the assertion that EGUs are not operating their controls at all times therefore justifying the need for a unit-specific rates. EPA's analysis included a review of the ozone-season emission rates from coal-fired units equipped with SCR and found that, based on 2017 emissions with the CSAPR Update in place, 261 of 274 units had ozone-season emission rates below 0.2 lb/mmBtu indicating they were likely operating their controls throughout the ozone season but especially during HEDD periods or other periods of high electric demand. EPA examined whether units turn off or turn down controls on high electricity demand days (HEDD) when demand for electricity is high (perhaps as a result of hot ozone-conducive weather conditions resulting in additional cooling demand). EPA concluded that, if there was any effect at all, that units typically operate their controls more-effectively on HEDD than other days. EPA also observed that for units that are cycling their SCRs (turning them down or off during low demand times), these units typically operated the SCR during the afternoon when ozone formation was most conducive. Consequently, EPA found that units are consistently operating their SCRs throughout the ozone season. [51]

It is noteworthy that the D.C. Circuit upheld EPA's assessment of the merit of applying NOx limits on an ozone season basis in the litigation involving the appeal by Delaware and Maryland of EPA's denial of their Section 126 petitions. In upholding EPA's position, the D.C. Circuit offered the following discussion and holding:

> Since the EPA bases attainment on daily concentrations, not seasonal emissions, Delaware argues that the EPA should likewise control daily emissions to avoid the possibility that sources will idle their controls on days with high electricity demand. We did not have the occasion to consider the Update Rule's reliance on a seasonal cap in *Wisconsin*, since no party challenged that decision there. But as the EPA explained here, there appears to be "very little difference" between "NOx rates for EGUs for hours with high energy demand" and "seasonal average NOx rates." Response to Delaware and Maryland, 83 Fed. Reg. at 50,466. In other words, Delaware's concern makes sense but has not been observed in practice. The EPA also noted that there may be valid operational reasons not to operate catalytic controls on particular days, "e.g., to avoid damaging or plugging of the [control] or taking a forced outage where a breakdown leaves the unit unavailable to produce power." *Id.* at 50,466-67. As a result, that a source ends up emitting above 0.20 lb/mmBtu on a particular day is not necessarily evidence of a failure to optimize. The EPA's explanation was reasonable.[52]

Finally, it should be noted that the challenge to ozone seson limits was most recently rejected by EPA in the preamble to the final Revised CSAPR Update Rule where EPA offered the following response to comment:[53]

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[51] *Id.*

[52] *Maryland v. EPA*, 958 F.3d 1185at 208 (D.C. Cir. 2020)

[53] Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, Prepublication Version, https://www.epa.gov/sites/production/files/2021-03/documents/final_revised_csapr_update_-_prepublication_version_with_disclaimer.pdf at page 218.

Comment: Some commenters asserted that implementation of emission reductions through a state-level, seasonal emissions budget program with trading flexibilities is not sufficient to ensure that reductions are realized on high ozone days when they are most needed.

…

Response: EPA is finalizing the implementation of required emission reductions through the same ozone season trading program structure successfully used in prior CSAPR rules, CAIR, and the NOx Budget Trading Program associated with the 1998 NOx SIP Call. These trading programs have been demonstrated to be highly effective at achieving emission reductions.

…

Further, EPA finds there to be environmental benefits associated with a mass-based trading program that controls units' total amounts of emissions. This creates an incentive structure resulting in lower-emitting sources tending to operate more than dirtier units. Moreover, EPA's implementation program provides – through an allowance price – an incentive to optimize emissions performance as much as possible. This approach not only encourages units to achieve the rates assumed in the budget-setting process, but to perform at even better rates where better performance can be achieved at a cost lower than the allowance price. an implementation mechanism that provides a unit-specific emission rate would not incentivize the unit to perform better than its rate requirement. Thus, the trading program encourages controls to not only operate on high electric demand days, but it could provide a unit additional incentive (through its allowance price) to outperform an equivalent emission rate assumption implemented through a unit-specific rate requirement.

EPA should include as one of the reasons for the disapproval of the OTC Recommendation, the conclusion that the request to impose such limits on a daily basis is unsupported and has been previously rejected by and EPA and reviewing Courts.

13. While Maryland proposes that additional control measures be mandated for the sources it has named, the Maryland petition does not offer written assessment of whether such measures are necessary to bring Maryland and the NYMA into attainment by the dates mandated in the CAA.

