

ORAL ARGUMENT NOT YET SCHEDULED
IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF MARYLAND, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY and ANDREW
WHEELER,

Respondents.

Consolidated Case Nos.
18-1285, 18-1287 and
18-1301

On Petitions for Review of Final Action of the
United States Environmental Protection Agency

MOTION FOR LEAVE TO INTERVENE AS PETITIONERS

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Pursuant to Federal Rule of Appellate Procedure 15(d) and Circuit Rule 15(b), the States of New York and New Jersey and the City of New York (collectively, Proposed Intervenors) hereby move for leave to intervene in support of the petitioners in these consolidated cases, for the reasons set forth below:

1. These consolidated cases petition this Court for review of the final action by respondent United States Environmental Protection Agency and Acting Administrator Andrew Wheeler (collectively, EPA) titled “Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland,” published in the Federal Register at 83 Fed. Reg. 50,444 on October 5, 2018 (the Petitions Denial).

2. The Proposed Intervenors have several compelling interests in challenging EPA’s Petitions Denial. First, had EPA granted the Maryland and/or Delaware section 126(b) petitions, sources upwind of the Proposed Intervenors would have been required to control and reduce their emissions of ozone precursors to the significant benefit of the downwind Proposed Intervenors, who continue to struggle to attain and maintain compliance with the 2008 and/or 2015 ozone national ambient air quality standards (NAAQS). *See* Declaration of Robert Sliwinski,

P.E., dated December 4, 2018 (Sliwinski Decl.) ¶¶ 61-62; Declaration of Sharon C. Davis, dated November 29, 2018 (Davis Decl.) ¶¶ 1, 16-17.

3. Second, EPA's heightened standard for section 126(b) petitions will make it more difficult for the Proposed Intervenors to utilize section 126(b) petitions to remedy interstate transport of harmful pollution. In particular, proposed intervenor New York submitted a section 126(b) petition to EPA in March 2018 naming all of the upwind sources covered by the petitions submitted by Delaware and Maryland. Sliwinski Decl. Ex. A. EPA has yet to take action on New York's petition, which EPA is likely to judge by the same unlawful standards and interpretations of section 126(b) that EPA has applied here. Sliwinski Decl. ¶ 63.

4. Third, certain of the Proposed Intervenors have been engaged in regulatory and judicial proceedings related to regional control of ozone emissions. Such proceedings include submission of a petition to expand the Ozone Transport Region (denial of which was based in part on EPA's purported preference for the use of other, independent statutory tools, such as section 126(b)—the use of which it has denied here), and litigation in this Court challenging such denial. Certain of the Proposed

Intervenors also participated in the regulatory comment period preceding EPA's final action here during which they strongly objected to EPA's proposed Petitions Denial. Sliwinski Decl. ¶¶ 64-66.

5. All petitioners in the consolidated actions, Maryland, Delaware and the non-governmental organizations, have consented to intervention by the Proposed Intervenors. Respondent EPA has taken no position and has reserved its right to oppose.

Statutory Background

6. In 1970, Congress significantly restructured federal air pollution law, creating the modern Clean Air Act, because of "dissatisfaction with the progress of existing air pollution programs." *Alaska Dep't of Envtl. Conserv. v. EPA*, 540 U.S. 461, 469 (2004) (quoting *Union Elec. Co. v. EPA*, 427 U.S. 246, 249 (1976)). In particular, Congress authorized EPA to set nationwide air quality standards for a number of air pollutants, including ozone. *See, e.g.*, 42 U.S.C. § 7409(a); *Save Our Health Org. v. Recomp of Minn., Inc.*, 37 F.3d 1334, 1336 n.2 (8th Cir. 1994). These standards, known as National Ambient Air Quality Standards, or NAAQS, "define [the] levels of air quality that must be achieved to protect public health and welfare." *Alaska*, 540 U.S. at 469

(quoting R. Belden, Clean Air Act 6 (2001)). For each pollutant covered by a NAAQS, EPA classifies each county across the nation as one of the following: (1) an attainment area, if the level of the pollutant in the air is at or below the standard; (2) as a nonattainment area, if the level of the pollutant exceeds the standard; or (3) unclassifiable, if insufficient data is available to determine if the pollutant meets or exceeds the standard. 42 U.S.C. § 7407(d)(1)(A) & (B). EPA may also classify areas as “maintenance,” meaning they have previously been in nonattainment but have reached attainment by a specified date and are thereafter required to maintain compliance with the relevant standard.

7. States are primarily responsible for ensuring that their air quality meets the NAAQS. *Id.* § 7407(a). Davis Decl. ¶ 4. Within three years of promulgation or revision of a NAAQS, the Act requires each state to submit a state plan consisting of air pollution regulations or other requirements to achieve and maintain compliance with the NAAQS. *See* 42 U.S.C. § 7410(a)(1) (“a plan which provides for implementation, maintenance, and enforcement of [NAAQS]”); *Alaska*, 540 U.S. at 469-70.

8. EPA promulgated a revised NAAQS for ozone on March 12, 2008. 73 Fed. Reg. 16,436 (Mar. 27, 2008) (2008 ozone NAAQS). EPA

again revised the NAAQS for ozone in 2015, promulgating a more stringent standard. 80 Fed. Reg. 65,292 (Oct. 26, 2015) (2015 ozone NAAQS). Both standards remain in effect.

9. Ozone is a gas that forms when other atmospheric pollutants, known as ozone “precursors,” such as nitrogen oxides (NO_x) and volatile organic compounds (VOCs), react in the presence of sunlight. *Id.* at 65,299. EPA has found significant negative health effects in individuals exposed to elevated levels of ozone, including coughing, throat irritation, lung tissue damage, and aggravation of existing conditions, such as asthma, bronchitis, heart disease, and emphysema. *Id.* at 65,302-11. Exposure to ozone has been linked to premature mortality. *Id.* Some sub-populations are particularly at risk from exposure to ozone pollution, including children, the elderly, and those with existing lung diseases, such as asthma. *Id.* Sliwinski Decl. ¶ 15; Davis Decl. ¶¶ 5-6.

10. Section 126(b) of the Clean Air Act, 42 U.S.C. § 7426(b), provides that “[a]ny State or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the

prohibition of section 7410(a)(2)(D)(ii)¹ of this title or this section. Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition.”

11. Section 126 cross-references section 110(a)(2)(D)(i), the Act’s “good neighbor” provision, which requires that state plans implementing the NAAQS for a criteria pollutant—here, the 2008 ozone NAAQS and 2015 ozone NAAQS—must “contain adequate provisions . . . prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will . . . contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard.” 42 U.S.C. § 7410(a)(2)(D)(i).

12. If a state fails to submit a plan that satisfies its obligation under the “good neighbor” provision, the Act requires EPA to fill a backstop role by issuing a federal plan for that state that prohibits

¹ The reference to section 7410(a)(2)(D)(ii) is a scrivener’s error; the correct cross-reference is to section 7410(a)(2)(D)(i). *See Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1044 (D.C. Cir. 2001).

interstate transport of air pollution that will significantly contribute to nonattainment in, or interfere with maintenance by, any other state with respect to any NAAQS. *Id.* § 7410(c)(1).

13. New York and New Jersey have each established stringent state implementation plans with some of the strictest air quality control regulations in the country. Sliwinski Decl. ¶¶ 7-8, 21-23; Davis Decl. ¶ 12. The City of New York has implemented additional emissions control programs within its jurisdiction. Sliwinski Decl. ¶ 23. Nonetheless, due in large part to emissions of pollutants from sources in upwind states that the wind carries into downwind areas, New York and New Jersey have had difficulty attaining and/or maintaining the 2008 and 2015 ozone NAAQS, including in the multi-state New York City metropolitan area and for New Jersey, in the multi-state Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD Nonattainment Area (Philadelphia metropolitan area). Proposed Intervenors' citizens and residents have suffered from unsafe levels of ozone pollution. Sliwinski Decl. ¶¶ 24-31; Davis Decl. ¶¶ 12, 14.

Section 126(b) Petitions Submitted by Delaware and Maryland

14. In July 2016, Delaware brought four petitions under section 126(b) identifying four respective sources or groups of sources upwind from the state that contributed significantly to nonattainment or interfered with maintenance of the 2008 or 2015 ozone NAAQS in Delaware. In November 2016, Maryland submitted a single 126(b) petition naming 36 upwind sources that contributed significantly to nonattainment or interfered with maintenance of the 2008 ozone NAAQS in Maryland.

15. After delaying action for over a year on these petitions, EPA proposed to deny them all in a single notice of proposed rulemaking published in the Federal Register on June 8, 2018. *See* 83 Fed. Reg. 26,666 (Jun. 8, 2018).

16. Numerous parties commented on the proposed denial, including proposed intervenors States of New York and New Jersey. *See* Documents No. EPA-HQ-OAR-2018-0295-0074 (Comments of New York State Department of Environmental Conservation), EPA-HQ-OAR-2018-0295-0066 (Comments of New York State Office of the Attorney General), and EPA-HQ-OAR-2018-0295-0071 (Comments of New Jersey

Department of Environmental Protection), *available at* <http://www.regulations.gov>.

17. Despite substantial critical comments, EPA published its final Petitions Denial on October 5, 2018. 83 Fed. Reg. at 50,444.

Procedural History of These Actions

18. On October 15, 2018, Maryland filed a petition for review of the Petitions Denial, initiating Case No. 18-1285. *See* ECF Doc. No. 1755727.

19. On October 19, 2018, a coalition of non-governmental organizations filed a separate petition for review, initiating Case No. 18-1287. *See* ECF Doc. No. 1756674. On the motion of the Clerk of the Court, on October 23, 2018, Cases Nos. 18-1285 and 18-1287 were consolidated.

20. On November 5, 2018, Delaware filed a separate petition for review, initiating Case No. 18-1301. *See* ECF Doc. No. 1758853. On the motion of the Clerk of the Court, on November 6, 2018, Case Nos. 18-1285, 18-1287 and 18-1301 were consolidated. *See* ECF Doc. No. 1758862.

21. The Proposed Intervenors seek to intervene in all consolidated cases as petitioners. *See* Circuit Rule 15(b).

Direct and Substantial Interests of the Proposed Intervenors, Standing
and Grounds for Intervention

22. Federal Rule of Appellate Procedure 15(d) requires that a party moving to intervene set forth its interest and the grounds for intervention. Intervention under Rule 15(d) is granted where the moving party's interests in the outcome of the action are direct and substantial. *See, e.g., Yakima Valley Cablevision, Inc. v. FCC*, 794 F.2d 737, 744-45 (D.C. Cir. 1986) (intervention allowed under Rule 15(d) because petitioners were "directly affected by" agency action); *Bales v. NLRB*, 914 F.2d 92, 94 (6th Cir. 1990) (granting Rule 15(d) intervention to party with "substantial interest in the outcome"). The decision to allow intervention is guided by practical considerations and the "need for a liberal application in favor of permitting intervention." *Nuesse v. Camp*, 385 F.2d 694, 700, 702 (D.C. Cir. 1967).

23. The Proposed Intervenors have standing and direct and substantial interests in the outcome of the litigation with respect to reductions in ozone precursor emissions from common upwind sources through enforceable controls and mechanisms requested in the section 126(b) petitions. Proposed Intervenors suffer harms that would be redressed by granting the petitions for review in the consolidated cases.

24. For decades, the Proposed Intervenors have struggled to meet or maintain the NAAQS for ozone in certain areas, including in the multi-state New York-N. New Jersey-Long Island, NY-NJ-CT Nonattainment Area and for New Jersey, the Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD Nonattainment Area. To remedy this, Proposed Intervenors have imposed stringent standards on electric generators (power plants) and other emissions sources, including motor vehicles, that are more stringent than those required by the federal government and many other states. But those measures have been insufficient due in large part to pollution from upwind sources. *See* Sliwinski Decl. ¶¶ 7-8, 21-23; Davis Decl. ¶¶12-14.

25. In addition, EPA based its Petitions Denial in part on a finding that upwind sources were already operating certain emissions controls required by a prior EPA ozone transport rulemaking, the Cross-State Air Pollution Rule Update (CSAPR Update), 81 Fed. Reg. 74,504 (Oct. 26, 2016), namely running installed Selective Catalytic Reduction (SCR) controls. *See* 83 Fed. Reg. at 50,464-68. However, data in the record and comments submitted by proposed intervenor State of New York, among others, demonstrated this was not the case, and that therefore

granting the section 126(b) petitions was necessary to ensure downwind areas are receiving the full relief from upwind ozone pollution to which they are entitled.

26. EPA's grant of the section 126(b) petitions would result in significant reductions in pollutants from upwind states that would improve air quality in the jurisdictions of the Proposed Intervenors and materially assist their efforts to attain and maintain the 2008 and 2015 ozone NAAQS, including in areas that do not currently meet those standards. Sliwinski Decl. ¶¶ 32, 61-62; Davis Decl. ¶¶ 16-17.

27. Proposed Intervenor State of New Jersey is also directly affected by the Petitions Denial because nine counties in southern New Jersey are part of a multi-state ozone NAAQS nonattainment region that includes counties in Delaware and Maryland. 40 C.F.R. § 81.331 (listing New Jersey counties in the "Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD" nonattainment area). New Jersey's attainment efforts in this shared area would benefit directly from any upwind reductions mandated by EPA in response to Delaware and Maryland's petitions. Conversely, EPA's denial of the petitions means that, to attain the ozone NAAQS, New Jersey, Delaware, and Maryland collectively bear the

unfair burden of further reducing in-state emissions to compensate for unchecked upwind pollution. *See* 42 U.S.C. § 7511a(j)(1) (requiring states with shared nonattainment areas to coordinate attainment efforts). Davis Decl. ¶¶ 16-17.

28. Due to the health and welfare effects from ozone pollution, including from the sources named in the section 126(b) petitions, Proposed Intervenors also suffer additional harms that would be significantly redressed by a grant of the section 126 petitions submitted by Delaware and Maryland.

29. Because EPA has consistently delayed and denied use of the various statutory remedies provided under the Act to fully address interstate transport of ozone pollution, downwind areas such as New York and New Jersey continue to struggle with attainment and maintenance of the 2008 and 2015 ozone NAAQS, and the citizens and residents of significant areas of New York and New Jersey, including in the New York City metropolitan area and Philadelphia metropolitan area, continue to breathe air with ozone levels exceeding these standards.

30. As a result, residents of New York and New Jersey face increased health and welfare risks from elevated levels of ozone pollution,

injuring them and Proposed Intervenors. These health effects result in large medical costs and also contribute to missed school and work, which results in lost productivity and other economic costs borne by the Proposed Intervenors. Sliwinski Decl. ¶ 58; Davis Decl. ¶ 6; see Ozone Transport Comm'n, *Analysis of the Potential Health Impacts of Reducing Ozone Levels in the OTR Using BenMAP* 9-12, 16-23 (Oct. 12, 2017), available at <https://otcair.org/upload/Documents/Reports/BenMap%20Rollback%20Analysis%20171012%20Final.pdf>; see 49 N.J.R. 1762(a), 1769 (July 3, 2017) (“attaining the 2015 eight-hour (70 ppb) ozone NAAQS in New Jersey by 2025 would eliminate about 6,840 asthma attacks in children each year and would reduce hospital admissions and emergency room visits, absences from school and work and restricted activity days among children and adults with asthma and other respiratory diseases.”) (citing EPA’s “Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone,” EPA-452/R-15-007 (Sept. 2015)).

31. In addition, Proposed Intervenors own significant areas of public lands, whose natural communities are threatened by ozone concentrations that exceed the NAAQS. Sliwinski Decl. ¶ 59; see U.S.

Forest Service, U.S. Dep't of Ag. & N.J. St. Forestry Services, *New Jersey's Forests 2008: Resource Bulletin NRS-59* 37-39 (Nov. 2011), available at https://www.nrs.fs.fed.us/pubs/rb/rb_nrs59.pdf (ozone injury recorded on more than half of biosites in New Jersey; ozone induced stress will have greatest impact on ozone-sensitive species).

32. Had EPA granted the section 126(b) petitions from Maryland and Delaware, requiring the named sources to reduce their emissions of ozone precursors, it would reduce or avoid these additional harms.

33. The Proposed Intervenors also have a direct and substantial interest in the outcome of the litigation with respect to EPA's application of the proper standard for determining whether to grant or deny a section 126(b) petition. Sliwinski Decl. ¶¶ 63-65.

34. In its Petitions Denial, EPA found that where a state had an approved state or federal implementation plan in place for a particular NAAQS, then EPA would have no basis to find that a source in that state "emits or would emit" in violation of the good neighbor provision. 83 Fed. Reg. at 50,453. EPA thus raised the standard for bringing a section 126(b) petition and collapsed the independent remedy afforded by section 126(b) into the good neighbor provision. Sliwinski Decl. ¶ 63.

35. As downwind areas, the Proposed Intervenors have an interest in being able to use section 126(b) as a remedy that provides relief independent from remedies under the good neighbor provision.

36. In particular, proposed intervenor State of New York has a section 126(b) petition that has been pending before EPA since March 2018 and has a compelling interest in seeing the correct standard applied to the section 126(b) petitions submitted by Delaware and Maryland as well as its own pending petition. Sliwinski Decl. ¶¶ 53-55, 63-64.

37. In addition, New York and New Jersey are members of the Ozone Transport Region created under section 184 of the Clean Air Act, a separate but complementary statutory provision established to remedy ozone pollution. New York and other states brought a petition under section 176A of the Clean Air Act to expand the Ozone Transport Region in 2013, which EPA denied in November 2017. In denying the Ozone Transport Region expansion petition, EPA pointed to the availability of other mechanisms, including section 126(b). *See* 82 Fed. Reg. 51,238, 51,242 (Nov. 3, 2017) (pointing to section 126(b) as available mechanism to address specific upwind sources or groups of sources; stating that EPA

“preferred” to use other statutory tools such as section 126(b)). Sliwinski Decl. ¶¶ 44-47.

38. Since EPA has denied use of other statutory mechanisms for addressing interstate transport of ozone pollution in favor of section 126(b), the Proposed Intervenors who continue to struggle with ozone pollution have a compelling interest in seeing that EPA appropriately uses section 126(b) and employs the proper standards.

39. The Proposed Intervenors also have a direct and substantial interest in the outcome of the litigation with respect to their participation in the regulatory process leading to the Petitions Denial.

40. As noted in Paragraph 16, certain of the Proposed Intervenors commented on EPA’s proposed Petitions Denial to express their concern about EPA’s abdication of its duty to police interstate ozone pollution under the Act.

41. Accordingly, the Proposed Intervenors have a compelling interest in seeing these comments properly addressed and the final rulemaking reflect the proper legal and procedural standards. Sliwinski Decl. ¶¶ 65-66.

42. This Court has previously granted motions to intervene filed by downwind states in challenges to EPA rulemakings concerning interstate transport of ozone pollution. *See, e.g., EME Homer City v. EPA*, No. 11-1302 and consolidated cases, Order, ECF Doc. No. 1351287 (Jan. 5, 2012) (granting motions to intervene filed by New York, North Carolina and Illinois); *see also State of Texas v. EPA*, No. 16-1428 and consolidated cases (D.C. Cir.), Order, ECF Doc. No. 1658440 (Jan. 31, 2017) (granting motion to intervene filed by the States of New York, Maryland, New Hampshire, Rhode Island and Vermont and Commonwealth of Massachusetts in litigation over 2016 Cross-State Air Pollution Rule Update establishing federal implementation plans under the good neighbor provision for the 2008 ozone NAAQS); *see also GenOn REMA, LLC v. EPA*, No. 12-1022 (3d Cir.), Order, ECF Doc. No. 3110810723 (Feb. 16, 2012) (granting motion to intervene by the State of New Jersey in litigation over successful section 126 petition to control emissions from upwind power plant).

The Proposed Intervenors Also Meet the Standard for
Intervention as of Right

43. In determining whether to allow intervention under Rule 15(d), this Court has sometimes looked to whether the movant would

satisfy Federal Rule of Civil Procedure 24(a)(2) regarding intervention as of right in the district courts. *See Building & Constr. Trades Dep't v. Reich*, 40 F.3d 1275, 1282 (D.C. Cir. 1994). Thus, this Court has described the considerations relevant to intervention under this provision as follows:

[Q]ualification for intervention as of right depends on the following four factors: (1) the timeliness of the motion; (2) whether the applicant claims an interest relating to the property or transaction which is the subject of the action; (3) whether the applicant is so situated that the disposition of the action may as a practical matter impair or impede the applicant's ability to protect that interest; and (4) whether the applicant's interest is adequately represented by existing parties.

Fund for Animals, Inc. v. Norton, 322 F.3d 728, 731 (D.C. Cir. 2003)

(citations and internal quotations omitted). Here, all four factors support granting this motion.

44. Regarding the first factor, the Proposed Intervenors' motion for intervention is timely. It has been filed and served within thirty days of the filing of the last petition for review of the Petitions Denial by Delaware on November 5, 2018. *See Fed. R. App. P. 15(d)*; Circuit Rule 15(b).

45. As to the second factor, the Proposed Intervenors' strong interests in the subject matter of these consolidated petitions for review are set forth above in the discussion of the Proposed Intervenors' direct and substantial interests and standing. The Proposed Intervenors need the ozone pollution reductions from sources in upwind states that would have come from applying the appropriate legal standards and factual findings and granting the petitions to assist in attaining and maintaining the ozone NAAQS. These interests justify their intervention as petitioners to challenge the Petitions Denial.

46. Similarly, the third factor—the potential for the ultimate disposition of the litigation to impair or impede the Proposed Intervenors' ability to protect those interests—also supports their intervention. A decision invalidating the Petitions Denial would require EPA to apply the proper legal standard to the facts in the record, and to any existing and future section 126(b) petitions, and would provide the upwind pollution reductions the Proposed Intervenors need to assist in meeting their legal obligations under the Clean Air Act.

47. The final criterion under Rule 24(a)(2) is whether the Proposed Intervenors' interests are adequately protected by existing

parties. A party “seeking intervention ordinarily is required to make only a minimal showing that representation of his interest may be inadequate.” *Environmental Defense Fund, Inc. v. Higginson*, 631 F.2d 738, 740 (D.C. Cir. 1979) (emphasis added); *see also Fund for Animals*, 322 F.3d at 735. Courts have previously recognized that the interests of one governmental entity may not be the same as those of another governmental entity. *See Forest Conserv. Council v. United States Forest Serv.*, 66 F.3d 1489, 1499 (9th Cir. 1995).

48. Here, the Proposed Intervenors have interests in the section 126(b) petitions distinct from other parties and in New York’s own section 126(b) petition as described above. The New York City metropolitan area—an area not within Delaware or Maryland—is significantly impacted by the sources named in the section 126(b) petitions at issue, and Proposed Intervenors have information and interests concerning these impacts that is distinct from the existing parties.