CAA Section 184(c)(1) makes it explicitly clear that any recommendation for additional control measures must be based upon a determination that such measures "are necessary to bring any area in such region into attainment by dates provided by this subpart." Attachment 1 of the Maryland petition requested that the OTC recommend additional control measures be put in place by 2020 without offering any written assessment of ozone air quality or justification for specifying the attainment of ozone NAAQS requirements.

While Attachment 6 to the Maryland petition provides reference to air quality modeling, that data relates to 2023 and does not address attainment. Instead, the Maryland modeling assesses the differences that may exist in 8-hour average ozone concentrations when its alternative control measures are modeled. The Maryland analysis fall short by not relating those modeling results to attainment. As a result, the petition fails to demonstrate that any additional control measures are

necessary to achieve attainment. Neither does Maryland address whether maximum reductions included in Maryland's 2023 modeling are greater than would be needed to eliminate potential residual nonattainment. The petition also fails to address the necessity of imposing new controls on the selected power plants as opposed to mobile and other local sources in the Northeast. Mobile and other local sources have a much greater impact on air quality measured at monitors in Maryland and the Northeast, warranting specific analysis by Maryland.

Additionally, the relative contribution findings proffered by Maryland in its petition present questionable assumptions. Maryland Department of the Environment (MDE) contracted with the University of Maryland, College Park (UMD) Department of Atmospheric & Oceanic Science to perform photochemical sensitivity modeling to demonstrate that emissions from all Pennsylvania coal fired EGUs significantly contribute to ozone formation in Maryland. The sensitivity modeling completed was intended to show the maximum ozone concentration reductions/ozone benefits if Pennsylvania coal-fired EGUs were to be required to maximize the emissions reductions that could be accomplished using existing SCR and SNCR controls. The sensitivity analysis compared "current maximum allowable emission" at Pennsylvania coal-fired EGUs and some coal refuse-fired EGUs to previously achieved emission rates associated with MDE's "optimization" scenario during the ozone season. Significantly, this modeling included a series of assumptions that call into question the relative contribution findings of the analysis.

a. UMD's 2023 EGU base case assumes no PA EGU has any control associated with the CSAPR Update rule and uses mass percentage adjustments to simulate compliance with CSAPR in other states.

UMD's documentation indicates that "[t]his scenario consists of starting from the GAMMA 2023 base case (Scenario 5r) and optimized SCR/SNCR controls at all PA coal fired EGUs and some coal refuse-fired and compliance with the CSAPR Update at all other EGUs. The ozone season NOx mass was adjusted down based on the mass percentage adjustment calculated for each of the units to reflect 2023 ozone season NOx rates consistent with (1) compliance with the CSAPR Update and (2) optimization of SCR/SNCR controls for the sources named in this petition. This scenario is representative of PA EGU coal units and some coal-refuse-fired EGUs operating their SCR or SCNR controls at optimized rates."

Instead of using EPA or ERTAC-based projections of CSAPR application directly, UMD calculates mass adjustment factors by which to apply to individual units in their modeling domain. It is also unclear from provided documentation whether UMD captures CSAPR controls at all applicable facilities or states in their modeling domain. More importantly, however, they fail to simulate and compare the application of CSAPR in Pennsylvania to their "optimized" case to determine the relative difference in emissions or adjusted air quality resulting from the application of the promulgated rule. Results presented in the analysis presume no application of CSAPR constraints to Pennsylvania units and therefore likely overestimate the impact of the optimization sensitivity.

b. UMD's 2023 base case assumes a 50% NOx reduction in mobile sources associated with their Science Framework[54].