49. As shown above, the Proposed Intervenors have unique interests in ensuring that the Petitions Denial is vacated, so that sources in upwind states reduce the pollution that prevents the Proposed Intervenors from complying with the health-protecting NAAQS. Thus,

the Proposed Intervenors would also satisfy the standard for intervention as of right under Federal Rule of Civil Procedure 24(a)(2).

Conclusion

50. For the reasons stated above, the Proposed Intervenors respectfully request that their motion to intervene as petitioners in all of the consolidated petitions for review be granted.

Dated: December 4, 2018

Respectfully submitted,

FOR THE STATE OF NEW YORK

BARBARA D. UNDERWOOD
ATTORNEY GENERAL

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CERTIFICATE AS TO PARTIES AND AMICUS CURIAE

Pursuant to Circuit Rules 27(a)(4) and 28(a)(1)(A), proposed intervenors-respondents New York, New Jersey and the City of New York (Proposed Intervenors) submit the following certificate as to parties, intervenors and amici curiae in the consolidated petitions for review in Case Nos. 18-1285, 18-1287, and 18-1301.

District Court

This case involves consolidated direct petitions for review of a rulemaking by EPA entitled “Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland” 83 Fed. Reg. 50,444 (Oct. 5, 2018). There were accordingly no district court proceedings.

The Proceedings Before This Court

Petitioners

The petitioners in these consolidated actions are:

Case No. 18-1285:

State of Maryland

Case No. 18-1287:

Chesapeake Bay Foundation, Inc.
Adirondack Council
Chesapeake Climate Action Network
Clean Air Council
Environmental Defense Fund
Environmental Integrity Project
Physicians for Social Responsibility
Chesapeake, Inc.
Sierra Club

Case No. 18-1301:

State of Delaware

Respondents

The respondents in these consolidated petitions for review are:

U.S. Environmental Protection Agency

Andrew Wheeler, in his official capacity as Acting
Administrator of EPA.

Intervenors

As of the date of this filing, the following parties have moved to
intervene in the consolidated cases:

Utilities Air Regulatory Group

Duke Energy Kentucky, Inc.

Duke Energy Indiana, LLC

Amici Curiae

The Proposed Intervenors are unaware of any entities that have given notice of, asked for leave to appear or have been granted leave to appear as amicus curiae.

Dated: December 4, 2018

/s/ Claiborne E. Walthall

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMIT

The undersigned attorney, Claiborne E. Walthall, hereby certifies:

1. This document complies with the type-volume limitations of Fed. R. App. P. 27(d)(2). According to the word processing system used in this office, this document contains 4,007 words.

2. This document complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and 27(d)(1)(E) and the type-style requirements of Fed. R. App. P. 32(a)(6) and 27(d)(1)(E) because this document has been prepared in a proportionally spaced typeface in 14-point Century Schoolbook.

Dated: December 4, 2018

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CERTIFICATE OF SERVICE

I certify that the foregoing Motion for Leave to Intervene, with attachments, was filed on December 4, 2018 with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the Court's CM/ECF system and that, therefore, service was accomplished upon counsel of record by the Court's system.

Dated: December 4, 2018

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On Petitions for Review of Final Action of the
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**DECLARATION OF SHARON C. DAVIS IN SUPPORT OF
MOTION FOR INTERVENTION**

I, Sharon C. Davis, declare as follows:

1. I am the Manager of the Bureau of Evaluation and Planning within the Division of Air Quality at the New Jersey Department of Environmental Protection (“NJDEP”). I submit this declaration on behalf of the State of New Jersey in support of the motion of New York, New Jersey and the City of New York to intervene in this matter in support of petitioners. For the reasons described here, New Jersey has a direct interest in the outcome of this case because nine New Jersey counties are part of a regional non-attainment area with counties in Delaware and Maryland. The upwind power plants that Delaware and Maryland

petitioned EPA to regulate under Section 126(b) of the Clean Air Act also contribute to high levels of ozone in the rest of New Jersey.

2. One of the functions of the Bureau of Evaluation and Planning is to develop State Implementation Plans (“SIPs”) to reduce air pollution in New Jersey with the goal of reaching and maintaining attainment with national ambient air quality standards (“NAAQS”). In this role, I oversee a staff of 20 environmental scientists and engineers and am responsible for supervising the development of emissions inventories; evaluating and developing air pollution control strategies and rules and regulations in these areas; performing atmospheric modeling; coordinating with other states, state agencies, and regional organizations; and ensuring public participation in the process of air quality planning in the state. I have held this position since February 2010, and have worked at NJDEP for over 28 years. Before becoming Bureau Chief, I was the Supervising Environmental Engineer of the Mandatory Diesel Retrofit Program within the Bureau of Mobile Sources, the Supervisor of the Facility-Wide Permits Program within the Office of Pollution Prevention, and an Environmental Engineer responsible for preparing NJPDES Discharge to Surface Water permits within the Bureau of Industrial Discharge Permits.

3. I received my Bachelor’s degree in Mechanical Engineering from Rutgers University, College of Engineering in 1990. I currently serve as co-chair

of the Air Pollution Control Workgroup of the Northeast States for Coordinated Air Use Management (“NESCAUM”), a nonprofit association of air quality agencies in eight Northeast states. In this capacity I help identify and address issues of common concern related to the NAAQS, including efforts to analyze factors contributing to high regional ozone events and coordination of regulatory responses to impacts to ozone air quality across the states.

4. Under the federal Clean Air Act, EPA promulgates National Ambient Air Quality Standards (“NAAQS”) for six common air pollutants by identifying maximum atmospheric concentrations that are protective of public health and the environment. 42 U.S.C. § 7409. Although EPA sets the standards, the design and implementation of plans to attain the NAAQS is left, in the first instance, to the States. Each state must file with the EPA a SIP, which specifies enforceable strategies for bringing that state into compliance with the NAAQS for each air pollutant within deadlines set by the Act. 42 U.S.C. § 7410. Once a SIP is approved by the EPA, the state is bound as a matter of federal law to follow its provisions.

5. Ground-level ozone is one of six pollutants for which EPA has promulgated NAAQS. Although the ozone found in the earth’s upper atmosphere forms a protective layer from the sun’s ultraviolet radiation, the ozone formed near the earth’s surface (troposphere) is inhaled by or comes in contact with people,

animals, crops and other vegetation, and can cause a variety of health and other effects. Ozone is a highly reactive gas. In the troposphere, it is formed by complex chemical reactions involving nitrogen oxides (“NO_x”) and volatile organic compounds (“VOC”) in the presence of sunlight.

6. Ozone exposure can cause irritation of the lungs, making the lungs more vulnerable to diseases, such as pneumonia and bronchitis, increase incidents of asthma and susceptibility to respiratory infections, reducing lung function, reducing an individual’s ability to exercise, and aggravating chronic lung diseases. Increased ozone concentrations severely affect the quality of life for susceptible populations – small children, the elderly, and asthmatics – and present health risks for the public in general. Exposure to ozone for several hours at relatively low concentrations significantly reduces lung function and induces respiratory inflammation in normal, healthy people during exercise. This decrease in lung function is generally accompanied by symptoms, such as chest pain, coughing, sneezing, and pulmonary congestion. Research strongly suggests that, in addition to exacerbating existing asthma, ozone also causes asthma in children.¹ Long-term exposure may lead to scarring of lung tissue and lowered lung capacity. Repeated exposure may cause permanent lung damage. When ozone reaches unhealthy

¹ Mid-Atlantic Regional Air Management Association (MARAMA), “Appendix A: Health Effects of Air Pollutants, A Guide to Mid-Atlantic Regional Air Quality Report,” at 89 (Oct. 2005).

levels, children, people who are active outdoors, and people with respiratory disease are most at risk. Long-term exposure to ozone can eventually lead to premature death.²

7. Nitrogen oxides consist of a mixture of gases comprised mostly of nitric oxide (“NO”) and nitrogen dioxide (“NO₂”). Although most NO_x is emitted as NO, it is readily converted to NO₂ in the atmosphere. NO₂ is a reddish-brown highly reactive gas that is formed in the air through the oxidation of NO. In the troposphere, near the Earth’s surface, NO₂, not molecular oxygen, provides the primary source of the oxygen atoms required for ozone formation. These gases are emitted from a variety of sources such as the exhaust of motor vehicles, boats, planes and locomotives, the burning of coal, oil or natural gas, residential wood burning, forest fires, manufacturing and industrial processes.

8. VOCs are organic chemicals that have a high vapor pressure at ordinary room temperature. The term volatile in VOCs indicates that the compounds evaporate easily at room temperature and organic indicates that they contain carbon. VOCs are emitted from a wide variety of sources such as manufacturing processes, gasoline stations, autobody repair shops, motor vehicles, recreational boating, lawn and garden equipment and consumer product use

² EPA, “Air Quality Criteria for Ozone and Related Photochemical Oxidants,” Vol. I (Feb. 2006).

including household cleaners, paints, cosmetic and hair products, cleaning solvents, adhesives and insecticides.

9. In 2008, EPA promulgated a new 8-hour NAAQS for ozone of 75 parts-per-billion (“ppb”), a reduction from the 84 ppb standard adopted in 1997.³ Per the Clean Air Act, States were required to submit SIPs by March 12, 2011, referred to as the “Infrastructure SIP”, describing how the state will provide for the implementation, maintenance and enforcement of the revised NAAQS.

10. In May 2012, EPA finalized its designations of attainment and nonattainment classifications, and unclassifiable areas for the 2008 ozone standard.⁴ EPA designated all of New Jersey as marginal nonattainment and set an attainment date of July 20, 2015. 77 Fed. Reg. at 30135. New Jersey was split between two multi-state nonattainment areas: its twelve northern counties are part of the NY-NJ-CT nonattainment area and the state’s nine southern counties are part of the PA-NJ-MD-DE nonattainment area. 40 C.F.R. § 81.331.

11. Under the Clean Air Act, states in an ozone NAAQS multi-state nonattainment area are required to coordinate development of their SIPs with other states in the area. 42 U.S.C. § 7511a(j)(1). Any one state’s failure to attain the

³ National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16436 (Mar. 27, 2008).

⁴ Air Quality Designations for the 2008 Ozone NAAQS. 77 Fed. Reg. 30088 (May 21, 2012); *see* 42 U.S.C. § 7407(d)(1)(B).

ozone NAAQS within a multi-state nonattainment area means the entire area is in nonattainment, regardless of whether the entire state is measuring below the standard. 42 U.S.C. § 7511a(j)(1) and (2).

12. The PA-NJ-MD-DE area is listed as nonattainment for the 2008 ozone NAAQS at 40 C.F.R. § 81.331. The NY-NJ-CT nonattainment area is also listed as nonattainment, for the 2008 NAAQS and was reclassified from “marginal” to the more serious “moderate” status by operation of law on May 4, 2016,⁵ because air monitors in New York and Connecticut (but not New Jersey) still registered exceedances of the 2008 ozone standard after the July 20, 2015, attainment date. EPA set a new attainment date of July 20, 2018. 81 Fed. Reg. at 26698. On December 22, 2017, New Jersey submitted its ozone attainment demonstration SIP showing that New Jersey has met its obligations for attainment of the 2008 ozone standard in the NY-NJ-CT multi-state nonattainment area.⁶ New Jersey’s air monitors all show compliance with the 2008 ozone standard throughout New Jersey, and New Jersey has adopted very stringent controls on in-state sources of NO_x and VOCs. New Jersey has adopted control measures more stringent than

⁵ 81 Fed. Reg. 26697, 26699 (May 4, 2016).

⁶ NJDEP, “New Jersey SIP Revision for the Attainment and Maintenance of the Ozone NAAQS” (December 2017) (“NJ Ozone Attainment SIP”), available at <http://www.state.nj.us/dep/baqp/ozoneppb.html> (last accessed March 26, 2018).

Federal rules, than EPA's Control Technique Guidelines ("CTGs") for VOCs,⁷ and neighboring state rules, especially those of most importance that address NOx on high ozone days, thereby setting the benchmark for modern control technology to meet the Clean Air Act's "Reasonably Available Control Measures" ("RACM") and "Reasonably Available Control Technology" ("RACT") standards. *See* 42 U.S.C. § 7502(c)(1). These include:

- Power Plants: New Jersey has enforceable performance standards for NOx emissions from power plants (or Electric Generating Units ("EGUs")) that are among the most stringent and effective air pollution control regulations in the country. New Jersey has taken the lead by adopting measures to address emissions from EGUs that operate on High Electric Demand Days ("HEDDs") when ozone concentrations tend to be elevated. These sources are critically important contributors to episodes of elevated ozone in the Northern NJ-NY-CT Nonattainment Area. N.J. Admin. Code §§ 7:27-19.29 and 19.30.
- Distributed Generation/Demand Response ("DG/DR"): New Jersey's rules for stationary reciprocating internal combustion engines ("RICE") do not allow the use of uncontrolled engines for the purpose of distributed electric generation or demand response in non-emergency situations. However, in many states these engines are uncontrolled and used to assist the electric grid during high electric demand periods. Like HEDD EGUs, many of these engines are operating on hot summer days which usually coincide with the high ozone days. N.J. Admin. Code § 7:27-19.8

⁷ The CTGs are published by EPA to presumptively define "Reasonable Available Control Technology," controls for existing sources of air pollutants that states must implement under 42 U.S.C. § 7502(c)(1) if the state is in nonattainment. The CTGs are available on EPA's website at <https://www.epa.gov/ozone-pollution/control-techniques-guidelines-and-alternative-control-techniques-documents-reducing> (last visited March 29, 2018).

- Municipal Waste Combustors: New Jersey has implemented measures to control NOx emissions from Municipal Waste Combustors. New Jersey has taken significant actions to address these important sources while the EPA, State of New York, and other nearby states, including upwind states that significantly contribute to ozone nonattainment, have not. N.J. Admin. Code § 7:27-19.12
- Mobile Source Controls: New Jersey has addressed emissions from mobile sources to the extent that state action is not pre-empted by the Clean Air Act. New Jersey has adopted a Low Emission Vehicle Program (“NJLEV”) addressing motor vehicle emissions based on the standards used by the State of California to ensure that the lowest emitting vehicles available in the nation are sold in New Jersey including zero emission vehicle standards. Other states have not made the same commitment. New Jersey also has some of the most stringent rules in the country for vehicle idling and heavy-duty vehicle inspection and maintenance using on-board diagnostics (“OBD”) technology. N.J. Admin. Code § 7:27-28.1 to -28.
- Pipeline Compressor Stations: In 2017, New Jersey enacted new limits on NOx emissions from natural gas pipeline compressor stations that use combustion turbines or reciprocating engines to maintain system flow and overcome pressure losses and to facilitate the movement of the natural gas. There are no federal NOx standards for existing (as opposed to newly-constructed) compressor turbines or compressor engines, but New Jersey identified this class of sources for controls to further its efforts to attain the ozone NAAQS. N.J. Admin. Code §§ 7:27-19.5 and -19.8.
- New Jersey has also adopted stringent control measures to reduce emissions of VOCs. New Jersey requires State of the Art air pollution control for significant equipment of new VOC sources at minor facilities. The State has implemented one of the most stringent petroleum storage tank rules to address emissions from bulk petroleum storage facilities. More recently, New Jersey has adopted four CTGs to address VOC emissions from Industrial Cleaning Solvents, Paper, Film, and Foil Coatings, Fiberglass Boat Manufacturing Materials, and Miscellaneous Metal and Plastic Parts Coatings. N.J. Admin. Code § 7:27-16.1 et seq.

These are only some of the dozens of new rules and rule revisions adopted by New Jersey since 2002 to reduce emissions of ozone precursors.⁸

13. As a result of these aggressive measures to reduce in-state emissions, New Jersey's annual NO_x and VOC emissions have each decreased approximately 77 percent from 1990 to 2017. Annual NO_x and VOC emissions have decreased approximately 31 percent and 17 percent, respectively, from 2011 to 2017. A significant decreasing trend has also been shown in 8-hour ozone air quality monitoring design values in New Jersey of approximately 39 percent from 1988 to 2016 and 15 percent from 2011 to 2016. However, New York and Connecticut air monitors still register exceedances of the 75 ppb standard, despite New Jersey's efforts and similar regulatory measures in New York and Connecticut.

14. Despite the state's efforts, on November 14, 2018, EPA published notice of its proposed finding that the NY-NJ-CT nonattainment area did not meet the July 20, 2018 attainment deadline. If this proposed finding is adopted, the area would be reclassified as "serious" with a new attainment deadline of July 21, 2021.⁹

⁸ NJ Ozone Attainment SIP, *supra*, note *, at § 3.1.3 and Table 3-1 (Dec. 2017) (listing more than 40 regulatory actions since 2002 to reduce ozone precursors).

⁹ EPA, Proposed Rule: Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas

15. By that time, the states will also be required to comply with a new, more stringent ozone NAAQS. In 2015, EPA ratcheted down the 8-hour ozone NAAQS to 70 ppb,¹⁰ and New Jersey's SIP revision for attainment of this standard is expected to be due by 2021.¹¹ On April 30, 2018, EPA designated both the northern and southern New Jersey regions as nonattainment for the 2015 ozone NAAQS too. Final Rule: Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, 83 Fed. Reg. 25776, 25819 (April 30, 2018). There is likely no feasible way for New Jersey, New York, Delaware, or Maryland to achieve compliance with the 2015 ozone standard unless EPA takes action to require reductions from upwind sources that significantly contribute to our air pollution problems.

16. The transport of ozone from sources upwind of the nonattainment area continues to contribute significantly to the poor ozone air quality in New Jersey and in its shared nonattainment area neighbors. In 2016, EPA determined that

Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards, 83 FR 56781, 56784 (Nov. 14, 2018).

¹⁰ National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65292 (October 26, 2015).

¹¹ On December 20, 2017, EPA gave notice that it expects to designate all of New Jersey in nonattainment for the 2015 ozone standard. The final designation is expected by October 1, 2018, 82 Fed. Reg. 29246 (June 28, 2017), after which New Jersey must submit its nonattainment SIP revision within 3 years under 42 U.S.C. § 7502(b).

upwind NOx emissions from Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia significantly contribute to elevated ozone readings at nonattaining air monitors in Connecticut and New York that keeps New Jersey in nonattainment status for the 2008 NAAQS, and monitors in Connecticut, Delaware, Maryland, New Jersey, and New York that prevent New Jersey from attaining the 2015 NAAQS.¹²

17. EPA's decision to deny the Section 126(b) petitions and to allow upwind power plants to continue operating without running installed NOx controls is prejudicial to New Jersey and its nonattainment neighbors who are unreasonably expected to demonstrate attainment without reductions in upwind emissions that could be achieved immediately and at a fraction of the cost of in-state reductions. If reductions are not achieved from upwind states with relatively lax emissions controls, then New Jersey may be required to implement further NOx and VOC emissions controls beyond its already stringent regulations to offset the additional, significant pollution contributed to New Jersey from out-of-state, upwind sources. This would place an unfair burden on New Jersey by increasing costs of compliance on in-state sources and challenging New Jersey to eke out further

¹² EPA Office of Air Quality Planning and Standards, "Air Quality Modeling Technical Support Document for the Final Cross State Air Pollution Rule Update – Data File with Ozone Design Values and Ozone Contributions" (August 2016), available at <https://www.epa.gov/airmarkets/final-cross-state-air-pollution-rule-update> (last accessed March 29, 2018).

reductions from industries and sectors already subject to among the most advanced standards in the county. Essentially, EPA's failure to control ozone transport from these upwind sources requires disproportionate regulation and over-control of New Jersey sources to offset ozone pollution that does not originate within the state's boundaries.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

So declared this 29th day of November 2018.



Sharon C. Davis, Manager
Bureau of Evaluation and
Planning
New Jersey Department of
Environmental Protection

ORAL ARGUMENT NOT YET SCHEDULED
IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF MARYLAND, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY and ANDREW
WHEELER,

Respondents.

Consolidated Case Nos.
18-1285, 18-1287 and
18-1301

On Petitions for Review of Final Action of the
United States Environmental Protection Agency

**DECLARATION OF ROBERT SLIWINSKI, P.E. IN SUPPORT OF
MOTION FOR INTERVENTION**

I, Robert Sliwinski, P.E., declare as follows:

1. I am the Assistant Director of the Division of Air Resources of the New York State Department of Environmental Conservation (DEC). I currently assist with oversight of nine regional offices, which are responsible for permitting and enforcement throughout the state, and

DEC's central office in Albany, which supports the efforts of the regional offices and carries out air quality planning, monitoring and research functions.

2. I am familiar with the facts and circumstances of this matter and submit this declaration in support of the motion of New York, New Jersey and the City of New York to intervene in this matter in support of petitioners.

BACKGROUND AND QUALIFICATIONS

3. I received my Bachelor's degree in Forest Engineering from the State University of New York College of Environmental Science and Forestry in 1979. I received my Master's degree in Environmental Engineering from Rensselaer Polytechnic Institute in 1982.

4. I have worked at DEC since 1983. In addition to my current position of Assistant Director of the Division of Air Resources, I have held the positions of Director, Bureau of Air Quality Planning; Director, Bureau of Stationary Sources; Chief of the Stationary Source Planning Section; and Environmental Engineer 2 in the Division of Air Resources.

5. One of my responsibilities as Assistant Director of the Division of Air Resources is to oversee DEC's air quality planning efforts,

including the development of State Implementation Plans (SIP). SIPs detail how DEC will assure that, among other things, the air quality in New York will come into and/or maintain compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants, including ozone, established by the United States Environmental Protection Agency (EPA) under the federal Clean Air Act (CAA or Act). States are primarily responsible for ensuring attainment and maintenance of a NAAQS once EPA has established it.

6. As part of my job responsibilities, I have worked to prepare petitions under section 126(b) of the Act, 42 U.S.C. § 7426(b), identifying individual sources or groups of sources in upwind states that significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS in New York. Most recently, I worked with a team to prepare and submit a section 126(b) petition on behalf of New York to EPA in March 2018 identifying approximately 360 such upwind sources or groups of sources, including all of the sources identified by Delaware and Maryland in their respective section 126(b) petitions that are at issue in this matter. New York's March 2018 section 126(b) petition, attached as Exhibit A, remains pending with EPA.

7. As part of my job responsibilities over the last 27 years, I have worked on efforts within New York to adopt every feasible control program that could provide some meaningful contribution to reducing emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOCs), which are pollutants that lead to the formation of ozone and are commonly referred to as “ozone precursors.” These control programs include reasonably available control technology for NO_x (NO_x RACT), 6 New York Code of Rules & Regulations (NYCRR) Part 227-2; the Pre-2003 NO_x Budget Program, 6 NYCRR Part 227-3; the NO_x Budget Trading Program, 6 NYCRR Part 204; the Acid Deposition Reduction Program, 6 NYCRR Parts 237 and 238; the Clean Air Interstate Rule (CAIR) and Cross-State Air Pollution Rule (CSAPR) trading programs, 6 NYCRR Parts 243, 244 and 245; Architectural and Industrial Maintenance Coatings, 6 NYCRR Part 205; and Consumer Products, 6 NYCRR Part 235.

8. These SIPs and regulations have imposed stringent standards on electric generators (power plants) and other emissions sources, including motor vehicles, that are more stringent than those required by the federal government and many other states. Nonetheless, those

measures have been insufficient to address ozone nonattainment and maintenance issues in New York State due in large part to pollution from upwind sources.

9. In particular, New York has struggled to meet or maintain the NAAQS for ozone in certain areas, including the multi-state New York-N. New Jersey-Long Island, NY-NJ-CT Nonattainment Area (New York City metropolitan area). In fact, several monitoring locations in this tri-state area are currently monitoring nonattainment for the 2008 and 2015 ozone NAAQS.

10. Beyond assisting with our in-state efforts in New York, in my professional capacity, I have also served on various working committees for the Ozone Transport Commission (OTC), a multi-state organization created under the Act that is responsible for advising EPA on issues relating to the interstate transport of ozone and its precursors and for developing and implementing regional solutions to the ozone problem in the Northeast and Mid-Atlantic regions. This includes the OTC NO_x Budget program, the predecessor of EPA's regional ozone season NO_x trading programs, as well as several other regional control programs to reduce ozone precursor emissions and ozone transport. I have also served

on work groups that advise EPA on various elements of SIP preparation and implementation; participated in the Ozone Transport Assessment Group (OTAG), an EPA-led effort to address transport for an earlier ozone NAAQS; and contributed to the development of the Northeast States for Coordinated Air Use Management's (NESCAUM) recommendations for NO_x RACT on large stationary sources, including power plants, which were the blueprint for EPA's original NO_x RACT guidance.

11. As part of my job responsibilities, I also worked with other members of the Ozone Transport Region (Transport Region)—a group of states created by section 184 of the Act that are subject to strict controls on ozone precursor pollutants—to prepare a petition submitted to EPA in 2013 to expand the Transport Region to include a number of additional upwind states. EPA denied this petition in 2017, and New York and seven other states are currently challenging the denial in a petition for review filed in this Court in December 2017. *New York v. Pruitt*, Case No. 17-1273 (D.C. Cir.).

OZONE FORMATION AND HEALTH AND WELFARE EFFECTS

12. Ground-level ozone, commonly referred to as smog, is not emitted directly into the air, but is a secondary air pollutant that forms in the atmosphere through a series of complex chemical reactions involving NO_x and VOCs in the presence of sunlight and warm temperatures.

13. Peak ozone concentrations in New York typically occur during the May to September period (ozone season) when temperatures are highest.

14. NO_x and VOC emissions from local urban sources over successive hot days combine with high-level concentrations of ozone and ozone precursors that have been transported into the area from sources located outside the state by westerly to southerly winds.

15. Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and airway inflammation. It also can reduce lung function and harm lung tissue. Ozone can worsen bronchitis, emphysema and asthma, leading to increased medical costs. Exposure to ozone has also been linked to early deaths. People most at risk from breathing air containing ozone include

people with asthma, children, older adults and people who are active outdoors, especially outdoor workers.

16. In addition to its health effects, ozone interferes with the ability of plants to produce and store nutrients, which makes them more susceptible to disease, insects, harsh weather and other pollutants. This impacts annual crop production throughout the United States, resulting in significant losses and injury to native vegetation and ecosystems. Furthermore, ozone damages the leaves of trees and other plants, ruining the appearance of cities, parks and recreation areas. Ozone can also damage certain man-made materials, such as textile fibers, dyes, rubber products and paints.

OZONE AIR QUALITY IN NEW YORK

17. EPA promulgated revised ozone NAAQS in 2008 (2008 ozone NAAQS) set at a level of 75 parts per billion (ppb). Finding the 2008 ozone NAAQS insufficient to protect public health and welfare, in 2015 EPA promulgated another revised ozone NAAQS at a level of 70 ppb (2015 ozone NAAQS). Both of these standards remain in effect.

18. This case involves the failure of EPA to fully require that upwind sources, ten years after promulgation of the 2008 ozone NAAQS

and three years after promulgation of the 2015 ozone NAAQS, sufficiently control their emissions of ozone precursors, to the detriment of air quality in New York, particularly in the New York City metropolitan area.

19. Effective July 20, 2012, EPA designated the New York City metropolitan area as “marginal” nonattainment for the 2008 ozone NAAQS. The New York City metropolitan area consists of the New York counties of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, and Westchester, as well as three counties in Connecticut and twelve counties in New Jersey, and is collectively designated due to its interrelated nature.

20. The marginal nonattainment classification required New York to meet a statutory attainment deadline of July 20, 2015, based on air quality measured during the 2012 through 2014 ozone seasons.

21. New York currently has some of the most stringent NO_x and VOC control programs in the country, aggressively regulating power plants, factories, and motor vehicles. These programs include:

- Stringent Reasonably Available Control Technology (RACT) on all major NO_x and VOC stationary sources in New York,

including electric generating units (EGUs or power plants) and major non-EGUs. 6 NYCRR Part 212-3; 6 NYCRR Part 220; and 6 NYCRR Part 227-2.

- Adoption of California's motor vehicle emission standards, which place more stringent controls on the amount of NO_x emitted from motor vehicles than federal emission standards. New York most recently adopted the LEV III standards, which set emissions standards on all 2017 through 2025 model year vehicles up to 14,000 pounds gross vehicle weight rating. 6 NYCRR Part 218.
- Statewide Vehicle Inspection and Maintenance (I&M) requirements for motor vehicles that include testing of older, high emitting vehicles to significantly reduce on-road mobile emissions. 6 NYCRR Part 217-6.
- Adoption of regional measures to reduce VOC emissions from a variety of large source categories that have been recommended by the OTC including consumer products, architectural and industrial maintenance coatings, portable fuel containers, adhesives and sealants, asphalt paving, and

solvent metal cleaning processes. 6 NYCRR Parts 235, 205, 239, 228, 241 and 226.

- Lowest Achievable Emission Rate (LAER) standards on all new major sources of NO_x or VOC, and on all existing sources that would undergo major modifications with emissions above certain significant project thresholds. 6 NYCRR Part 231.

22. Major stationary sources in New York reduced annual NO_x emissions by 43 percent between 2008 and 2014, and major EGUs reduced ozone-season NO_x emissions by 73 percent between 2008 and 2017. These reductions can largely be attributed to the strong NO_x RACT regulations adopted by New York.

23. The City of New York is also taking significant additional measures to reduce the emission of ozone precursors within its jurisdiction. See City of New York, *OneNYC Initiatives* 23-28, 82-85 (Apr. 2018), available at <https://onenyc.cityofnewyork.us/wp-content/uploads/2018/04/OneNYC-Initiatives-2.pdf>.

24. Despite the significant emission reductions achieved through New York's in-state controls, the New York City metropolitan area did

not attain the 2008 ozone NAAQS by the 2015 statutory deadline for marginal areas, due in large part to pollution transported into New York from upwind states. Therefore, EPA reclassified the New York City metropolitan area to “moderate” nonattainment on June 3, 2016.

25. The moderate classification carried a statutory attainment deadline of July 20, 2018, based on air quality monitored during the 2015 through 2017 ozone seasons. The moderate classification required DEC to prepare and submit an attainment SIP to EPA that included minimum reductions of VOCs and NO_x of three percent per annum and an air quality modeling demonstration detailing how the area would come into compliance with the 2008 ozone NAAQS, including the adoption of additional costly emissions reductions.

26. New York submitted an attainment SIP on November 10, 2017 for the 2008 ozone NAAQS. This attainment demonstration determined that the area was exceeding the three-percent-per-year emission reduction requirements for the 2008 ozone NAAQS. *See* NYSDEC, New York State Implementation Plan for the 2008 Ozone National Ambient Air Quality Standards: New York-N. New Jersey-Long

Island, NY-NJ-CT Nonattainment Area (Nov. 2017), at §§ 6-9, *available at* http://www.dec.ny.gov/docs/air_pdf/sip2008o3nymafinal.pdf.

27. However, the New York City metropolitan area did not attain the 2008 ozone NAAQS of 75 ppb by the July 20, 2018 deadline for a moderate nonattainment area.

28. In conjunction with its November 10, 2017 attainment SIP submission, DEC requested an immediate reclassification to “serious” nonattainment by EPA, which would provide an additional three years, until July 20, 2021 (based on 2018-2020 ozone season monitoring data), to attain the NAAQS.

29. On November 7, 2018, EPA proposed reclassification of the New York City metropolitan area to a “serious” nonattainment area. *See Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards, Proposed Rule, (Nov. 7, 2018), available at* https://www.epa.gov/sites/production/files/2018-11/documents/2008_o3_mod_daad_nprm_revised_10-30-18.pdf.

30. This reclassification would require a statutory attainment deadline of July 20, 2021. DEC will be required to prepare and submit another attainment SIP to EPA, which must include additional three percent per annum reductions in NO_x and VOCs, and further air quality modeling to demonstrate attainment, including the adoption of any additional control programs.

31. Based on certified monitoring data from the 2017 ozone season, areas in New York have continued to monitor ozone levels in excess of the 2008 and 2015 ozone NAAQS, *see* EPA, *Ozone Design Values, 2017, available at* <https://www.epa.gov/air-trends/air-quality-design-values#report>. Preliminary data from the 2018 ozone season show this situation has continued to the present. *See* NYSDEC, *High Ozone Values During 2018, available at* <http://www.dec.ny.gov/chemical/38377.html>.

TRANSPORTED OZONE POLLUTION, THE GOOD NEIGHBOR PROVISION AND SECTION 126(b) OF THE ACT

32. Complicating the strategy to reduce ozone in the New York metropolitan area is the fact that the chemical reactions that create ozone can take place while the pollutants are being transported through the air by the wind. This means elevated levels of ozone can exist many

miles away from the source of their original precursor emissions. The high concentrations of ozone that are transported into New York are largely the result of emissions from major stationary sources of NO_x located out of state, including from sources located in Indiana, Kentucky, Ohio, Pennsylvania and West Virginia, which are the states where sources named in the section 126(b) petitions from Delaware and Maryland are located.

33. Further, the formation and transport of ozone occurs on a regional scale (i.e., hundreds of miles) over much of the eastern United States. EPA has known for decades of the regional nature of the ground-level ozone air quality problem, and that pollution from sources located in multiple upwind states contributes to downwind states' problems attaining and maintaining the ozone NAAQS, with those sources in upwind states routinely contributing to multiple downwind air quality problems in varying amounts.

34. Thus, EPA knows that downwind states such as New York cannot on their own comply with the ozone NAAQS, and that reducing ozone concentrations in downwind states requires a reduction in what

EPA calls the “interstate transport” of ozone precursor emissions from upwind states.

35. New York has been involved for decades in efforts to mitigate regional transport of ozone and its precursor emissions. However, over 12.7 million New Yorkers continue to breathe air with elevated ozone concentrations, which may cause or exacerbate health problems especially for vulnerable populations, including children, elderly and those with compromised immune systems. Without an effective solution to the ozone transport issue, public health and welfare in New York remains at risk.

36. The Act requires each state to submit a SIP within three years of every promulgation or revision of a NAAQS that provides for the “implementation, maintenance, and enforcement” of the standard. 42 U.S.C. § 7410(a)(1). These plans are often referred to as “Infrastructure” SIPs. An Infrastructure SIP must meet the requirements listed under 42 U.S.C. § 7410(a)(2), including the requirements of 42 U.S.C. § 7410(a)(2)(D)(i)(I), referred to as the Good Neighbor Provision.

37. The Good Neighbor Provision requires that each state’s SIP contain adequate provisions to prohibit emissions that will significantly

contribute to nonattainment of a NAAQS, or interfere with maintenance of a NAAQS, in a downwind state.

38. Section 110(c)(1) of the Act, 42 U.S.C. 7410(c)(1), requires EPA to promulgate a Federal Implementation Plan (FIP) as a “backstop” in the event that a state fails to submit, or EPA disapproves, a Good Neighbor SIP. Section 110(c)(1) requires EPA to promulgate FIPs to satisfy the Good Neighbor Provision obligation within two years of disapproving or issuing a finding of failure to submit a state’s SIP.

39. Section 126(b) of the Clean Air Act, 42 U.S.C. § 7426(b), provides that “[a]ny State or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 7410(a)(2)(D)(ii) of this title or this section.¹ Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition.” Thus, section 126(b) cross-references Section 110(a)(2)(D)(i), the Good Neighbor Provision, but provides an independent,

¹ The reference to section 7410(a)(2)(D)(ii) is a scrivener’s error; the correct cross-reference is to section 7410(a)(2)(D)(i). See *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1044 (D.C. Cir. 2001).

complementary remedy with respect to individual sources or groups of sources.

40. Because of the regional nature of ozone pollution, EPA has in the last two decades promulgated four federal rules to address the regional transport of ozone pursuant to the Good Neighbor Provision. The latest finalized rule,² the Cross-State Air Pollution Rule Update (CSAPR Update), which addresses interstate transport of ozone pollution with respect to the 2008 ozone NAAQS, 81 Fed. Reg. 74,504 (Oct. 26, 2016) (effective Dec. 27, 2016), did not completely fulfill EPA's outstanding obligation under the Act to prohibit interstate transport of air pollution that significantly contributes to nonattainment or interferes with maintenance of the NAAQS in downwind states. *Id.* at 74,506 ("The FIPs being promulgated *partially* address the EPA's outstanding CAA obligations to prohibit interstate transport of air pollution which will contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to the 2008 ozone NAAQS.") (emphasis added); *see also id.* at 74,521-22.

² EPA has proposed, but not finalized, a fifth regional transport rulemaking, the "CSAPR Close-Out," 83 Fed. Reg. 31,915 (Jul. 10, 2018).

41. Air quality modeling performed by EPA and released on January 22, 2015 and updated on August 4, 2015 demonstrated that multiple upwind states were projected to significantly contribute to nonattainment or interfere with maintenance of the 2008 NAAQS in the New York City metropolitan nonattainment area in its target attainment year, thus failing to comply with the Good Neighbor Provision and making it more difficult for the area to comply with the NAAQS. 80 Fed. Reg. 46,271, 46,274, 46,276 (Aug. 4, 2015). This modeling projected that the Richmond County, New York (Staten Island) monitor, which is within the New York City metropolitan area, would be in nonattainment in 2017, and that 34.8 percent of the monitored ozone could be attributed to significantly contributing states outside of the New York City metropolitan area. Updated Air Quality Modeling Technical Support Document, Docket ID No. EPA-HQ-OAR-2015-0500-0016 (Aug. 2015).

42. The modeling for the CSAPR Update further demonstrated that upwind states were projected to significantly contribute to nonattainment or interfere with maintenance of the 2008 NAAQS in the New York City metropolitan nonattainment area in its target attainment year. 81 Fed. Reg. at 74,538-39. EPA determined that, even after

implementation of the emission reductions measures required by the CSAPR Update, downwind receptors located in Suffolk County, New York (Long Island) and Richmond County, New York (Staten Island) would continue to have problems attaining the 2008 ozone NAAQS in 2017. Ozone Transport Policy Analysis Final Rule Technical Support Document for the CSAPR Update, Docket ID No. EPA-HQ-OAR-2015-0500 (Aug. 2016). EPA further determined that emissions from sources in upwind states are expected to continue to exceed the threshold amount that EPA considers to significantly interfere with maintenance of the NAAQS at those downwind receptors. *Id.*

43. Like DEC's own internal modeling, this modeling correlates very well with the actual values that were observed during the 2017 ozone season and showed that nonattainment would continue past the July 20, 2018 deadline.

EPA's DENIAL OF A SECTION 176A PETITION TO EXPAND THE OZONE TRANSPORT REGION

44. In 2013, nine northeastern states that are members of the Transport Region, including New York, brought a petition under section 176A of the Act, 42 U.S.C. § 7506a, to expand the Transport Region to include additional upwind states. The sources named in the section

126(b) petitions at issue in this action are located in states presently in or those sought to be added to the Transport Region.

45. After delaying action for over three years, EPA in January 2017 proposed denial of the petition to expand the Transport Region. 82 Fed. Reg. 6,509 (Jan. 19, 2017). In November 2017, EPA finalized action denying the petition to expand the Transport Region. *See* 82 Fed. Reg. 51,238 (Nov. 3, 2017).

46. Among the principal reasons provided for its denial, EPA cited a purported preference for other statutory remedies such as the Good Neighbor Provision and section 126(b) petitions. *See* 82 Fed. Reg. at 51,239, 51,241. In denying the petition to expand the Transport Region, EPA specifically cited section 126(b) petitions filed by Maryland and Delaware, the petitions at issue in this case. *See* 82 Fed. Reg. at 51,242 n.10. However, despite its reliance on such 126(b) petitions to justify its denial of the Transport Region expansion petition, EPA subsequently denied those petitions as well, leaving downwind states such as New York without a full remedy.

47. New York and seven other states have petitioned for review of EPA's denial of their petition to expand the Transport Region, and the

case is currently pending in this Court. *New York v. EPA*, Case No. 17-1273 (D.C. Cir.).

**THE SECTION 126(b) PETITIONS SUBMITTED BY DELAWARE
AND MARYLAND**

48. In July 2016, Delaware brought four petitions under section 126(b) identifying four respective sources or groups of sources upwind from the state that contributed significantly to nonattainment or interfered with maintenance of the 2008 or 2015 ozone NAAQS in Delaware.

49. In November 2016, Maryland submitted a single 126(b) petition naming 36 upwind sources that contributed significantly to nonattainment or interfered with maintenance of the 2008 ozone NAAQS in Maryland.

50. After delaying action for over a year on these petitions, EPA proposed to deny them all in a single notice of proposed rulemaking published in the Federal Register on June 8, 2018. *See* 83 Fed. Reg. 26,666 (Jun. 8, 2018).

51. Numerous parties submitted critical comments on the proposed denial, including New York and New Jersey. *See* Documents No. EPA-HQ-OAR-2018-0295-0074 (Comments of New York State

Department of Environmental Conservation), EPA-HQ-OAR-2018-0295-0066 (Comments of New York State Office of the Attorney General), and EPA-HQ-OAR-2018-0295-0071 (Comments of New Jersey Department of Environmental Protection), *available at* <http://www.regulations.gov>.

52. However, EPA published its final rule denying all of the section 126(b) petitions submitted by Maryland and Delaware, respectively, on October 5, 2018. 83 Fed. Reg. 50,444 (Petitions Denial).

NEW YORK'S SECTION 126(b) PETITION

53. Meanwhile, on March 12, 2018, New York submitted its own section 126(b) petition to EPA (Ex. A), demonstrating that over 360 high-emitting stationary sources (400 tons per year or more) from nine upwind states are on their own significantly contributing to nonattainment or interfering with maintenance in New York of the 2008 and 2015 ozone NAAQS.

54. The collective high-emitting sources from each of the nine states significantly contribute to nonattainment or maintenance issues in New York, as defined by EPA as exceeding one percent of the NAAQS. In many instances, these large stationary sources are operating at NO_x emission rates that New York considers to be in violation of RACT.

55. EPA delayed acting on New York's section 126(b) petition in May 2018, 83 Fed. Reg. 21,909 (May 11, 2018), and has not yet proposed a decision, despite being past the statutory deadline.

HARM TO NEW YORK FROM EPA'S DENIAL OF THE SECTION 126(b) PETITIONS FROM MARYLAND AND DELAWARE

56. For decades, New York has struggled to meet or maintain the NAAQS for ozone in certain areas, including the multi-state New York City metropolitan area. As discussed above, New York has imposed stringent standards on electric generators (power plants) and other emissions sources, including motor vehicles, that are more stringent than those required by the federal government and many other states, and the City of New York, has also taken additional measures to reduce emissions within its jurisdiction. But those measures have been insufficient due in large part to pollution from upwind sources.

57. Because EPA has consistently delayed and denied use of the various statutory remedies provided under the Act to fully address interstate transport of ozone pollution, downwind areas such as New York continue to struggle with attainment and maintenance of the 2008 and 2015 ozone NAAQS, and the citizens and residents of significant

areas of New York, including the New York City metropolitan area, continue to breathe air with ozone levels exceeding these standards.

58. As a result, residents of New York face increased health and welfare risks from elevated levels of ozone pollution, as detailed in paragraph 15, above, injuring them. These health effects result in large medical costs and also contribute to missed school and work, and this lost productivity results in economic costs borne by New York and the City of New York. *See, e.g.,* New York City Department of Health and Mental Hygiene, *New York City Trends in Air Pollution and its Health Consequences* (Sept. 2013), available at <http://www1.nyc.gov/assets/doh/downloads/pdf/environmental/air-quality-report-2013.pdf>; *see generally* City of New York, *One New York—Healthcare for Our Neighborhoods* (2016), available at <https://www1.nyc.gov/assets/home/downloads/pdf/reports/2016/Health-and-Hospitals-Report.pdf>.

59. In addition, New York and the City of New York own significant areas of public lands, whose natural communities are threatened by ozone concentrations that exceed the NAAQS.

60. EPA's Petitions Denial harms New York in several important respects.

61. First, had EPA granted the Maryland and/or Delaware section 126(b) petitions, sources upwind of New York, particularly those upwind of the New York City metropolitan area would have been required to control and reduce their emissions of ozone precursors. These reductions and controls—similar or the same as those sought in New York's own section 126(b) petition—would have provided a significant benefit to the citizens and residents of New York and particularly the New York City Metropolitan area, which continues to struggle to attain and maintain compliance with the 2008 and 2015 ozone NAAQS.

62. In addition, EPA based its Petitions Denial in part on a finding that upwind sources were already operating certain emissions controls required by EPA's prior ozone transport rulemaking, the CSAPR Update, 81 Fed. Reg. at 74,504, namely running installed Selective Catalytic Reduction (SCR) controls. *See* 83 Fed. Reg. at 50,464-68. However, data in the record and comments submitted by New York, among others, demonstrated this was not the case, and that therefore granting the section 126(b) petitions was necessary to ensure downwind

areas are receiving the full relief from upwind ozone pollution to which they are entitled.

63. Second, EPA's Petitions Denial unlawfully applied a heightened standard for section 126(b) petitions, which will make it more difficult for New York to use section 126(b) petitions to remedy interstate transport of harmful pollution. Specifically, EPA's heightened standard will impact New York's own section 126(b) petition currently pending before EPA, which names all of the upwind sources covered by the petitions submitted by Delaware and Maryland. EPA has not yet taken action on New York's petition, but it is likely to judge New York's petition by the same unlawful standards and interpretations of section 126(b) applied in the Petitions Denial.