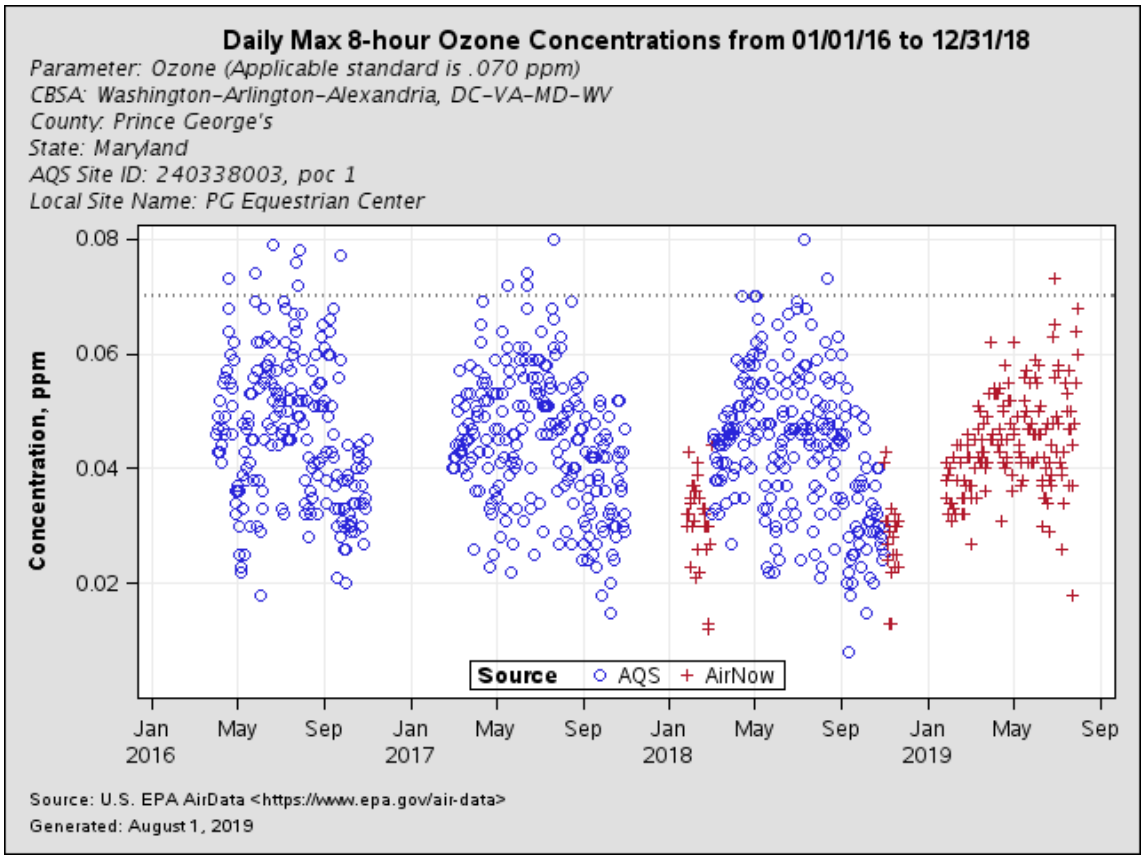
UMD has applied a 50% NOx reduction in mobile source emissions consistent with findings published elsewhere. However, MOG has not found that at any time the EPA, nor the OTC, has indicated acceptance of this adjustment in their regulatory modeling efforts. As a result of this downward adjustment in the largest contributing source category to ozone concentrations in the northeastern states, ***UMD is artificially lowering the relative contribution of mobile sources to ozone concentrations at downwind receptors. Consequently, all other source sectors will have a greater relative contribution, including EGUs from Pennsylvania, resulting from no other reason than this subjective, speculative scalar adjustment.***

c. UMD fails to demonstrate that differences in maximum 8hr average ozone (MDA8) calculated for any receptor occurs on days when the model predicts exceedances of the 2008 or 2015 ozone NAAQS.

Notwithstanding the emission estimation limitations in the 2023 modeling cases noted above, in the additional attachments presented with the petition, UMD documents results of their sensitivity analysis using maximum ozone benefits (in delta ppb) between the base case (no CSAPR control in PA) and optimized case. What is not detailed in these attachments, however, is whether any of these maximum benefits occur at receptors predicted to be in nonattainment of the 2008 or 2015 ozone NAAQS with their 2023 platform, or whether any of these maximum benefits occur on days when ozone is predicted to exceed either standard or whether the back trajectory associated with the high impact days actually passes over any of the Pennsylvania facilities named in the petition.