64. Third, New York has been engaged in regulatory and judicial proceedings related to the regional control of ozone emissions for years, including submission of the petition to expand the Transport Region (and resulting litigation in this Court challenging that petition's denial), submission of New York's section 126(b) petition, and litigation over EPA's missed deadlines and incomplete implementation of the remedies provided under the Act.

65. In addition, New York participated in the regulatory comment period preceding EPA's final action on the section 126(b) petitions from Delaware and Maryland, during which the state strongly objected to EPA's proposed denial. Thus, New York has a direct and substantial interest in the outcome of the litigation with respect to its participation in the regulatory process leading to EPA's final Petitions Denial, including a compelling interest in seeing these comments properly addressed and the final rulemaking reflect the proper legal and procedural standards.

66. Accordingly, the direct and substantial interests discussed above and the harms to New York from EPA's Petitions Denial support granting the motion by New York, New Jersey and the City of New York to intervene as petitioners in all of the consolidated petitions for review.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

So declared this 4th day of December, 2018



Robert Sliwinski, P.E.

EXHIBIT A

OFFICE OF THE COMMISSIONER

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MAR 12 2018

Scott Pruitt
Administrator
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Administrator Pruitt:

The New York State Department of Environmental Conservation (DEC) is submitting the enclosed petition pursuant to section 126(b) of the Clean Air Act (CAA) because pollution from upwind sources significantly contributes to nonattainment and interferes with maintenance of the ozone National Ambient Air Quality Standards (NAAQS) in New York State. The New York-Northern New Jersey-Long Island, NY-NJ-CT area remains in nonattainment of the 2008 ozone NAAQS and is expected to be similarly designated for the 2015 ozone NAAQS; meanwhile, Chautauqua and Erie Counties in western New York are on the cusp of exceeding the 2015 NAAQS. Approval of this section 126(b) petition by the U.S. Environmental Protection Agency (EPA) would benefit the health and welfare of the millions of people that live and work in these areas.

DEC performed a modeling analysis that identified certain high-emitting stationary sources (i.e., sources that were projected to emit at least 400 tons of nitrogen oxides (NOx) in 2017 from the following nine states that significantly contribute to nonattainment or interfere with maintenance in New York State: Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia. In accordance with CAA section 126(b), DEC requests that EPA make a finding that these sources are in violation of the "good neighbor" provision of CAA section 110(a)(2)(D)(i) and that EPA establish adequate emission limits to eliminate the significant contribution from these sources to nonattainment and interference with maintenance in New York State.

New York requires its stationary sources to meet high standards of NOx control through the application of stringent Reasonably Available Control Technology emission limits. Requiring the same of upwind sources that significantly contribute to nonattainment and interfere with maintenance in New York State will provide ample public health benefits and reduce the disproportionate economic burden to NOx sources in New York State.

In accordance with EPA's endorsement of CAA section 126(b) as an effective pathway for limiting upwind states' ozone contributions in its November 3, 2017 denial of the multi-state CAA section 176A petition, DEC requests a timely approval of this petition.

Please contact Mr. Steven Flint, Director, Division of Air Resources, at (518) 402-8452 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Basil Seggos', written in a cursive style.

Basil Seggos
Commissioner

Enclosure

c: R. Ruvo, EPA
C. McCabe, EPA
M. Koerber, EPA
R. Wayland, EPA
S. Flint



**Department of
Environmental
Conservation**

NEW YORK STATE PETITION FOR A FINDING PURSUANT TO CLEAN AIR ACT SECTION 126(b)

March 2018

DIVISION OF AIR RESOURCES

Bureau of Air Quality Planning

Albany, NY 12233-3251

P: (518) 402-8396 | F: (518) 402-9035 | dar.sips@dec.ny.gov

Executive Summary

This is a petition by New York State through its Department of Environmental Conservation (DEC) for a finding under Clean Air Act (CAA) section 126(b) that certain stationary sources located in upwind states impact the ability of New York State to attain the National Ambient Air Quality Standards (NAAQS) for ozone. Specifically, upwind sources interfere with the New York-Northern New Jersey-Long Island, NY-NJ-CT area (hereafter the New York metropolitan area or NYMA) attaining the 2008 and 2015 ozone NAAQS and threaten the ability of Chautauqua County in western New York to maintain attainment of the 2008 and 2015 ozone NAAQS. This petition identifies stationary sources from the following nine states as interfering with attainment or maintenance of the 2008 and 2015 ozone NAAQS in New York State: Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia.

The NYMA remains in nonattainment of the 2008 ozone NAAQS as the area failed to attain by its initial marginal classification deadline of July 20, 2015 and monitoring data indicate it will again fail to attain by the moderate classification deadline of July 20, 2018 (based on preliminary 2015-2017 data). Chautauqua County was designated as nonattainment for the 2008 ozone NAAQS, though it currently monitors attainment. Significant levels of transported ozone will interfere with the area's ability to continue monitoring attainment and will negatively impact the area's future chances of being redesignated to attainment.

Furthermore, the NYMA is expected to be designated nonattainment for the 2015 ozone NAAQS once EPA finalizes its designations. Preliminary 2017 design values demonstrate that multiple monitors in the New York, Connecticut, and New Jersey portions of the NYMA exceed the 2015 NAAQS, which was set at a level of 0.070 parts per million (ppm).

Modeling analyses have repeatedly confirmed that there are significant ozone impacts in New York State from the upwind states whose sources are named in this petition. These sources interfere with the ability of the NYMA to attain the ozone NAAQS and Chautauqua County to maintain the NAAQS. DEC completed a modeling exercise in support of this petition that analyzed emissions from the collection of 400 ton-per-year sources in the electric generating unit (EGU), non-EGU, and oil and gas sectors, in each significantly contributing state – i.e., those states that were identified in EPA's modeling for the Cross-State Air Pollution Rule (CSAPR) as contributing ozone concentrations of at least one percent of the 2008 NAAQS (or 0.75 parts per billion (ppb) or more) to a monitor in a downwind state. The results show impacts from individual states' collection of 400 ton-per-year sources of up to 6.34 ppb in Chautauqua County and 4.97 ppb in the NYMA nonattainment area. The upwind sources' significant contributions compromise the health and welfare of the 20 million citizens living within the NYMA and the 135,000 citizens in Chautauqua County and create a disproportionate economic burden for sources of ozone precursors in New York State.

DEC is calling upon EPA to require the significantly contributing states to impose suitable emission limits on these large stationary sources that are affecting air quality in New York within the three years allowed for under section 126(c). These sources should be operating with modern nitrogen oxide (NO_x) emission controls (e.g. selective catalytic or non-catalytic reduction systems) and at emission rates commensurate with New York State's Reasonably Available Control Technology (RACT) standards, which are based on a control cost efficiency of \$5,000 per ton of NO_x removed. Given EPA's endorsement of the section 126(b) statutory option in its November 3, 2017 denial of the section 176A petition, DEC expects a timely approval of this petition.

Statutory Authority

CAA section 126(b) provides that:

Any State or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 110(a)(2)(D)(i) or this section. Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition.¹

Section 110(a)(2)(D)(i) is also known as the "good neighbor" provision. It requires each state's SIP to contain provisions prohibiting any source or other type of emissions activity within the state from emitting any air pollutant in amounts that will contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to a NAAQS. Consistent with these provisions, the burden on a state filing a petition pursuant to section 126(b) is to demonstrate that any major stationary source or group of stationary sources emits or would emit an air pollutant that leads to difficulty attaining or maintaining a NAAQS.

Within 60 days after receipt of the section 126(b) petition and after a public hearing, the Administrator must make the requested finding or deny the petition. Pursuant to CAA section 126(c), if the Administrator finds that a major source or group of sources is emitting a pollutant in violation of section 110, any source subject to the finding must cease its operation within three months, unless the Administrator permits the continued operation of the source beyond the time, conditioned on the source complying with such emission limitations and compliance schedules (containing increments of progress) as the Administrator may direct to bring about compliance with section 110. Such compliance must be brought about as expeditiously as practicable but in no case later than three years after the date of the Administrator's finding.

The term "emission limitation" means a requirement established by the state or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or

¹ Note that CAA section 126(b) references section 110(a)(2)(D)(ii); EPA attributes this to a scrivener's error, whereas the correct citation is section 110(a)(2)(D)(i). See "Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport," Final Rule; May 25, 1999; 64 FR 28267.

maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under the CAA.² The term “compliance schedule” means a schedule of required measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard.³

Background and Necessity

Ozone Formation and Health/Welfare Effects

Ozone is formed when NO_x and volatile organic compounds (VOCs) react with oxygen in the presence of sunlight and heat. Peak ozone concentrations in New York State typically occur during the May to September period when temperatures are highest. NO_x and VOC emissions from local urban sources over successive hot days combine with high-level concentrations of ozone and precursors that have been transported into the area from sources located outside the state by westerly to southerly winds.

EPA’s most recent Integrated Science Assessment (ISA) for ozone determined that a “causal” relationship exists between short-term exposure to ozone in ambient air and negative effects on the respiratory system, and that a “likely to be causal” relationship exists between long-term exposure to ozone in ambient air and respiratory effects.⁴ The ISA also determined that the relationships between short-term exposures to ozone in ambient air and both total mortality and cardiovascular effects are likely to be causal, based on expanded evidence in the recent review.⁵ Additionally, the latest review strengthened the body of evidence indicating the occurrence of respiratory effects due to long-term ozone exposure,⁶ and recent studies have increased the certainty of the association between short-term ozone concentrations and mortality in adults.⁷

Ground-level ozone can irritate lung airways and cause skin inflammation much like sunburn. Other symptoms from exposure include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. Even at very low levels, exposure to ground-level ozone can result in decreased lung function, primarily in children who are active outdoors, as well as increased hospital admissions and emergency room visits for respiratory illnesses among children and adults with pre-existing respiratory diseases (e.g., asthma). People with respiratory problems are most vulnerable to the health effects associated with ozone exposure, but even healthy people that are active outdoors can be affected when ozone levels are high.

² CAA Section 302(k)

³ CAA Section 302(p)

⁴ U.S. EPA; “Final Report: Integrated Science Assessment of Ozone and Related Photochemical Oxidants.” 2013. EPA/600/R-10/076F. P. 1-6 to 1-7.

⁵ Ibid. P. 1-7 to 1-8.

⁶ Ibid. Chapter 7.

⁷ “National Ambient Air Quality Standards for Ozone.” Final Rule. Published October 26, 2015. 80 FR 65309.

In addition to its health effects, ozone interferes with the ability of plants to produce and store nutrients, which makes them more susceptible to disease, insects, harsh weather, and other pollutants. This impacts annual crop production throughout the United States, resulting in significant losses and injury to native vegetation and ecosystems. Furthermore, ozone damages the leaves of trees and other plants, ruining the appearance of cities, national parks, and recreation areas. Ozone can also damage certain man-made materials, such as textile fibers, dyes, rubber products, and paints.

Ozone Air Quality in the NYMA and Western New York

EPA revised the primary and secondary NAAQS for ozone in 2008 to levels of 0.075 ppm, measured over an 8-hour period. Effective July 20, 2012, EPA designated the New York-N. New Jersey-Long Island, NY-NJ-CT metropolitan area as a nonattainment area for the 2008 ozone NAAQS with a marginal classification. This area consists of nine counties within New York – Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, and Westchester – along with twelve counties in New Jersey and three in Connecticut. The Jamestown, New York area, consisting solely of Chautauqua County, was also designated as marginal nonattainment.⁸

The NYMA failed to attain the 2008 NAAQS by the marginal attainment deadline of July 20, 2015 and was reclassified by EPA to moderate nonattainment effective June 3, 2016, providing another three years to attain.⁹ This established a new attainment deadline of July 20, 2018, determined with data from 2015-2017. The Jamestown nonattainment area attained the NAAQS by the marginal attainment deadline of July 20, 2015 though it remains in danger of exceeding the ozone NAAQS, particularly the 2015 standard.

New York, New Jersey, and Connecticut have all been surpassing their three-percent-per-year emission reduction requirements for the 2008 NAAQS, but are still far from reaching attainment in the NYMA. Certified monitoring data through 2016 and preliminary 2017 data indicate that the NYMA did not attain the 2008 ozone NAAQS by the moderate area deadline (effectively the end of 2017). The area's "design value monitor" (i.e., the highest-recording monitor in the area) is located in southern Connecticut and had both a 2016 design value and preliminary 2017 design value of 83 ppb. DEC submitted a reclassification request to serious nonattainment on November 13, 2017; a serious classification would provide an additional three years, until July 20, 2021 (based on 2018-2020 monitoring data), to attain the NAAQS.

EPA revised the primary and secondary ozone NAAQS again in 2015 to 0.070 ppm, measured over an 8-hour period, because the 0.075 ppm standard was not sufficiently protective of human health. DEC expects a similar nonattainment designation for the

⁸ "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." Final Rule. Published May 21, 2012; effective July 20, 2012. 77 FR 30088-30160.

⁹ "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas for the 2008 Ozone National Ambient Air Quality Standards." Final Rule. Published May 4, 2016; effective June 3, 2016. 81 FR 26697-26722.

New York-N. New Jersey-Long Island, NY-NJ-CT area as stated in the “120-day letter” issued by EPA on December 20, 2017 to Governor Andrew Cuomo, based on recent design values. This designation was expected by the October 1, 2017 statutory deadline, though as of this filing EPA has yet to issue final designations.

Given the continued inability to attain the 2008 NAAQS, the upcoming nonattainment designation for the NYMA for the 2015 NAAQS, and the potential for areas in western New York to exceed the 2008 and 2015 NAAQS, New York State requires relief from the upwind contributors named in this petition.

Transported Ozone Pollution

Complicating the strategy to reduce ground-level ozone in the NYMA is the fact that the chemical reactions that create ozone can take place while the pollutants are being transported through the air by the wind. This means elevated levels of ozone can exist many miles away from the source of their original precursor emissions. Therefore, unlike more traditional criteria pollutants (e.g., sulfur dioxide and lead, which are emitted directly and can be controlled at their source), reducing ozone concentrations locally poses additional challenges.

The high concentrations of ozone that are transported to New York State are largely the result of emissions from major stationary sources of NO_x located out-of-state. These sources are often characterized by the operation of large boilers and other units that require very tall stacks to emit the exhaust from their combustion processes. Because of the use of these tall stacks and the high temperatures of the exiting gases, enormous volumes of NO_x emissions are sent high into the atmosphere. These high concentrations of NO_x and the subsequently-formed ozone are transported aloft during the night to downwind areas like western New York and the NYMA where they combine with locally-formed ozone and precursors during the day to result in exceedances of the NAAQS.

New York State has been involved in efforts to mitigate regional transport of NO_x for decades, beginning with its participation in the Ozone Transport Commission which developed the original NO_x Budget Program. New York’s efforts continued with the Ozone Transport Assessment Group (OTAG) – a partnership between EPA, the Environmental Council of States, and various industry and environmental groups to study the effects of ozone precursor emissions on downwind areas. This partnership resulted in EPA’s October 1998 finding (commonly known as the “NO_x SIP Call”) that 22 states and the District of Columbia significantly contributed to nonattainment and maintenance issues in downwind areas and to the ozone-related health issues therein, therefore violating their “good neighbor” obligations under CAA section

110(a)(2)(D)(i)(I).¹⁰ EPA included a model NOx Budget Trading Program rule with this finding as a tool for states to meet their trading obligations.

The NOx Budget Trading Program was the first of multiple iterations of ozone-season NOx trading programs that have been implemented at the federal level in an attempt to alleviate eastern states' interstate contributions pursuant to section 110(a)(2)(D)(i)(I). The most recent of these federal programs is CSAPR, which was originally released on August 8, 2011 for the 1997 ozone NAAQS¹¹ and subsequently updated on October 26, 2016 for the 2008 ozone NAAQS.¹² CSAPR is the result of states failing to fulfill their good neighbor obligations for transport; it represents the coordinated issuance of Federal Implementation Plans (FIPs) for 22 eastern states that are linked to downwind nonattainment or maintenance areas. These FIPs require affected EGUs in each covered state to comply with the program's seasonal emissions budgets.

While the CSAPR program provides the legal and technical basis for states to eliminate their significant contributions to excessive ozone pollution, EPA has failed to implement a full, federal-level remedy to completely address the issue of transported ozone. In the CSAPR Update, EPA stated that "the EGU NOx ozone season emission budgets finalized in this action represent a *partial remedy* to address interstate emission transport for the 2008 ozone NAAQS" (emphasis added).¹³ The NYMA was one of the areas that was projected to remain in nonattainment beyond the application of the rule's NOx budgets, with monitors in Fairfield and New Haven Counties in the Connecticut portion of the area continuing to project nonattainment in 2017. Additionally, multiple additional monitors in the Connecticut and New York portions of the NYMA were projected as maintenance monitors.

Since the CSAPR Update does not fully address states' transport obligations, EPA has issued findings that all nine states named in this petition (in addition to others) failed to submit adequate good neighbor SIPs for the 2008 ozone NAAQS. Moreover, EPA has failed to fulfill its duty to issue FIPs by the two-year deadline in certain instances:

- June 2, 2016 – FIP deadline for Kentucky (EPA is under a District Court order to finalize by June 30, 2018);
- August 12, 2017 – FIP deadline for Illinois, Michigan, Pennsylvania, Virginia, West Virginia;
- July 15, 2018 – FIP deadline for Indiana, Ohio;
- August 19, 2018 – FIP deadline for Maryland.

EPA's failure to enforce states' good neighbor obligations necessitates that New York take further action for relief from interstate transport.

¹⁰ "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone." Final Rule. Published October 27, 1998; effective December 28, 1998. 63 FR 57356-57538.

¹¹ "Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals. Final Rule. Published August 8, 2011; effective October 7, 2011. 76 FR 48208-48483.

¹² "Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS." Final Rule. Published October 26, 2016; effective December 27, 2016. 81 FR 74504-74650.

¹³ *Ibid.*, 81 FR 74508.

Dunkirk Monitor (Chautauqua County) Transport Study

A recent DEC study quantified the effect of transport on the ozone design value at the Dunkirk monitor (ID 36-013-0006). This monitor, which is located in Chautauqua County in Western New York, is officially designated nonattainment for the 2008 ozone NAAQS and has the potential to exceed the 2015 ozone NAAQS. This study used a synoptic analysis including back-trajectories and ozone concentration data from EPA's Air Quality System to identify upwind pollution contributions.

The study finds that air transported into Chautauqua County on the worst air quality days is already, on average, within two ppb of – and often exceeds – the 2015 ozone standard. Consequently, given the absence of major sources in the area, this study highlights the need for ozone precursor emissions reductions from upwind states, especially sources identified in this petition that are located in Ohio, Indiana, Michigan, Kentucky, and Illinois. The study results are summarized in Table 1, while a more comprehensive discussion of the analysis is contained in Appendix A.

Table 1. Maximum Daily 8-Hour Ozone Concentrations (ppb) for Design Days with Direct Inflow

Date	Erie, PA	Dunkirk, NY	Upwind source areas
05/15/13	69	66	Chicago, Detroit
05/29/13	62	69	Ohio Valley, Cleveland
06/22/13	64	70	Ohio Valley, Cleveland
09/10/13	70	76	Chicago, Detroit, Cleveland
05/26/14	71	74	Detroit, Cleveland
06/16/14	61	71	Chicago, Detroit, Cleveland
05/03/15	65	74	Chicago, Detroit, Cleveland
05/24/15	65	71	Chicago, Detroit, Cleveland, Ohio Valley
05/24/16	70	69	Detroit
05/25/16	79	82	Chicago, Detroit, Cleveland, Ohio Valley, Pittsburgh
06/11/16	73	80	Chicago, Detroit, Cleveland, Ohio Valley
07/19/17	78	79	Chicago, Detroit
08/01/17	63	67	Detroit, Cleveland
Average	68	73	

New York State's Efforts to Control its Major Stationary Sources

The request made to EPA in this petition is to require upwind states to control major EGU and non-EGU stationary sources to an extent that mirrors the level of control for similar sources in New York. New York's inclusion in the Ozone Transport Region (OTR) requires RACT to be implemented statewide, and the severity of NYMA's ozone nonattainment results in even stricter emissions thresholds for RACT applicability in that area.

The threshold to determine economic feasibility for NO_x RACT in New York State is an inflation-adjusted \$5,000 per ton of NO_x reduced. DEC has promulgated some regulations with emission limits specific to a source category (e.g., industrial boilers under 6 NYCRR Subpart 227-2), and others that require facility-specific analyses to determine technically feasible controls within this cost threshold (e.g., cement and glass plants under 6 NYCRR Subparts 220-1 and 220-2, respectively). DEC also adopts all federal Control Techniques Guidelines and Alternative Control Techniques, except in instances where no sources exist for a particular source category, statewide.

Upwind non-OTR states have no similar mandate for installing controls at major non-EGU sources outside of moderate (or above) nonattainment areas. Emissions from EGUs are typically dictated by NO_x budgets through CSAPR rather than through state regulations. As discussed above, the CSAPR update for the 2008 ozone NAAQS is only a partial remedy to states' ozone transport obligations, since EPA focused on "immediately available and cost-effective emissions reductions that are achievable by the 2017 ozone season."¹⁴ EPA considered "cost-effective" controls to be within a threshold of \$1,400 per ton of NO_x reduced – less than a third of the economic standard that New York's major sources are held to. And by focusing only on short-term emission reductions, EPA ruled out potentially cost-effective controls that would have benefited the NYMA albeit on a slightly longer timeframe.

Additionally, CSAPR is a seasonal trading program, with compliance averaged over the entire ozone season. This method does not ensure relief to downwind states on the high electric demand days in which NO_x emissions are highest and ozone formation is at its peak. To address that concern, New York's RACT limits are based on daily (24-hour block) averages. This shorter-term averaging scheme requires emissions controls to be run continuously to meet the regulatory limits.

New York State's Attempts to Address Upwind Transport

Because EPA's NO_x trading programs do not provide a full remedy to upwind states' section 110(a)(2)(D)(i)(I) obligations, New York State has taken additional actions to curtail the ozone pollution from upwind states that is impacting public health in the NYMA.

On December 9, 2013, New York and seven other states submitted a petition to EPA pursuant to CAA section 176A to expand the OTR to include nine additional states: Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, Virginia, and West Virginia. (Note that the petition was amended on December 10, 2013 to add Pennsylvania to the list of petitioners.) The petitioning states utilized EPA's air quality contribution modeling along with their own technical analysis to demonstrate the need for the upwind states to control emissions of their ozone precursors that impact nonattainment and maintenance areas in downwind states. Expansion of the OTR

¹⁴ 81 FR 74521

would require these additional states to engage in planning discussions, and to implement control measures commensurate with those already in place in the petitioning states (e.g., vehicle inspection and maintenance programs, New Source Review, and RACT) in order to reduce emissions of ozone precursors.