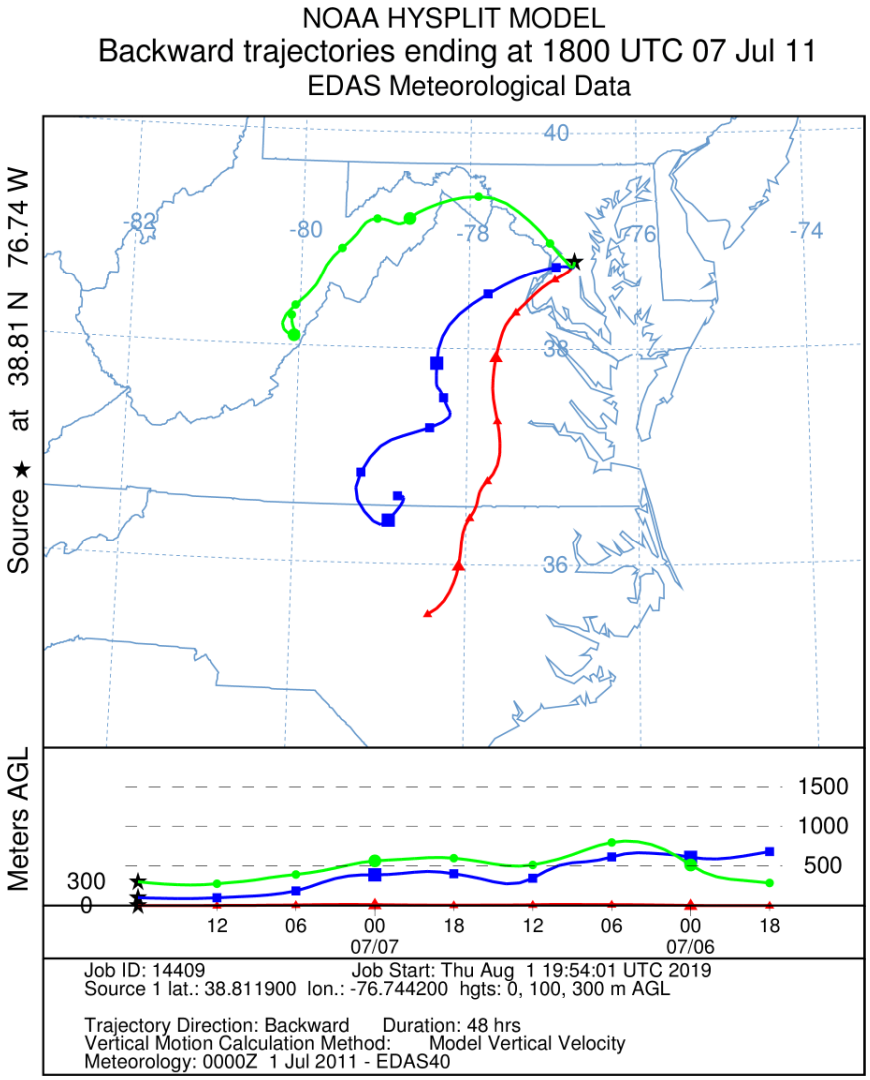
As an example, we reviewed the PG Equestrian Center, MD monitor (240338033) with a noted maximum ozone benefit of 4.9 ppb on July 7th. We first note that this receptor has a recent downward trend in MDA8 values between 2016 and current observations. As demonstrated in the figure below, observations of MDA8 values above the 70 ppb threshold have decreased in number for the past four years. The current 3-yr design value for this receptor (2016-2018) is 71 ppb with a 2018 4th high maximum value of 70 ppb.

[54] Anderson, D. C., et al. (2014), Measured and modeled CO and NOx in DISCOVER-AQ: An evaluation of emissions and chemistry over the eastern US, *Atmospheric Environment*, 96, 78-87.



Even assuming, however, that future year projections of ozone indicate this monitor to be in nonattainment of either the 2008 or 2015 NAAQS, we investigated whether emissions from Pennsylvania coal-fired or coal refuse-fired facilities would have had an impact on the day when the greatest benefit was calculated. To do this, we created a 48 hour back trajectory from the receptor site to determine if ozone concentrations on July 7th would have been the result of "excess daily NOx" from the day, or even two days, before the maximum impact date.

The plots below indicate that not only did the July 7th 48 hour back trajectory not pass over any coal-fired facility in Pennsylvania, it clearly did not pass over any Pennsylvania facility at all because of the southwesterly influence from over northern Virginia, North Carolina, and parts of West Virginia and Maryland.



These findings alone indicate that the impacts calculated for this receptor are not the result alone of the sensitivity configurations run by UMD and that a source apportionment style (OSAT) analysis would be better suited to determine state or facility level impacts at downwind monitors.

III. Conclusion.

The Midwest Ozone Group appreciates the opportunity to offer comments on the OTC recommendation and to demonstrate the legal and technical flaws of the OTC recommendation. The OTC recommendation not only fails to satisfy statutory requirements it also fails to recognize that source of any residual nonattainment in the OTC is being caused by local sources and not those Pennsylvania sources named in the recommendation. We urge EPA to disapprove the recommendation and in doing so to find that local sources are the cause of the residual nonattainment that is the focal point of the OTC recommendation.