However, on November 3, 2017, EPA denied the petitioning states' request, stating there are more appropriate statutory options available to address interstate transport, specifically citing CAA sections 110(a)(2)(D)(i) and 126(b). DEC is submitting this section 126(b) petition for relief from harmful and unlawful ozone pollution from upwind states consistent with EPA recommendations.¹⁵

In addition, New York State joined as plaintiff-intervenor in a suit brought by Sierra Club that addressed the "undisputed failure" of EPA to perform its CAA-mandated duty to issue a FIP to address the interstate transport from Kentucky that significantly contributes to other states' nonattainment or maintenance issues. The suit was decided in favor of Sierra Club and New York, with the decision declaring that the statute "imposed an absolute duty on the EPA to issue the FIP within two years of Kentucky's failure to adopt an adequate [SIP]."¹⁶ The court ordered EPA to complete its FIP by June 30, 2018.

Furthermore, plaintiffs New York and Connecticut filed suit on January 17, 2018 against EPA and Administrator Pruitt for similarly failing to complete transport FIPs for an additional group of 24 states, which includes five that significantly contribute to ozone nonattainment in the NYMA: Illinois, Michigan, Pennsylvania, Virginia, and West Virginia. August 12, 2017 marked the two-year deadline for EPA to issue a FIP to cover the good neighbor obligations for these states. EPA has not taken any action to fulfill its obligation. The court decision in the Kentucky suit has established that these timeframes are not negotiable.

Analysis of Significant Ozone Contributions

Methodology

New York State's analysis for this section 126(b) petition considered the highest-emitting facilities – specifically, EGU and non-EGU facilities, including from the oil and gas sector, that emit 400 tons per year or more of NO_x – from each state that significantly contributed to nonattainment or interfered with maintenance in the NYMA and/or interfered with maintenance in Chautauqua County. (DEC used a threshold of one percent of the NAAQS to determine "significant" contributions or interference,

¹⁵ A group of the petitioning states, including New York, is challenging EPA and Administrator Pruitt's denial of the section 176A petition as arbitrary and capricious and not supported by the record.

¹⁶ Order re Partial Consent Decree and Summary Judgment. U.S. District Court – Northern District of California. Sierra Club, Plaintiff, State of New York, Plaintiff-Intervenor, v. Scott Pruitt, Defendant. Case No. 3:15-cv-04328-JD. Filed May 23, 2017.

following EPA precedent.¹⁷) These high-emitting facilities are expected to have the greatest impact on the ability of the NYMA and Chautauqua County to attain and maintain the 2008 and 2015 NAAQS, and therefore can reasonably be retrofitted with control equipment or can operate existing controls more frequently in an effort to reduce NO_x.

EPA's ozone contribution modeling for the 2008 ozone NAAQS, released on September 7, 2016 in conjunction with the final CSAPR Update rule, provided the necessary information for DEC to determine which states significantly contribute to ozone nonattainment issues in the NYMA.¹⁸ Ten states were projected to contribute at least one percent of the 2008 NAAQS (i.e., 0.75 ppb) at nonattainment monitors in the NYMA in 2017: Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, Ohio, Pennsylvania, Virginia, and West Virginia. These 10 significantly contributing states formed the basis of DEC's analysis, as they violate the good neighbor provision of CAA section 110(a)(2)(D)(i).

While EPA released additional air quality modeling in October 2017 to serve as the basis for good neighbor SIPs for the 2015 NAAQS, DEC has significant concerns about the assumptions and results of this modeling – for example, the expectation that uncontrolled EGUs will greatly reduce their emission rates in the absence of enforceable limits, and the treatment of model cells containing a land/water interface. Without further analysis and enforceable commitments to support the modeled reductions, EPA's modeling does not fulfill states' obligations under CAA section 110(a)(2)(D)(i). Furthermore, CAA section 126(c) explicitly states that compliance must be met "in no case later than three years after the date of [a section 126(b)] finding." EPA's 2023 modeling does not fit this timeframe and cannot be used to support a review of this petition.

DEC utilized the 2017 Beta 2 projection inventory developed by the Mid-Atlantic Regional Air Management Association (MARAMA) to identify the facilities emitting 400 tons per year or more of NO_x in each of the 10 significantly contributing states. The 2017 EGU projection was done by MARAMA using the Eastern Regional Technical Advisory Committee (ERTAC) tool, as opposed to the Integrated Planning Model typically used by EPA in its EGU projection modeling. To ensure a complete facility list, DEC also identified sources greater than 400 tons in the 2014 National Emissions Inventory (NEI), to be accounted for in the contribution modeling with their MARAMA projected 2017 emissions, where still operating. (This explains the inclusion of some sources with projected 2017 emissions less than 400 tons.) The list of facilities included in the contribution modeling, and their projected 2017 emissions, are included as Appendix B.

¹⁷ "Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS." Final Rule. Published October 26, 2016; effective December 27, 2016. 81 FR 74508.

¹⁸ "Final CSAPR Update_Ozone Design Values & Contributions_All Sites.xlsx." Available at EPA's "Final Cross-State Air Pollution Rule Update" website: <https://www.epa.gov/airmarkets/final-cross-state-air-pollution-rule-update>

Once identified, the facilities' emissions were processed for modeling. The sources emitting at least 400 tons per year in the 2017 Beta 2 emission files were processed through the Sparse Matrix Operator Kernel Emissions (SMOKE) processor on a state-by-state basis. A baseline run was performed with the MARAMA Beta 2 emission files; a control run was then performed with the high-emitting sources for each state "zeroed out." The difference between the base and control runs represents the emissions impact from each state's collection of 400 ton-per-year sources.

The Community Multiscale Air Quality (CMAQ) model runs utilized model version 5.0.2 with CB05 gas chemistry. EPA's WRF 2011 meteorological data were used.

DEC's CMAQ modeling analysis generally followed the method described for ozone contribution modeling in EPA's Technical Support Document for the CSAPR Update, with some adjustments.¹⁹ DEC used a methodology that would represent days when ozone concentrations are approaching the NAAQS, as follows: Modeled hourly ozone concentrations were used to calculate the 8-hour daily maximum ozone (MDA8) concentration in each grid cell on each day of the two-and-a-half month modeling period. If a monitor grid cell had five days or more with MDA8 of at least 71 ppb, the maximum MDA8 difference (between the baseline and control runs) was selected. If a monitor grid cell had fewer than five days with MDA8 of at least 71 ppb, but at least five days with MDA8 of at least 60 ppb, the maximum difference of those days was selected. If there were fewer than five such days, the monitor was disregarded.

DEC chose to model a period of May 18 through July 30; while resource constraints prevented DEC from performing a complete ozone-season or annual analysis for each significantly contributing state, this scenario provides an adequate approximation of ozone impacts by capturing the majority of ozone exceedance days at the monitors of interest.

Modeled Impacts that Form Basis of Petition

The model output, summarized in Table 2, represents the maximum influence from the combined 400 ton-per-year sources from an individual state on a particular monitor. This maximum influence can be from any day over the two-and-a-half month modeling period. Due to the 60-ppb threshold utilized at each monitor described above, impacts at some monitors were not reported.

DEC's focus is on two monitors for which EPA's 2016 contribution modeling showed continued nonattainment or maintenance issues for the 2008 and 2015 NAAQS, in part attributable to upwind state contributions. It is also worth noting that the Riverhead monitor was predicted by EPA's modeling to be well below the 2008 NAAQS in 2017, but continues to exceed the standard. States contributing significant amounts of ozone to these monitors would therefore be considered in violation of the good neighbor

¹⁹ "Air Quality Modeling Technical Support Document for the Final Cross State Air Pollution Rule Update." EPA Office of Air Quality Planning and Standards. August 2016.

provision for the 2008 and 2015 NAAQS and subject to a petition pursuant to CAA section 126(b). Preliminary 2017 monitored data are also provided here as a confirmation of the continuing ozone issues and their relation to EPA's modeling predictions.

- Babylon (ID 36-103-0002), Suffolk County:
 - projected 2017 design value of 76 ppb, indicating nonattainment;
 - preliminary monitored 2017 design value of 76 ppb.
- Susan Wagner (ID 36-085-0067), Richmond County:
 - projected *maximum* design value of 77 ppb, which EPA uses to indicate maintenance;
 - preliminary monitored 2017 design value of 76 ppb.
- Riverhead (ID 36-103-0004), Suffolk County:
 - Projected 2017 design value of 70 ppb, indicating attainment;
 - Preliminary monitored 2017 design value of 76 ppb

DEC also analyzed upwind contributions to the Dunkirk monitor (ID 36-013-0006) in Chautauqua County, which is designated nonattainment for the 2008 ozone NAAQS. Although the area preliminarily monitored attainment of the NAAQS in 2017, it continues to have the potential to exceed the NAAQS – particularly the updated 2015 standards – due to transported ozone pollution.

The 400 ton-per-year sources from nine individual states were shown to have impacts that exceeded the significant contribution thresholds for the 2008 ozone NAAQS (0.75 ppb) and the 2015 ozone NAAQS (0.70 ppb) at the NYMA and/or Chautauqua County monitors described above: Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia. Modeled impacts from the 400 ton-per-year sources in New Jersey proved to not significantly contribute to any nonattainment or maintenance monitors.

Table 2. NYMA and Upstate Impacts from 400 Ton-per-Year Sources (Contributions in ppb)

	Monitoring Site	County	AQS Code	Latitude	Longitude	IL	IN	KY	MD	MI	NJ	OH	PA	VA	WV
NYMA	IS 52*	Bronx	36-005-0110	40.81618	-73.9020	0.192	0.348	0.264	0.716	0.773	0.526	1.077	4.401	0.911	2.006
	Pfizer Lab	Bronx	36-005-0133	40.86790	-73.8781	0.183	1.037	0.693	0.559	0.807	0.145	1.197	2.441	0.624	1.888
	CCNY*	New York	36-061-0135	40.81976	-73.9483	0.192	0.348	0.264	0.716	0.773	0.526	1.077	4.401	0.911	2.006
	Queens College 2	Queens	36-081-0124	40.73614	-73.8215	0.221	0.351	0.404	0.848	0.729	0.594	0.928	3.760	0.847	1.280
	Susan Wagner HS	Richmond	36-085-0067	40.59664	-74.1253	0.205	1.012	0.727	1.509	0.684	0.477	1.350	4.660	0.807	2.273
	Rockland County	Rockland	36-087-0005	41.18208	-74.0282	0.043	0.088	0.065	0.454	0.494	0.283	0.681	4.968	0.346	1.448
	Babylon	Suffolk	36-103-0002	40.74529	-73.4192	0.257	0.516	0.476	0.873	0.641	0.328	0.910	1.978	0.586	0.578
	Riverhead	Suffolk	36-103-0004	40.96078	-72.7124	0.300	0.559	0.252	1.416	0.354	0.450	0.684	1.331	0.929	0.528
	Holtsville	Suffolk	36-103-0009	40.82799	-73.0575	0.159	0.339	0.228	1.160	0.617	0.364	0.739	1.266	0.456	0.335
	White Plains	Westchester	36-119-2004	41.05192	-73.7637	0.040	0.350	0.627	0.798	0.464	0.147	1.109	3.638	0.350	1.554
Upstate	Dunkirk	Chautauqua	36-013-0006	42.49963	-79.3188	0.806	2.794	1.379	0.049	1.498	0.000	6.343	0.049	0.819	0.155
	Millbrook	Dutchess	36-02-70007	41.78555	-73.7414	0.037	0.087	0.044	0.875	0.186	0.250	1.658	3.486	0.167	0.571
	Amherst	Erie	36-029-0002	42.99328	-78.7715	0.644	4.207	1.479	0.053	1.449	0.000	4.936	0.021	0.323	0.095
	Whiteface Mt.	Essex	36-031-0002	44.36608	-73.9031	0.740	1.072	0.227	0.029	1.402	0.002	1.424	0.133	0.220	0.569
	Rochester 2	Monroe	36-055-1007	43.14618	-77.5482	0.370	1.195	0.365	0.035	1.770	0.005	2.497	0.194	0.355	0.973
	Middleport	Niagara	36-063-1006	43.22386	-78.4789	0.350	1.005	1.550	0.155	1.524	0.005	3.076	0.138	0.303	0.836
	East Syracuse	Onondaga	36-067-1015	43.05235	-76.0592	0.986	1.127	0.367	0.238	0.482	0.003	1.033	0.677	0.338	1.058
	Valley Central HS	Orange	36-071-5001	41.52375	-74.2153	0.010	0.028	0.028	0.190	0.280	0.743	1.771	3.641	0.153	0.520
	Fulton	Oswego	36-075-0003	43.28428	-76.4632	0.790	0.819	0.176	0.050	0.799	0.003	1.167	0.351	0.311	0.977
	Mt. Ninham	Putnam	36-079-0005	41.45589	-73.7098	0.040	0.082	0.046	0.847	0.340	0.169	0.627	4.223	0.320	1.148
Williamson	Wayne	36-117-3001	43.23086	-77.1714	0.526	0.592	0.102	0.054	1.209	0.004	1.980	0.331	0.283	0.887	

Significant contribution under 2008 NAAQS (> 0.75 ppb)

Significant contribution under 2015 NAAQS (> 0.70 ppb)

*Shared grid cell for IS52 and CCNY results in identical concentrations

Significant transport contributions are projected to occur at all ozone monitors within the NYMA. The Susan Wagner monitor in Staten Island is of particular interest to DEC because it often records the highest ozone concentrations in the area despite being upwind of New York City's central business district, indicating a heavy transport component. EPA's 2016 transport modeling for the 2008 NAAQS attributed a mere 7.0 percent of the 2017 average design value to New York State. These modeling results demonstrate a significant transport contribution from the high-emitting stationary sources in states as far away as Indiana.

Upstate monitors are also impacted by the high-emitting stationary sources in these significantly contributing states. The monitors in western New York exhibit especially high impacts – particularly the Amherst (Erie County) and Dunkirk (Chautauqua County) monitors, which show major contributions from upwind states. Per EPA's 2016 contribution modeling, 11.8 percent of the ozone contribution to the 2017 average design value at the Amherst monitor is attributed to New York State sources; meanwhile, a mere 2.0 percent of the contribution at Dunkirk comes from New York State. Each area has a history of ozone nonattainment, and may ultimately exceed the 2015 NAAQS depending on ozone concentrations in future years. Based on the above, it is clear that emissions from these significantly contributing upwind states' large sources could be the difference between attainment and nonattainment in these areas, particularly for the 2015 NAAQS.

Included as appendices are plots that display the modeled impacts on New York State monitors from each state's high-emitting sources: Appendix C features each state's highest impact on any New York State monitor on any day. New Jersey is excluded from this appendix since it did not significantly contribute to any nonattainment or maintenance monitors. Appendix D displays the maximum impacts on the Susan Wagner (Richmond County) monitor from each state whose collective 400 ton-per-year sources significantly contributed to it – i.e., Indiana, Kentucky (for the 2015 NAAQS), Maryland, Ohio, Pennsylvania, Virginia, and West Virginia.

Modeled Impacts in Connecticut and New Jersey Portions of Nonattainment Area

Because portions of Connecticut and New Jersey are part of the NYMA nonattainment area, upwind states' ozone impacts on those states' monitors are also of concern to DEC. Table 3 summarizes the modeled impacts from the 400 ton-per-year stationary sources from each upwind state on NYMA monitors in Connecticut and New Jersey.

Of greatest note are the impacts on the Connecticut monitors identified in EPA's 2016 transport modeling for the 2008 ozone NAAQS as nonattainment or maintenance monitors in 2017. Again, preliminary 2017 monitored data are provided here as a confirmation of the continuing ozone issues predicted by EPA's modeling – in some cases, preliminary monitored values are much higher than modeled predictions.

- Westport (ID 09-001-9003), Fairfield County:
 - projected 2017 design value of 76 ppb, indicating nonattainment;

- preliminary monitored 2017 design value of 83 ppb.
- Madison Beach (ID 09-009-9002), New Haven County:
 - projected 2017 design value of 76 ppb, indicating nonattainment;
 - preliminary monitored 2017 design value of 82 ppb.
- Stratford (ID 09-001-3007), Fairfield County:
 - projected *maximum* design value of 79 ppb, indicating maintenance status;
 - preliminary monitored 2017 design value of 83 ppb.
- Greenwich (ID 09-001-0017), Fairfield County:
 - projected *maximum* design value of 76 ppb, indicating maintenance status;
 - preliminary monitored 2017 design value of 79 ppb.

These results further support the inclusion of sources from Maryland, Michigan, Ohio, Pennsylvania, and Virginia in this petition.

As with the Riverhead monitor in Suffolk County, New York, additional monitors in Connecticut have preliminarily monitored nonattainment in 2017 despite having been predicted to attain in 2017 by EPA's modeling:

- Danbury (ID 09-001-1123), Fairfield County:
 - projected design value of 71 ppb;
 - preliminary monitored 2017 design value of 77 ppb.
- Middletown (ID 09-007-0007), Middlesex County:
 - projected design value of 69 ppb,
 - preliminary monitored 2017 design value of 79 ppb.
- New Haven (ID 09-009-0027), New Haven County:
 - projected design value of 66 ppb,
 - preliminary monitored 2017 design value of 77 ppb.

Table 3. Connecticut and New Jersey Impacts from 400 Ton-per-Year Sources (Contributions in ppb)

	Monitoring Site	County	AQS Code	Latitude	Longitude	IL	IN	KY	MD	MI	NJ	OH	PA	VA	WV
Connecticut	Greenwich	Fairfield	09-001-0017	41.00361	-73.58500	0.211	0.579	0.431	0.670	0.906	0.385	0.833	2.086	1.282	0.669
	Danbury	Fairfield	09-001-1123	41.39917	-73.44310	0.200	0.821	0.527	1.087	0.401	0.162	0.672	3.674	0.453	1.309
	Stratford	Fairfield	09-001-3007	41.15250	-73.10310	0.196	0.535	0.323	1.693	0.513	0.448	0.631	1.660	0.636	0.587
	Westport	Fairfield	09-001-9003	41.11833	-73.33670	0.147	0.567	0.354	1.715	0.506	0.464	0.663	1.641	0.689	0.568
	Middletown	Middlesex	09-007-0007	41.55222	-72.63000	0.148	0.365	0.251	0.976	0.392	0.253	0.349	1.860	0.393	0.092
	New Haven	New Haven	09-009-0027	41.30140	-72.90290	0.183	0.455	0.226	1.732	0.551	0.340	0.649	1.643	0.575	0.594
	Madison Beach	New Haven	09-009-9002	41.26083	-72.55000	0.330	0.635	0.215	2.362	0.680	0.287	0.549	1.570	0.776	0.511
	New Jersey	Leonia	Bergen	34-003-0006	40.87044	-73.99200	0.118	0.979	0.674	0.654	0.383	0.148	0.779	3.907	0.419
Newark Firehouse		Essex	34-013-0003	40.72099	-74.19290	0.207	1.002	0.719	0.544	0.730	0.085	1.469	5.722	0.691	2.238
Bayonne		Hudson	34-017-0006	40.67025	-74.12610	0.197	0.982	0.695	0.750	0.751	0.262	1.263	4.839	0.617	2.403
Flemington		Hunterdon	34-019-0001	40.51526	-74.80670	0.195	0.529	0.453	0.631	0.916	0.286	1.559	5.195	0.304	2.539
Rutgers Univ.		Middlesex	34-023-0011	40.46218	-74.42940	0.248	0.477	0.766	1.416	0.812	0.494	1.106	3.593	0.584	2.724
Monmouth Univ.		Monmouth	34-025-0005	40.27765	-74.00510	0.247	0.622	0.700	0.732	1.006	0.340	1.594	4.439	0.248	1.596
Chester		Morris	34-027-3001	40.78763	-74.67630	0.189	1.425	0.805	0.332	0.691	0.002	1.324	5.839	0.272	1.965
Ramapo		Passaic	34-031-5001	41.05862	-74.25550	0.039	0.081	0.057	0.399	0.430	1.253	0.724	5.286	0.378	1.560
Columbia WMA		Warren	34-041-0007	40.92458	-75.06780	0.183	0.330	0.003	0.156	0.746	0.650	0.954	4.777	0.197	2.433

Significant contribution under 2008 NAAQS (> 0.75 ppb)

Significant contribution under 2015 NAAQS (> 0.70 ppb)

Request of EPA

Pursuant to CAA section 126(b), DEC requests that Administrator Pruitt take the following action on the major NO_x sources named in this petition to assist New York State with attaining and maintaining the 2008 and 2015 ozone NAAQS: First, EPA should make a finding within the statutorily-mandated 60 days that the groups of identified sources in each of the nine named states significantly contribute to nonattainment or interfere with maintenance of the 2008 and 2015 ozone NAAQS in violation of CAA section 110(a)(2)(D)(i). Second, EPA should establish enforceable emission limitations for the major NO_x sources listed in Appendix B at levels designed to prevent them from significantly contributing to air pollution in New York State, and establish a compliance schedule, including increments of progress, to ensure that the named major NO_x sources comply with the emission limitations as expeditiously as practicable, but no later than three years provided by section 126(c).

DEC notes that some stationary sources named in this petition (e.g., sources that were controlled as a compliance strategy for CSAPR or a previous trading program) may already operate with a NO_x emission rate equivalent to RACT as defined by New York State, which bases its presumptive limits and facility-specific control analyses on a standard of \$5,000 per ton of NO_x reduced. In these instances, DEC requests that EPA establish enforceable daily emission limit during the ozone season to require the sources to operate as they are currently operating, to prevent emission controls from being turned off, like in the case of a CSAPR budget surplus.

Appendix B includes average emission rates by EGU facility for the 2014 to 2016 period (these data are unavailable for non-EGUs); highlighted in green are three-year average emission rates less than or equal to 0.15 lb/mmBtu, which DEC considers to be in line with RACT. For the remainder of the facilities with emission rates highlighted in red, DEC requests that EPA establishes permanent and enforceable NO_x emission limits based on its determination of available cost-effective controls.

Appendix A

Additional Details of Dunkirk Contribution Study

Dunkirk Contribution Study Methodology:

- Design days (days considered in the calculation of the design value, or the four days with the largest daily maximum 8-hour ozone concentrations) were identified for the Dunkirk monitor each year from 2013 to 2017.
- Long-range (120 hour) HYSPLIT back-trajectories were used to single out the design days that had direct inflow of air across the New York State border (fewer than three hours in New York State, and in the previous five days had not crossed the state or streamed along the boundaries);
 - 13 of 20 design days met these criteria. (Even in the remaining seven cases there is some inflow, though it is combined with an unknown amount of local pollution.)
- These long-range trajectories were cross-referenced with a NASA map of tropospheric column NO_x concentrations to identify the probable source areas of pollution arriving at the Dunkirk monitor.
- Short-range (24 hour) HYSPLIT back-trajectories were then utilized to ensure incoming air flows were steady on the design days, and to assess the nearby Erie, Pennsylvania monitor as an upwind site.
 - The proximity of the Erie site makes it representative of the air quality entering western New York State on these stable, direct inflow days.
- The table below provides a detailed summary of the study results; figures on the following pages support the above details.

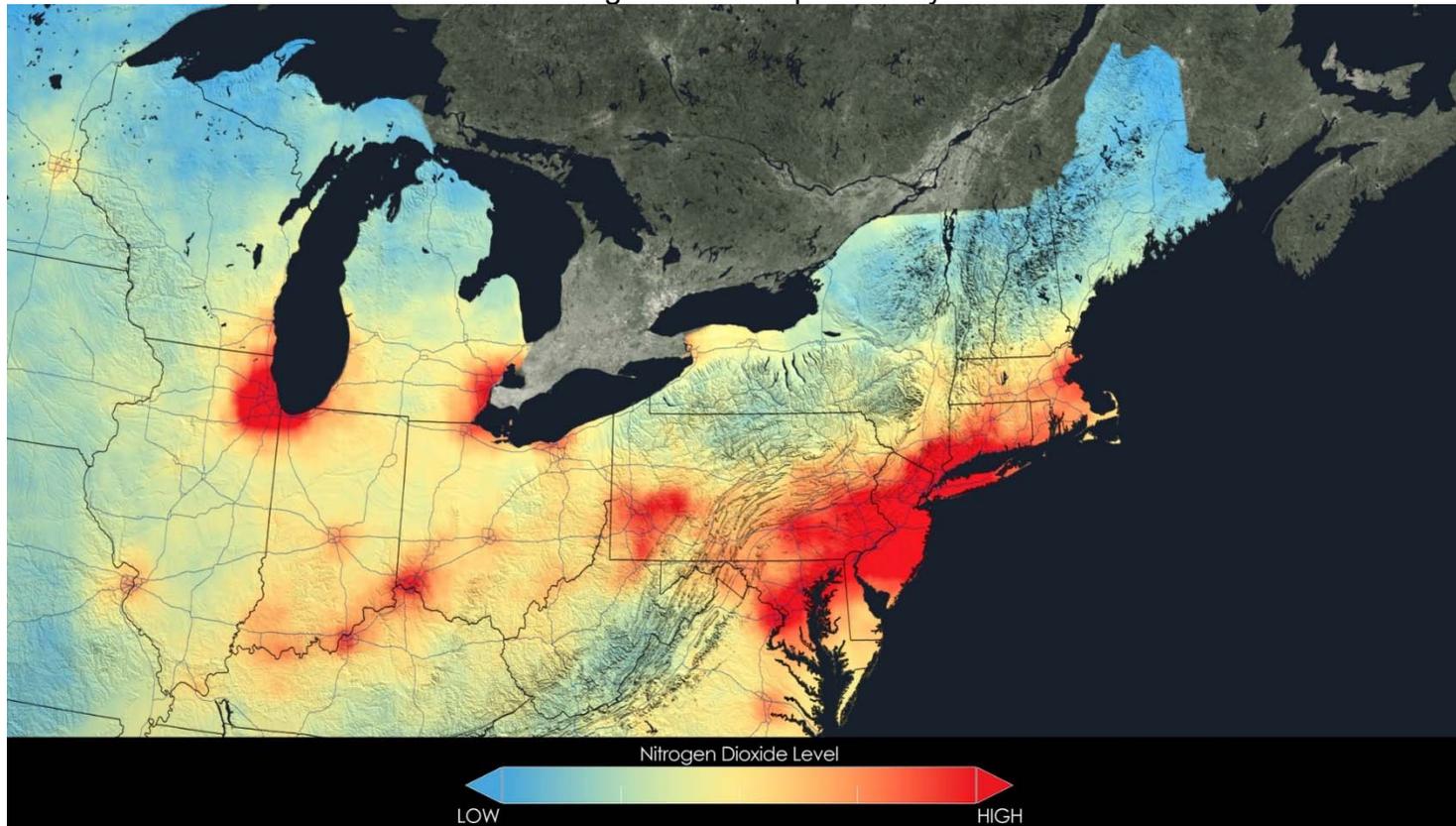
Date	Air flow type	Upwind sources	Erie daily max 8-hr ozone (ppb)	Dunkirk daily max 8-hr ozone (ppb)
5/15/2013	Inflow	Chicago, Detroit	69	66
5/29/2013	Inflow	Ohio Valley, Cleveland	62	69
6/22/2013	Inflow	Ohio Valley, Cleveland	64	70
09/10/2013	Inflow	Chicago, Detroit, Cleveland	70	76
4/21/2014	Recirculation	Chicago, Detroit, Ohio Valley, Pittsburgh, New York State	69	70
05/26/2014	Inflow	Detroit, Cleveland	71	74
06/16/2014	Inflow	Chicago, Detroit, Cleveland	61	71
6/28/2014	Recirculation	Ohio Valley, Cleveland, Pittsburgh, New York State	67	66
05/03/2015	Inflow	Chicago, Detroit, Cleveland	65	74
05/08/2015	Stagnation	Ohio Valley, Pittsburgh	75	78
05/24/2015	Inflow	Chicago, Detroit, Cleveland, Ohio Valley	65	71
09/16/2015	Stagnation	Chicago, Detroit, Cleveland, Ohio Valley	74	74
5/24/2016	Inflow	Detroit	70	69
05/25/2016	Inflow	Chicago, Detroit, Cleveland, Ohio Valley, Pittsburgh	79	82
06/11/2016	Inflow	Chicago, Detroit, Cleveland, Ohio Valley	73	80
06/19/2016	Recirculation	Cleveland, New York State	65	73
6/9/2017	Recirculation	Detroit, Cleveland, New York State	56	66
6/10/2017	Recirculation	Chicago, Cleveland, Ohio Valley, New York State	65	77
7/19/2017	Inflow	Chicago, Detroit	78	79
8/1/2017	Inflow	Detroit, Cleveland	63	67
Average of Direct Inflow Events:			68	73

Average tropospheric column concentrations of nitrogen dioxide for 2011

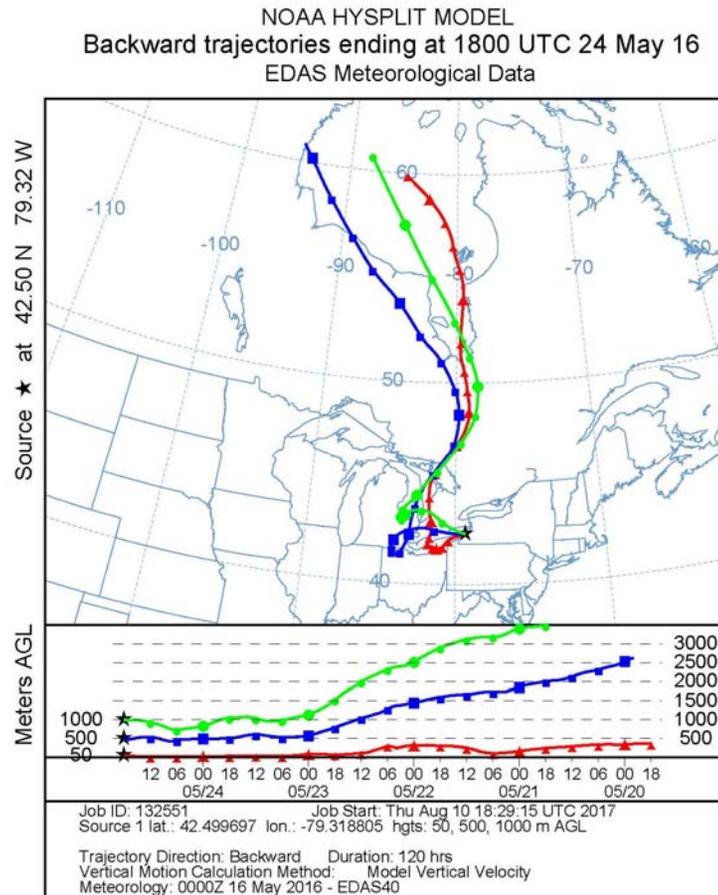
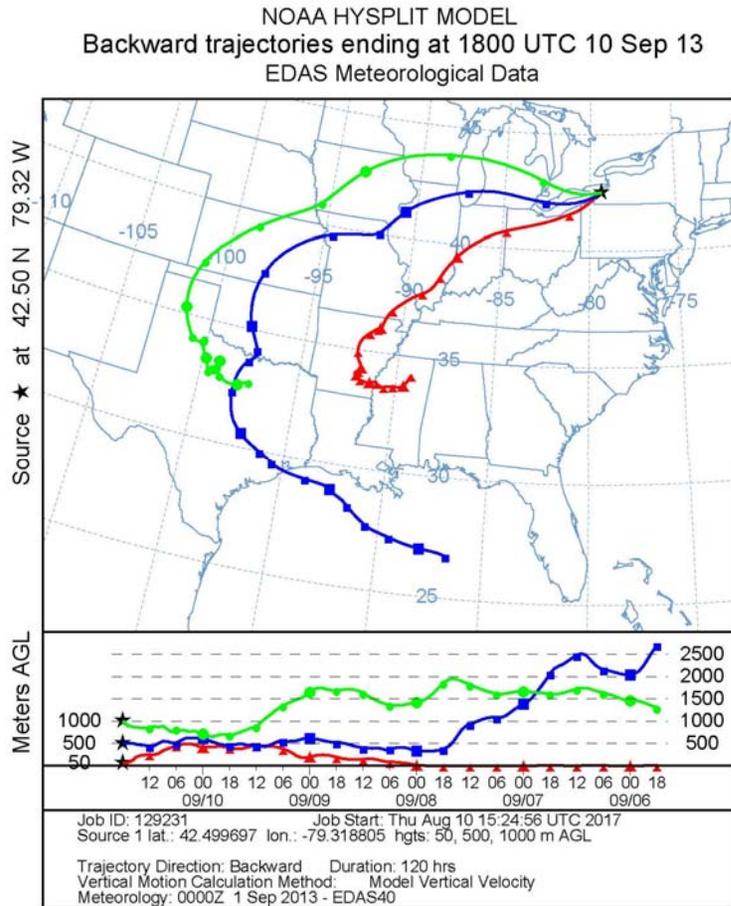
Source: NASA Aura satellite

Major pollution source areas:

- Metropolitan Chicago
- Metropolitan Detroit / Windsor
- Metropolitan Cleveland
- Ohio Valley, along Indiana and Kentucky
- Metropolitan Pittsburgh
- Northeast Coastal Corridor extending from Chesapeake Bay to Greater Boston



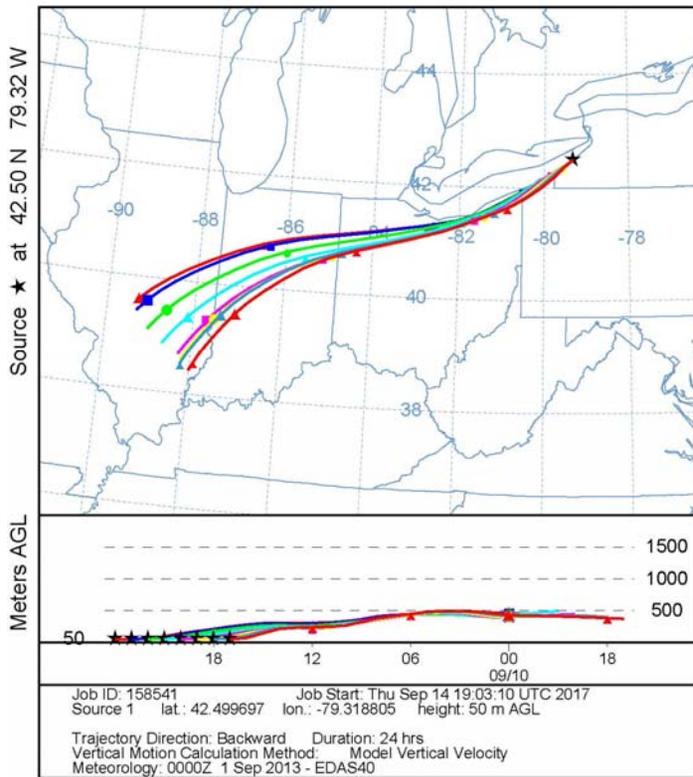
Examples of WSW (September 10, 2013) and WNW (May 24, 2016) flow into Dunkirk
 (120-hour back-trajectories starting over Dunkirk at 2 p.m. local time)



Red = starting at 50m; **Blue** = starting at 500m; **Green** = starting at 1000m

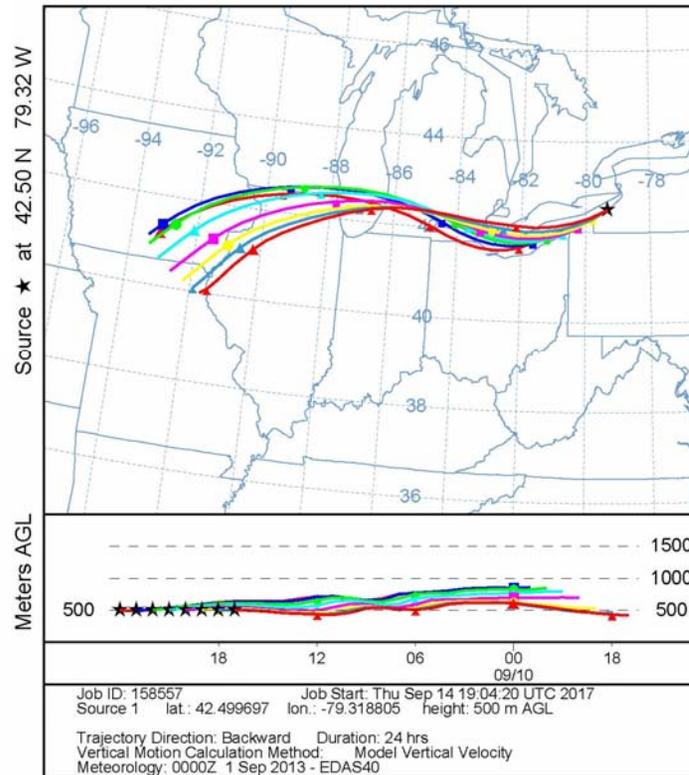
24-Hour Dunkirk Trajectories for each hour of 8-hour period defining daily max 8-hour ozone on September 10, 2013 (WSW inflow)

NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Sep 13
EDAS Meteorological Data



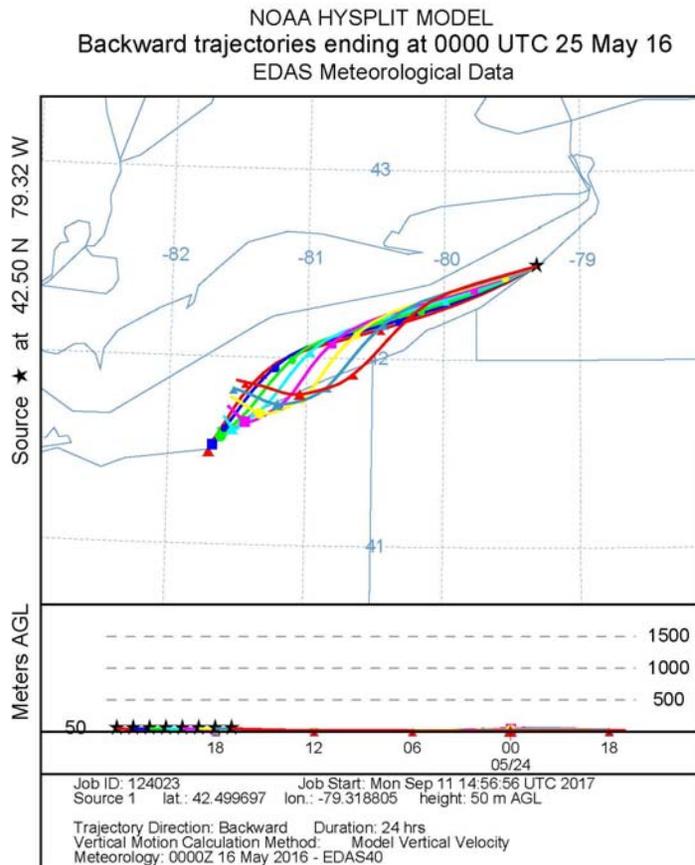
50m starting level

NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Sep 13
EDAS Meteorological Data

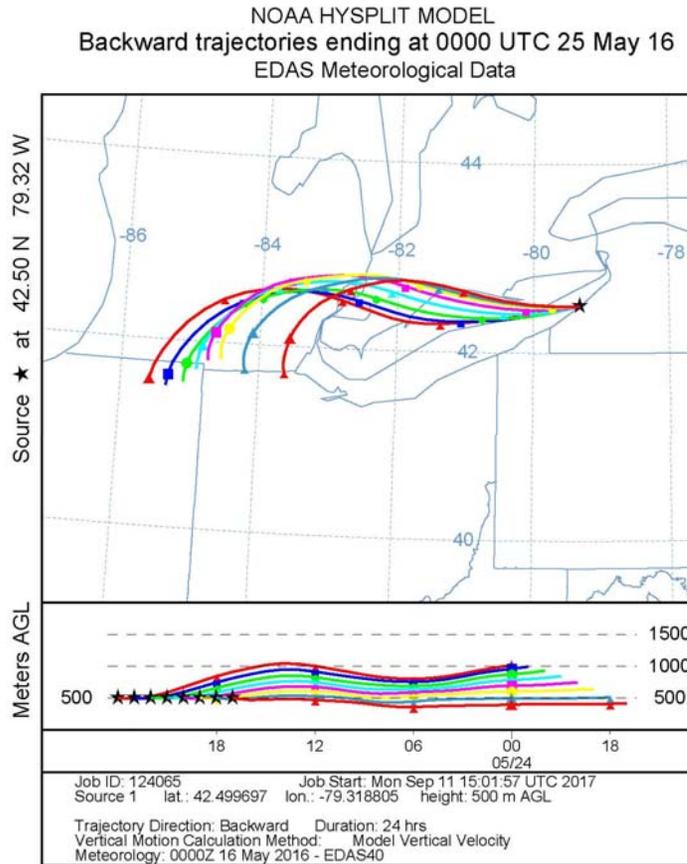


500m starting level

24-Hour Dunkirk Trajectories for each hour of 8-hour period defining daily max 8-hour ozone on May 24, 2016 (WNW inflow)

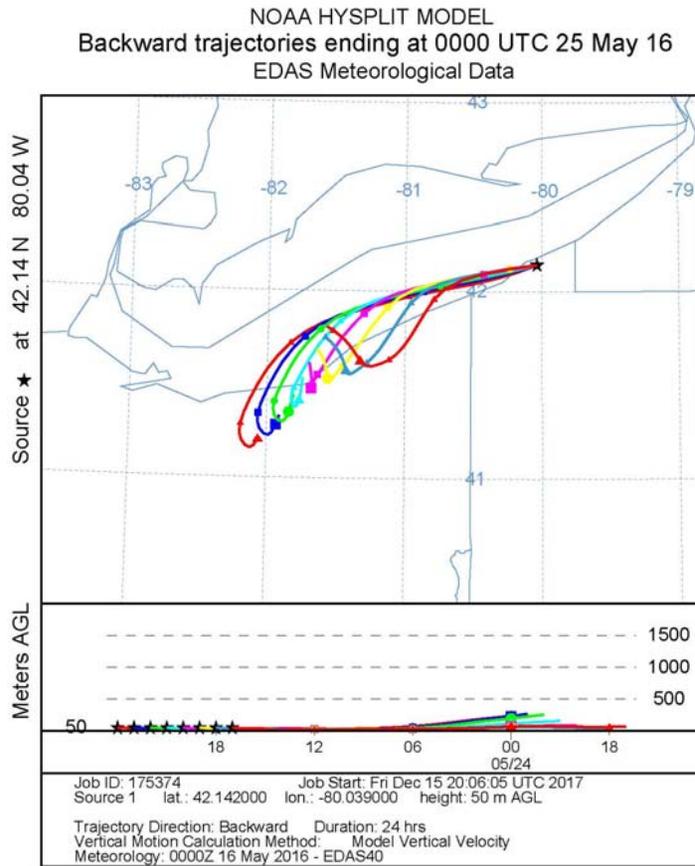


50m starting level

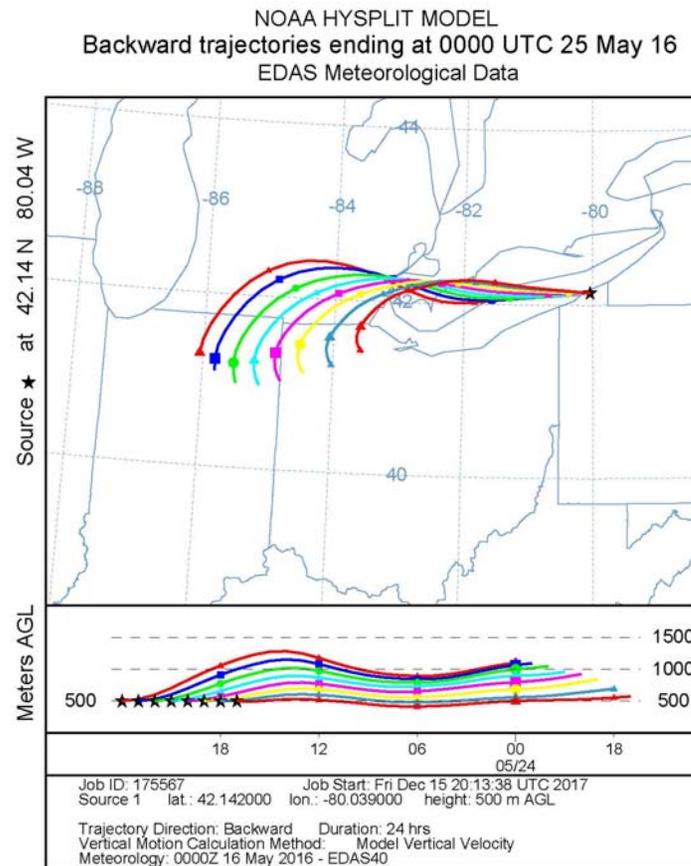


500m starting level

24-Hour Erie Trajectories for each hour of 8-hour period defining daily max 8-hour ozone on May 24, 2016 (WNW inflow)



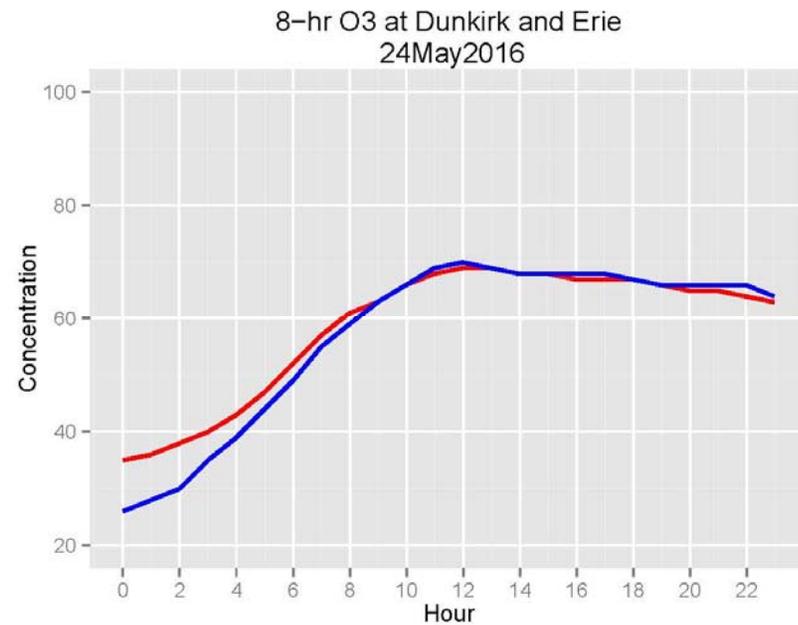
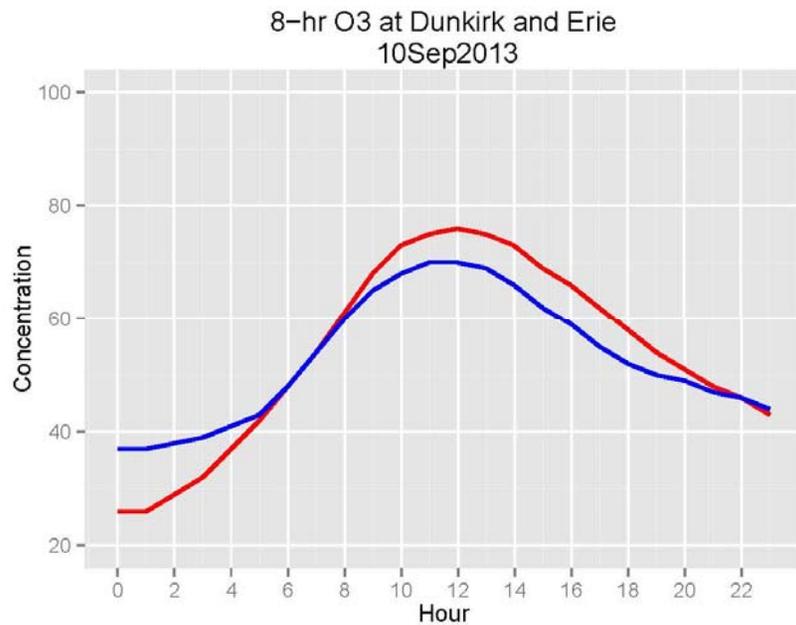
50m starting level



500m starting level

Time Series of 8-hour ozone averages for Dunkirk (red) and Erie (blue)
September 10, 2013 (WSW flow) and May 24, 2016 (WNW flow)

- The purpose of these plots was to confirm the short-term trajectory conclusion that the Dunkirk and Erie monitors experience the same air mass
- The daily cycle and maximum values look similar, and we conclude the monitors track each other



Appendix B

List of 400 Ton-per-Year Stationary Sources Significantly Contributing to
Nonattainment and Interfering with Maintenance in New York State

Electric Generating Units Facility List

State	Plant ID	Plant Name	Projected	2014		2014	2015		2015		2016		2016		2014-2016		
			2017 NOx	NOx	Heat Input	NOx Rate	NOx	Heat Input	NOx Rate	NOx	Heat Input	NOx Rate	Avg NOx	Avg NOx Rate	(Tons)	(lb/mmBtu)	
			(Tons)	(Tons)	(mmBtu)	(lb/mmBtu)	(Tons)	(mmBtu)	(lb/mmBtu)	(Tons)	(mmBtu)	(lb/mmBtu)	(Tons)	(mmBtu)	(lb/mmBtu)	(Tons)	(lb/mmBtu)
IL	8199411	Powerton	5,754.9	5,794.6	99,939,300	0.116	3276.9	65,593,748	0.100	2956.1	54,532,488	0.108	4,009.2		0.108		
IL	7808911	Joppa Steam	4,755.3	4,024.2	75,405,102	0.107	2965.3	53,765,200	0.110	1895.1	35,325,584	0.107	2,961.5		0.108		
IL	5422711	E D Edwards	3,592.3	2,432.8	39,374,995	0.124	2,140.8	30,446,795	0.141	1,762.6	28,192,302	0.125	2,112.1		0.130		
IL	7792311	Waukegan	2,423.4	1,611.2	30,076,648	0.107	1130.9	19,724,689	0.115	1031.1	18,926,608	0.109	1,257.7		0.110		
IL	10857911	Prairie State Generating Company	2,277.8	2,806.3	95,524,110	0.059	3625.4	112,745,247	0.064	3547.3	111,772,257	0.063	3,326.3		0.062		
IL	1929211	Kincaid Station	2,029.5	1,968.2	65,281,618	0.060	1701.5	54,898,947	0.062	1478.3	47,771,596	0.062	1,716.0		0.061		
IL	2587011	Newton	1,952.3	2,898.0	65,754,869	0.088	2195.1	50,394,878	0.087	1618.5	36,018,005	0.090	2,237.2		0.088		
IL	7954611	Baldwin Energy Complex	1,830.4	4,703.5	119,159,388	0.079	4247.6	108,232,067	0.078	4039.3	102,132,534	0.079	4,330.1		0.079		
IL	8164511	Marion	1,649.6	3,510.7	23,665,636	0.297	1179.3	24,284,063	0.097	915.7	21,839,993	0.084	1,868.5		0.159		
IL	4685311	Hennepin Power Station	1,561.6	1,366.2	18,729,022	0.146	1210.1	17,390,110	0.139	1202.6	16,513,451	0.146	1,259.6		0.144		
IL	7340311	Coffeen	1,422.1	1,878.6	56,129,000	0.067	1614.6	49,522,655	0.065	1697.1	48,562,151	0.070	1,730.1		0.067		
IL	7337411	Havana	1,132.8	1,180.9	31,583,549	0.075	892.1	23,344,525	0.076	1188.4	30,279,146	0.078	1,087.1		0.077		
IL	3206511	Duck Creek	1,106.8	1,065.1	22,385,698	0.095	1012.3	22,722,935	0.089	1070.5	23,470,382	0.091	1,049.3		0.092		
IL	7377311	Dallman	1,027.9	1,104.8	27,685,809	0.080	822.1	23,348,484	0.070	773.0	20,954,721	0.074	900.0		0.075		
IL	8018111	Will County	921.9	2,131.0	46,874,588	0.091	1371.8	30,636,969	0.090	1052.2	22,944,134	0.092	1,518.4		0.091		
IL	7973011	Midwest Generations-Joliet Station 29 and 9*	75.7	3,329.8	66,415,064	0.100	3507.1	72,615,108	0.097	960.8	20,298,812	0.095	2,599.2		0.097		
*Listed separately in EPA's CAMD; emissions combined here																	
IN	8017211	Rockport	20,637.9	19,727.5	164,635,674	0.240	13,921.8	127,626,833	0.218	12,888.1	118,678,065	0.217	15,512.4		0.225		
IN	7363111	Gibson	14,623.7	14,292.2	173,662,612	0.165	10,834.0	143,438,239	0.151	13,190.1	164,635,699	0.160	12,772.1		0.159		
IN	7744211	Clifty Creek	11,252.3	9,132.0	62,198,852	0.294	6,755.6	55,565,640	0.243	9,355.4	54,692,411	0.342	8,414.3		0.293		
IN	7362411	Petersburg	9,945.9	13,047.8	118,170,716	0.221	12,426.8	99,369,897	0.250	10,813.2	104,265,688	0.207	12,095.9		0.226		
IN	7957011	R M Schahfer Generating Station	7,405.7	7,115.9	93,459,227	0.152	5,172.3	67,544,523	0.153	4,396.6	55,982,713	0.157	5,561.6		0.154		
IN	7248511	Cayuga	7,118.9	8,692.1	49,786,770	0.349	10,508.1	54,248,930	0.387	12,369.6	63,915,408	0.387	10,523.3		0.375		
IN	4147311	Wabash River	4,187.1	3,351.8	27,604,598	0.243	3,541.1	27,558,797	0.257	941.9	8,723,105	0.216	2,611.6		0.239		
IN	8396211	Merom	3,447.2	2,043.7	66,859,729	0.061	1,619.8	54,494,321	0.059	1,942.7	64,678,583	0.060	1,868.7		0.060		
IN	7376611	Bailly Generating Station	1,862.2	1,726.3	27,374,470	0.126	1,072.3	18,063,606	0.119	1,345.2	23,532,548	0.114	1,381.3		0.120		
IN	8166111	A B Brown Generating Station	1,843.7	2,866.5	33,596,427	0.171	2,138.6	28,556,215	0.150	1,694.0	24,810,718	0.137	2,233.1		0.152		
IN	8183111	Alcoa Allowance Management Inc	1,673.9	10,780.1	64,676,328	0.333	10,440.1	64,401,854	0.324	6,837.3	43,417,012	0.315	9,352.5		0.324		
IN	8011511	Michigan City Generating Station	1,504.0	1,241.1	26,633,260	0.093	793.9	16,191,050	0.098	815.4	18,745,645	0.087	950.1		0.093		
IN	4478911	Edwardsport	1,405.3	698.8	22,534,424	0.062	841.2	25,943,302	0.065	761.5	25,038,478	0.061	767.2		0.063		
IN	8183011	F B Culley Generating Station	1,061.9	1,344.0	19,437,698	0.138	870.3	17,553,073	0.099	1,108.4	14,796,643	0.150	1,107.6		0.129		
IN	7742411	R Gallagher	678.3	1,656.7	9,229,760	0.359	940.4	5,575,423	0.337	648.5	3,783,511	0.343	1,081.9		0.346		
IN	7255211	IP&L Harding Street Station	55.4	4,428.7	42,199,009	0.210	2,480.6	36,427,503	0.136	1,036.2	23,205,770	0.089	2,648.5		0.145		
IN	8225111	IP&L Eagle Valley Station	44.7	1,264.8	7,773,806	0.325	427.3	2,577,054	0.332	182.9	1,199,471	0.305	625.0		0.321		
KY	6037011	Shawnee	15,026.4	12,331.2	78,513,005	0.314	9,152.6	74,888,248	0.244	11,002.1	79,272,414	0.278	10,828.7		0.279		
KY	7353711	Mill Creek	8,122.2	11,213.1	89,685,506	0.250	8,504.3	81,668,897	0.208	6,885.6	81,500,384	0.169	8,867.6		0.209		
KY	5198511	Ghent	7,485.5	10,721.3	130,792,867	0.164	7,779.0	117,810,231	0.132	8,431.2	118,378,402	0.142	8,977.2		0.146		
KY	5343711	Coleman	6,496.0	2,151.7	12,069,402	0.357	N/A	N/A	N/A	N/A	N/A	N/A	2,151.7		0.357		
KY	5196711	Paradise	4,252.6	9,465.4	145,665,511	0.130	7,493.4	128,545,281	0.117	7,583.5	110,873,424	0.137	8,180.8		0.128		
KY	6098611	R D Green	3,943.4	4,499.0	38,254,957	0.235	3,425.0	29,142,734	0.235	3,715.4	31,753,310	0.234	3,879.8		0.235		
KY	5891711	Elmer Smith	3,880.9	7,347.6	24,545,102	0.599	4,358.3	23,435,083	0.372	3,053.7	21,265,846	0.287	4,919.9		0.419		
KY	7335511	H L Spurlock	3,581.3	3,352.2	86,044,311	0.078	2,777.5	71,519,246	0.078	3,398.7	87,409,219	0.078	3,176.2		0.078		
KY	6040811	East Bend	2,767.1	4,166.2	32,985,031	0.253	5,982.3	45,601,205	0.262	3,511.7	41,537,357	0.169	4,553.4		0.228		
KY	5933111	E W Brown	2,196.8	3,375.4	38,187,089	0.177	2,812.1	33,843,902	0.166	2,258.8	28,303,431	0.160	2,815.4		0.168		
KY	5742811	Trimble County	2,066.6	3,364.9	81,220,604	0.083	2,934.7	89,495,195	0.066	2,905.5	84,158,609	0.069	3,068.4		0.072		
KY	5787711	John S. Cooper	1,508.9	863.1	9,668,046	0.179	628.6	7,796,544	0.161	559.8	7,032,680	0.159	683.9		0.166		
KY	5523111	William C. Dale	1,359.8	41.6	204,330	0.408	102.1	510,292	0.400	N/A	N/A	N/A	71.9		0.404		

KY	5561611 D B Wilson	1,067.6	1,034.3	33,064,392	0.063	1,305.9	39,941,780	0.065	1,152.0	36,240,652	0.064	1,164.0		0.064
KY	6067211 HMP&L Station 2	836.2	1,093.2	24,899,181	0.088	976.7	16,279,955	0.120	1,960.8	20,082,196	0.195	1,343.6		0.134
KY	5702411 Louisville Gas & Electric Co., Cane Run Stn	89.4	4,448.2	26,387,888	0.337	1,639.7	25,725,464	0.127	427.5	31,986,742	0.027	2,171.8		0.164
KY	6019011 Kentucky Power Co-Big Sandy Plant	2.0	4,130.5	41,313,164	0.200	3,821.6	28,779,909	0.266	438.5	5,347,156	0.164	2,796.9		0.210
MD	6084311 Brandon Shores	4,366.7	2,532.0	54,554,289	0.093	2,071.0	56,261,021	0.074	2,003.5	54,261,920	0.074	2,202.1		0.080
MD	6011911 Mirant Chalk Point	4,194.5	3,861.0	34,883,066	0.221	2,109.2	24,825,362	0.170	2,303.7	31,570,209	0.146	2,757.9		0.179
MD	5155011 C P Crane	1,806.3	1,223.4	6,218,452	0.393	1,070.4	5,344,520	0.401	654.2	3,821,337	0.342	982.7		0.379
MD	5998011 Mirant Dickerson	1,697.9	1,681.8	13,557,376	0.248	1,009.3	10,260,897	0.197	981.8	10,540,781	0.186	1,224.3		0.210
MD	6084311 Herbert A Wagner	1,341.6	1,086.8	14,587,555	0.149	1,025.4	15,922,221	0.129	561.5	13,122,257	0.086	891.2		0.121
MD	6011511 Mirant Morgantown	1,252.0	1,279.9	60,472,176	0.042	872.2	41,255,581	0.042	920.3	46,811,309	0.039	1,024.1		0.041
MD	7717711 AES Warrior Run	914.4	549.6	14,615,569	0.075	443.9	14,119,606	0.063	356.7	11,630,593	0.061	450.1		0.066
MI	7239111 Belle River	8,449.1	9,113.8	83,039,399	0.220	8,276.5	78,583,186	0.211	7,052.7	73,044,097	0.193	8,147.7		0.208
MI	7239111 St. Clair	8,160.0	7,902.5	57,344,551	0.276	7,192.5	58,129,806	0.247	5,463.1	40,317,805	0.271	6,852.7		0.265
MI	7888311 Monroe	6,178.3	8,295.5	157,824,072	0.105	4,996.9	161,341,773	0.062	4,110.7	146,356,344	0.056	5,801.1		0.074
MI	7778411 Presque Isle	4,929.9	3,763.6	23,642,632	0.318	3,868.5	21,977,002	0.352	3,757.6	22,966,610	0.327	3,796.6		0.333
MI	8125511 J H Campbell	4,344.1	4,732.3	88,969,922	0.106	2,881.1	93,051,269	0.062	2,247.1	67,566,729	0.067	3,286.8		0.078
MI	6473711 Midland Cogeneration Venture	2,470.2	1,625.5	33,298,329	0.098	3,005.9	52,011,885	0.116	3,883.1	68,004,748	0.114	2,838.2		0.109
MI	7422511 Trenton Channel	2,394.2	3,106.8	28,095,246	0.221	2,639.9	24,868,667	0.212	1,946.2	20,897,219	0.186	2,564.3		0.207
MI	8229311 River Rouge	1,877.3	3,668.9	22,814,228	0.322	2,595.7	18,618,102	0.279	1,859.4	12,757,617	0.292	2,708.0		0.297
MI	5985211 Eckert Station	1,719.7	834.8	7,838,044	0.213	727.3	6,740,672	0.216	785.4	7,346,586	0.214	782.5		0.214
MI	4174811 Erickson	1,222.0	1,228.3	12,595,815	0.195	1,178.3	11,782,100	0.200	1,058.3	10,724,985	0.197	1,155.0		0.197
MI	4856911 TES Filer City Station	1,155.3	1,569.7	6,852,659	0.458	1,615.3	7,084,008	0.456	1,373.6	7,130,408	0.385	1,519.5		0.433
MI	8172811 Dan E Karn	1,129.2	678.1	22,048,359	0.062	509.8	22,168,192	0.046	717.4	27,031,106	0.053	635.1		0.054
MI	7778711 Dearborn Industrial Generation	406.7	323.2	25,502,467	0.025	385.9	30,613,339	0.025	497.9	40,520,422	0.025	402.3		0.025
MI	7779711 Marquette Board of Light and Power	266.8	379.8	3,839,810	0.198	365.1	3,848,862	0.190	373.5	3,798,325	0.197	372.8		0.195
NJ	7989011 Carneys Point	690.0	903.6	12,788,495	0.141	756.3	12,067,027	0.125	692.3	11,753,378	0.118	784.1		0.128
NJ	7392311 Bergen	520.9	486.9	48,262,837	0.020	475.0	45,946,265	0.021	299.7	37,682,415	0.016	420.5		0.019
NJ	6719711 North Jersey Energy Associates	450.9	433.5	11,605,790	0.075	349.0	10,625,281	0.066	291.2	7,843,892	0.074	357.9		0.072
NJ	6719611 Sewaren Generating Station	435.7	35.7	682,739	0.105	25.2	183,873	0.274	223.6	1,078,143	0.415	94.8		0.265
NJ	7591411 Hudson Generating Station	416.2	524.9	13,100,969	0.080	168.1	4,975,703	0.068	175.3	4,152,233	0.084	289.4		0.077
NJ	8093811 Logan Generating Plant	379.7	625.4	10,313,398	0.121	421.3	7,574,870	0.111	410.2	7,482,619	0.110	485.6		0.114
NJ	5133011 B. L. England Generating Station	372.5	533.7	2,718,284	0.393	319.1	1,664,979	0.383	202.1	1,020,073	0.396	351.7		0.391
OH	7983011 Kyger Creek	9,205.0	5,587.6	57,065,139	0.196	4,172.0	40,048,480	0.208	5,821.6	54,665,716	0.213	5,193.7		0.206
OH	8010811 Conesville	8,726.7	11,581.5	85,630,349	0.271	6,564.7	55,563,714	0.236	5,981.9	51,022,283	0.234	8,042.7		0.247
OH	8294311 W H Zimmer Generating Station	8,663.6	11,300.2	69,741,897	0.324	7,037.0	56,917,095	0.247	5,460.0	51,295,304	0.213	7,932.4		0.261
OH	8101311 J M Stuart	7,984.7	7,117.1	111,225,511	0.128	5,475.8	104,565,774	0.105	5,465.4	115,734,720	0.094	6,019.4		0.109
OH	8190811 W H Sammis	7,902.7	8,421.3	117,365,843	0.144	6,250.2	89,003,911	0.140	4,993.6	81,638,155	0.122	6,555.0		0.135
OH	8148511 Gen J M Gavin	7,213.6	10,028.0	162,988,977	0.123	10,655.1	147,206,149	0.145	7,331.6	141,652,922	0.104	9,338.2		0.124
OH	8130811 Avon Lake Power Plant	4,811.6	3,657.5	20,955,582	0.349	5,561.7	27,244,224	0.408	2,057.4	11,213,995	0.367	3,758.9		0.375
OH	7738711 Miami Fort Generating Station	4,526.4	6,398.1	73,468,288	0.174	5,828.0	62,806,124	0.186	5,052.1	65,479,043	0.154	5,759.4		0.171
OH	8101411 Killen Station	3,739.5	7,110.9	41,445,800	0.343	5,655.5	36,398,878	0.311	6,058.2	35,988,025	0.337	6,274.8		0.330
OH	8115711 Cardinal	2,264.6	4,050.9	102,812,173	0.079	3,334.5	88,034,680	0.076	3,761.2	90,152,524	0.083	3,715.5		0.079
OH	8302011 Bay Shore	837.6	567.1	12,929,142	0.088	639.2	14,699,038	0.087	363.8	12,828,837	0.057	523.4		0.077
PA	3853711 Bruce Mansfield	11,124.3	18,563.1	163,438,740	0.227	11,699.9	132,998,643	0.176	9,128.5	113,158,979	0.161	13,130.5		0.188
PA	3866111 Keystone	7,642.7	17,009.2	112,359,466	0.303	14,312.6	97,146,022	0.295	13,380.5	105,560,720	0.254	14,900.8		0.284
PA	2905911 Conemaugh	6,696.1	17,090.9	105,411,569	0.324	14,840.1	110,303,312	0.269	11,162.9	94,580,462	0.236	14,364.6		0.276
PA	3005211 Homer City	5,657.0	22,116.4	115,786,811	0.382	18,371.0	94,094,696	0.390	11,287.9	69,817,048	0.323	17,258.5		0.365
PA	3881111 Montour	5,297.9	12,388.8	65,140,628	0.380	11,267.6	63,633,299	0.354	8,078.9	42,428,005	0.381	10,578.4		0.372

PA	8404811	Cheswick	3,372.2	6,101.1	30,639,565	0.398	3,494.0	22,111,341	0.316	4,220.7	21,475,813	0.393	4,605.3	 0.369
PA	3193911	Brunner Island	3,126.7	11,053.1	59,705,203	0.370	8,303.7	48,942,274	0.339	6,280.9	35,443,761	0.354	8,545.9	 0.355
PA	55524	Calpine Mid Merit, LLC - York Energy	2,837.4	65.8	20,177,292	0.007	58.3	15,687,354	0.007	40.9	12,504,354	0.007	55.0	 0.007
PA	3005111	Seward	2,102.8	1,411.8	28,465,465	0.099	959.9	18,947,057	0.101	1,745.7	30,537,546	0.114	1,372.5	 0.105
PA	2985011	Shawville	915.0	5,442.6	25,164,048	0.433	2,066.1	9,957,784	0.415	101.2	2,430,630	0.083	2,536.6	 0.310
PA	4760211	Scrubgrass Generating Plant	740.9	594.5	7,518,927	0.158	312.0	4,243,679	0.147	547.2	7,354,190	0.149	484.6	 0.151
PA	6594511	Cambria Cogen	734.0	1,066.7	9,869,910	0.216	769.6	8,108,813	0.190	1,121.7	9,340,347	0.240	986.0	 0.215
PA	6594411	Colver Power Project	710.5	888.3	10,898,712	0.163	802.5	10,413,109	0.154	737.5	9,312,141	0.158	809.4	 0.159
PA	7889011	Panther Creek Energy Facility	567.3	499.7	8,221,153	0.122	378.7	6,420,726	0.118	102.8	1,693,403	0.121	327.1	 0.120
PA	3881711	Martins Creek	557.0	1,872.9	18,869,390	0.199	3,994.3	45,796,100	0.174	4,030.8	47,607,844	0.169	3,299.3	 0.181
PA	6558911	Northampton Generating Plant	449.4	326.1	7,816,525	0.083	230.8	5,330,167	0.087	142.1	3,192,664	0.089	233.0	 0.086
PA	8331411	Wheelabrator - Frackville	441.2	391.1	5,479,743	0.143	320.0	3,967,677	0.161	299.3	4,853,372	0.123	336.8	 0.142
PA	3776611	NRG Power Midwest New Castle Plant	362.5	712.4	3,403,889	0.419	672.0	3,612,622	0.372	779.6	9,392,164	0.166	721.3	 0.319
PA	3881811	NRG REMA LLC Portland Gen Station	4.3	428.8	2,673,776	0.321	1.0	21,255	0.091	4.8	34,931	0.275	144.8	 0.229
VA	6160611	Clover Power Station	6,984.2	8,458.3	60,379,818	0.280	8,412.4	57,977,019	0.290	8,307.3	58,547,473	0.284	8,392.7	 0.285
VA	4181011	Chesterfield Power Station	2,967.6	2,890.5	85,547,400	0.068	3,197.7	91,033,598	0.070	2,724.4	82,969,014	0.066	2,937.5	 0.068
VA	4039911	Spruance Genco, LLC	2,649.3	1,682.9	11,379,210	0.296	1,536.5	10,581,478	0.290	1,319.1	9,162,455	0.288	1,512.8	 0.291
VA	4565211	Yorktown Power Station	1,230.5	1,889.8	10,690,683	0.354	1,045.2	6,824,139	0.306	1,052.9	5,062,103	0.416	1,329.3	 0.359
VA	6633911	Cogentrix-Hopewell	1,002.5	732.6	9,377,745	0.156	736.9	13,498,275	0.109	544.4	10,790,977	0.101	671.3	 0.122
VA	1653011	Virginia City Hybrid Energy Center	906.9	1,208.9	35,625,835	0.068	974.8	30,240,824	0.064	1,053.9	35,572,585	0.059	1,079.2	 0.064
VA	5883511	Hopewell Cogeneration Facility	542.0	732.6	9,377,745	0.156	736.9	13,498,275	0.109	544.4	10,790,977	0.101	671.3	 0.122
VA	6631811	Doswell Limited Partnership	427.0	534.9	32,446,850	0.033	722.1	42,410,343	0.034	729.9	40,620,943	0.036	662.3	 0.034
VA	5748311	Dominion-Mecklenburg Power Station	380.5	907.0	6,395,845	0.284	668.0	4,706,670	0.284	593.7	4,096,478	0.290	722.9	 0.286
VA	7520511	Dominion - Possum Point Power Station	321.7	413.0	28,166,029	0.029	472.5	27,337,777	0.035	297.8	26,507,858	0.022	394.4	 0.029
VA	5763511	American Electric Power-Clinch River Plant	27.6	998.7	7,521,342	0.266	801.1	4,785,885	0.335	211.4	3,511,568	0.120	670.4	 0.240
WV	6271711	Harrison Power Station	13,505.5	21,764.2	122,823,706	0.354	17,876.6	113,882,126	0.314	11,981.6	130,232,313	0.184	17,207.4	 0.284
WV	6773611	Fort Martin Power Station	11,554.1	9,489.6	63,574,613	0.299	9,650.4	67,686,117	0.285	9,788.6	63,282,525	0.309	9,642.9	 0.298
WV	4782811	Pleasants Power Station	5,638.0	12,948.0	81,568,069	0.317	11,298.1	69,591,235	0.325	7,404.4	65,971,959	0.224	10,550.2	 0.289
WV	6789111	John E Amos	4,037.8	4,736.5	129,010,365	0.073	6,084.7	138,109,257	0.088	6,284.9	146,312,186	0.086	5,702.0	 0.082
WV	6257011	Mount Storm Power Station	3,271.5	3,657.9	100,584,284	0.073	3,903.2	100,624,677	0.078	3,468.9	94,287,175	0.074	3,676.7	 0.075
WV	6760811	Mountaineer (1301)	2,371.1	3,019.2	82,991,220	0.073	3,793.7	78,323,403	0.097	3,941.0	80,127,096	0.098	3,584.6	 0.089
WV	6902311	Mitchell (WV)	2,339.4	3,391.0	82,504,596	0.082	2,359.1	53,875,167	0.088	3,383.9	78,210,530	0.087	3,044.7	 0.085
WV	4864511	Grant Town Power Plant	1,520.8	1,561.3	8,936,674	0.349	1,336.2	7,999,086	0.334	1,456.7	9,857,787	0.296	1,451.4	 0.326
WV	1632011	Longview Power	1,004.6	1,146.6	36,003,082	0.064	889.8	28,855,296	0.062	1,562.5	50,075,229	0.062	1,199.6	 0.063

Non-Electric Generating Units Facility List

State	Plant ID	Plant Name	Projected 2017 NOx (Tons)
IL	7940411	ConocoPhillips Co	2,551.0
IL	8139911	Archer Daniels Midland Co	2,247.2
IL	7808811	Lafarge Midwest Inc	1,827.7
IL	8208511	Illinois Cement Co	1,815.2
IL	7360711	Exxon Mobil Oil Corp	1,671.6
IL	7793411	Ppg Industries	1,669.1
IL	8222511	Marathon Petroleum Co LLC	1,356.7
IL	8191211	US Steel Granite City	1,182.6
IL	2599311	SUEZ DEGS of Tuscola LLC	1,046.9
IL	8065311	Aventine Renewable Energy Inc	867.5
IL	8191811	CITGO Petroleum Corp	674.0
IL	7361511	Archer Daniels Midland Co	667.5
IL	4635211	Pilkington North America Inc	625.4
IL	2444211	Rentech Energy Midwest Corp	590.1
IL	8209311	Equistar Chemicals LP	516.4
IL	7298911	ElectroMotive Diesel Inc	480.7
IL	10923611	Gateway Energy & Coke Co LLC	406.7
IL	14423711	GALESBURG	398.3
IL	8139511	Ardagh Glass Inc	391.9
IL	7793311	Tate & Lyle Ingredients Americas LLC	366.5
IL	946411	Ingredion Incorporated Argo Plant	0
IN	8183111	ALCOA WARRICK POWER PLT AGC DIV OF AL	9,636.5
IN	7376511	ArcelorMittal Burns Harbor Inc.	8,206.5
IN	3986511	Indiana Harbor East	4,714.2
IN	8192011	US STEEL GARY WORKS	4,343.1
IN	8225311	LEHIGH CEMENT COMPANY LLC	3,700.1
IN	7431611	LONE STAR INDUSTRIES, INC	3,194.5
IN	7247711	BP PRODUCTS NORTH AMERICA INC, WHITING R	2,471.5
IN	8198511	Essroc Cement Corp	2,331.5
IN	8224411	Essroc Cement Corp	2,025.0
IN	7364611	SABIC INNOVATIVE PLASTICS MT. VERNON LLC	1,690.3
IN	8202711	Carmeuse Lime Inc	1,687.6
IN	3986611	ARCELORMITTAL INDIANA HARBOR LLC	1,606.0
IN	4885311	Citizens Thermal	1,481.2
IN	7744611	COVANTA INDIANAPOLIS, INC.	1,077.4
IN	8182811	INDIANA HARBOR COKE COMPANY	859.4
IN	5453011	Ardagh Glass Inc	684.8
IN	8074511	TATE & LYLE SAGAMORE OPERATION	577.0
IN	8223611	ELI LILLY & COMPANY CLINTON LABS	556.6
IN	7376411	TATE & LYLE, LAFAYETTE SOUTH (33)	489.0
IN	7376911	SDI Steel Dynamics Incorporated	479.8

IN	4912511	PURDUE UNIVERSITY -WADE UTILITY PLANT	453.6
IN	5552011	UNIVERSITY OF NOTRE DAME DU LAC	435.3
IN	12766611	Wabash River Combined Cycle Plant	61.1
KY	7349811	Carmeuse Lime & Stone Inc	1,913.6
KY	5060111	Ak Steel Corp	1,380.3
KY	9619211	Domtar Paper Co LLC - Hawesville Operati	1,303.3
KY	7353311	Kosmos Cement Company	1,097.0
KY	7331911	Marathon Petroleum Co LLC - Catlettsburg	957.3
KY	7351711	Carmeuse Lime Inc	820.9
KY	5926411	AGC Flat Glass N America Inc	634.0
KY	7331511	Newpage Corp	619.4
KY	5198911	North American Stainless	536.0
KY	5929411	Westlake Vinyls Inc	460.4
KY	7365211	CC Metals and Alloys LLC	457.5
KY	13417311	Mississippi Lime Co - Verona Plant	363.9
MD	7763811	Luke Paper Company	3,607.1
MD	8200011	Lehigh Cement Company - Union Bridge	2,623.2
MD	7931411	Holcim (US), Inc.	1,522.1
MD	8239711	Sparrows Point, LLC	1,165.6
MD	5857411	Wheelabrator Baltimore, LP	0
MD	7719011	Montgomery County RRF	0
MI	8062611	TILDEN MINING COMPANY LC	5,561.2
MI	8127411	LAFARGE MIDWEST INC.	3,461.8
MI	9535411	Detroit Metropolitan Wayne County	2,993.7
MI	7780811	EMPIRE IRON MINING PARTNERSHIP	2,799.0
MI	8126511	ESCANABA PAPER COMPANY	2,556.7
MI	8483611	U S STEEL GREAT LAKES WORKS	2,129.9
MI	7888111	GUARDIAN INDUSTRIES	2,042.1
MI	8160611	St. Marys Cement, Inc. (U.S.)	2,019.5
MI	8171811	DETROIT RENEWABLE POWER, LLC	1,618.3
MI	7286011	VERSO PAPER - QUINNESEC	1,226.4
MI	8129311	Holland BPW, Generating Station & WWTP	876.2
MI	8483711	SEVERSTAL DEARBORN, LLC	610.8
MI	7778911	CARMEUSE LIME Inc, RIVER ROUGE OPERATIO	547.0
MI	8157711	Michigan State University	523.5
MI	8229011	Packaging Corporation of America - Filer	521.5
MI	8126211	Decorative Panels International, Inc	464.8
MI	8245611	MARATHON PETROLEUM COMPANY LP	348.2
MI	16662611	EES COKE BATTERY LLC	0
MI	16879411	WESTPORT LD, INC.	0
NJ	7903711	Phillips 66 Bayway Refinery	918.9
NJ	8177011	Covanta Essex Company	779.5

NJ	7201311 Paulsboro Refining Company LLC	648.4
NJ	7906111 Union County Resource Recovery Facility	621.8
OH	8463811 Carmeuse Lime, Inc. - Maple Grove Operat	2,968.0
OH	8008811 AK Steel Corporation (1409010006)	2,152.4
OH	8133211 MARTIN MARIETTA MAGNESIA SPECIALTIES INC	2,029.4
OH	3950711 Department of Public Utilities, City of	1,901.9
OH	8131111 P. H. Glatfelter Company - Chillicothe F	1,759.1
OH	8102411 PCS Nitrogen Ohio, L.P. (0302020370)	1,298.4
OH	8150111 CEMEX Construction Materials Atlantic, L	1,175.0
OH	7937411 ArcelorMittal Cleveland Inc. (1318001613	1,161.2
OH	9253511 Pilkington North America Inc (0487010012	1,087.9
OH	8418011 BP-Husky Refining LLC (0448020007)	862.5
OH	7319811 Toledo Refining Company, LLC. (044801024	829.0
OH	8007011 Lima Refining Company (0302020012)	813.9
OH	8259911 Anchor Hocking, LLC (0123010078)	768.0
OH	8130411 Globe Metallurgical Inc. (0684000105)	765.9
OH	9301711 DTE St. Bernard, LLC (1431394148)	763.1
OH	8014411 General Electric Aircraft Engines: Peebl	755.4
OH	9236811 Haverhill Coke Company LLC (0773000182)	700.9
OH	13571611 INEOS USA LLC (0302020371)	670.6
OH	8115611 ArcelorMittal Warren (0278000648)	661.3
OH	7401911 Alliance Casting Co. LLC (1576010014)	613.5
OH	7996411 Lafarge North America - Paulding Plant (536.0
OH	8130511 Kraton Polymers U.S. LLC (0684010011)	533.6
OH	8010911 RockTenn CP,LLC (0616010001)	530.0
OH	8149211 Carmeuse Lime, Inc - Grand River Operati	520.1
OH	8149311 PAINESVILLE MUNICIPAL ELECTRIC PLANT (02	509.0
OH	8301711 Libbey Glass Inc. (0448010066)	464.2
OH	8115911 Owens Brockway Glass Containers - Plant	451.9
OH	7922111 General Electric Aviation, Evendale Plan	420.8
OH	8130211 Graymont Dolime (OH), Inc. (0362000079)	420.2
OH	7996011 Cargill, Inc. - Dayton (0857041124)	400.1
OH	8130611 Orion Engineered Carbons LLC (0684010049)	391.8
OH	8011211 Wausau Paper Towel & Tissue, LLC (1409010043)	340.5
PA	8204511 USS/CLAIRTON WORKS	3,287.3
PA	4952111 MAGNESITA REFRACTORIES/YORK	2,807.1
PA	4966111 PH GLATFELTER CO/SPRING GROVE	1,720.3
PA	6463511 PPG IND INC/WORKS NO 6	1,501.7
PA	7873611 SUNOCO INC (R&M)/MARCUS HOOK REFINERY	1,447.2
PA	8219711 COVANTA DELAWARE VALLEY LP/DELAWARE VALL	1,433.7
PA	6651211 ESSROC/NAZARETH LOWER CEMENT PLT I II I	1,346.2
PA	6597611 LEHIGH CEMENT CO LLC/EVANSVILLE CEMENT P	1,163.2
PA	6652211 PHILA ENERGY SOL REF/ PES	1,122.5
PA	2989611 GUARDIAN IND CORP/JEFFERSON HILLS	987.4

PA	6559611	DOMTAR PAPER CO/JOHNSONBURG MILL	977.8
PA	6603511	PITTSBURGH GLASS WORKS/MEADVILLE WORKS 8	949.0
PA	7889111	GRAYMONT PA INC/PLEASANT GAP & BELLEFONT	946.9
PA	7991511	HORSEHEAD CORP/MONACA SMELTER	913.7
PA	4843611	COVANTA PLYMOUTH RENEWABLE ENERGY/ PLYMO	835.8
PA	8220011	WHEELABRATOR FALLS INC/FALLS TWP	831.5
PA	3881611	HERCULES CEMENT CO LP/STOCKERTOWN	801.5
PA	7409411	US STEEL CORP/IRVIN PLT	793.3
PA	4952011	PROCTER & GAMBLE PAPER PROD CO/MEHOOPANY	719.3
PA	6581211	LANCASTER CNTY RRF/ LANCASTER	656.8
PA	7874511	MONROE ENERGY LLC/TRAINER	617.5
PA	14454711	CONWAY	609.9
PA	6582211	KEYSTONE PORTLAND CEMENT/EAST ALLEN	579.4
PA	4120011	YORK CNTY SOLID WASTE/YORK CNTY RESOURCE	567.0
PA	7407611	SHENANGO INC/SHENANGO COKE PLT	449.6
PA	3884311	CARMEUSE LIME INC/MILLARD LIME PLT	444.3
PA	6582111	INTL WAXES INC/FARMERS VALLEY	424.7
VA	10698711	Duke Energy Generation Services of Narro	3,549.9
VA	5798711	Meadwestvaco Packaging Resource Group	3,041.5
VA	5769011	Honeywell International Inc - Hopewell	3,018.0
VA	4182011	Smurfit Stone Container Corporation - We	1,869.5
VA	5039811	Roanoke Cement Company	1,866.1
VA	8517811	Old Virginia Brick Co	1,330.7
VA	5748611	Radford Army Ammunition Plant	1,273.0
VA	5768811	Smurfit Stone Container Enterprises Inc-	1,242.8
VA	5795711	Greif Packaging LLC	620.1
VA	4184511	Chemical Lime Company	581.5
VA	4034811	Jewell Coke Company LLP	520.2
VA	4195111	Covanta Alexandria/Arlington Inc	471.5
VA	6148011	Owens-Brockway Glass Container Division	412.9
VA	4183311	GP Big Island LLC	239.8
VA	4004311	Celanese Acetate LLC	43.2
VA	4183011	Wheelabrator Portsmouth Inc, RDF Facility	0.5
VA	6743611	Covanta Fairfax Inc	0
VA	5747111	International Paper Company	0
WV	4878711	PPG INDUSTRIES, INC., NATRIUM PLANT	1,946.2
WV	5782411	BAYER CROPSCIENCE	1,749.2
WV	4987611	CAPITOL CEMENT - ESSROC MARTINSBURG	1,495.5
WV	4878911	DUPONT WASHINGTON WORKS	1,043.8
WV	4864311	MOUNTAIN STATE CARBON, LLC	964.9
WV	4985711	WEST VIRGINIA ALLOYS, INC.	891.8
WV	6773811	MORGANTOWN ENERGY ASSOCIATES	818.7
WV	4985611	Rain CII Carbon LLC - Moundsville Calcin	408.5

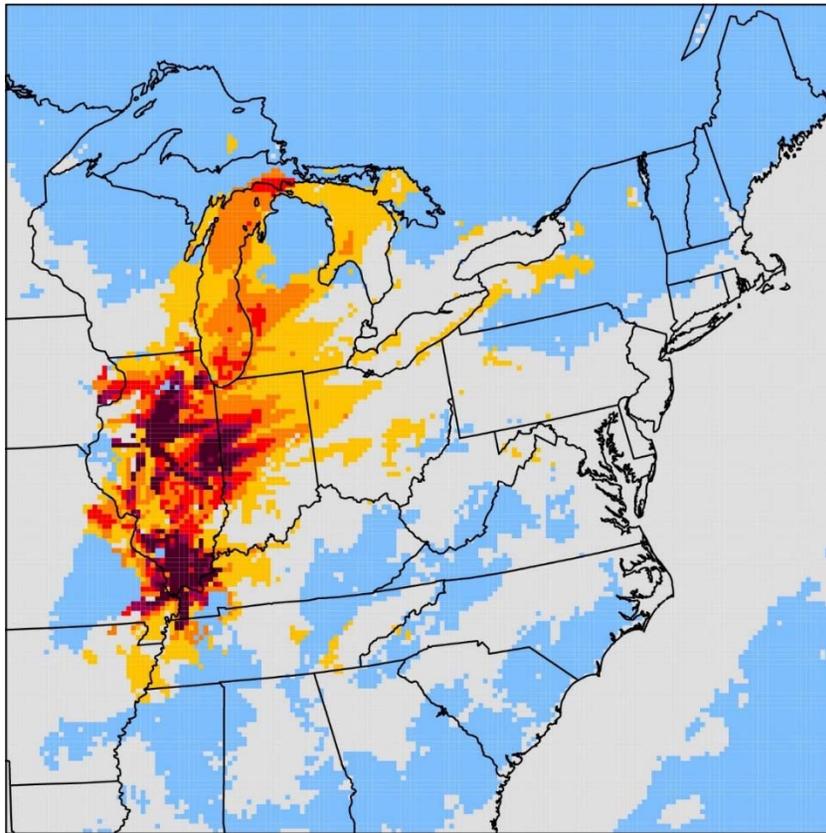
Oil & Gas Sector Facility List

State	Plant ID	Plant Name	Projected 2017 NOx (Tons)
IL	5550111	Natural Gas Pipeline of America	2,611.6
IL	1816411	Natural Gas Pipeline Co of America	1,948.9
IL	5535511	Trunkline Gas Co	1,448.7
IL	2749511	Trunkline Gas Co	1,168.1
IL	2600611	Panhandle Eastern Pipe Line Co	1,167.4
IL	5574811	Trunkline Gas Co	1,081.8
IL	5529311	ANR Pipeline Co	641.1
IL	558811	Peoples Gas Light & Coke Co	474.3
IL	4484711	Panhandle Eastern Pipe Line Co	418.5
IL	5401911	Midwestern Gas Transmission	144.8
IN	4544011	PEPL - EDGERTON COMPRESSOR STATION	1,556.8
IN	8238711	PEPL - ZIONSVILLE COMPRESSOR STATION	1,282.3
IN	7957111	ANR PIPELINE CO PORTLAND STATION	1,165.9
IN	4887211	ANR PIPELINE CELESTINE STATION	876.0
IN	4911611	T G C - NORTH JUDSON STATION	620.8
IN	8201211	ANR PIPELINE CO - SHELBYVILLE STATION	617.9
IN	4671411	PANHANDLE EASTERN PIPE LINE COMPANY M	342.4
IN	4728511	T G C - AMBIA STATION	332.9
IN	7250811	Midwestern Gas Transmission Company Sta	100.2
KY	6127911	Texas Eastern Transmission LP - Danville	1,076.8
KY	5830611	ANR Pipeline Co (Madisonville Compressor	790.6
KY	5201011	Columbia Gulf Trans Co	619.4
KY	6096911	TN Gas Pipeline Co LLC - Station 200	185.4
MD	5997311	Transcontinental Gas Pipeline	1,206.0
MI	8246111	ANR Pipeline Company Lincoln Compressor	639.7
MI	4190611	ANR Pipeline Co - Woolfolk Compressor S	562.0
MI	4007011	Great Lakes Gas - Farwell Compressor Sta	545.1
MI	4201211	ROMEO GAS PROCESSING PLANT	542.5
MI	6358811	CONSUMERS ENERGY COMPANY- WHITE PIGEON C	486.8
MI	8195311	ANR Pipeline Company - Bridgman Compressor Station	386.5
MI	4006811	Consumers Energy - Muskegon River Compressor Stat	372.6
MI	7011311	DTE Gas Company BELLE RIVER COMPRESSOR STATION	361.1
MI	5888811	Howell Compressor Station	359.3
MI	5215311	DTE Gas Company-Taggart Compressor Station	282.0
OH	7938111	ANR Pipeline Company (0320010169)	1,472.4
OH	8259811	CRAWFORD COMPRESSOR STATION (0123000137)	681.7
OH	8425111	East Ohio Gas - Chippewa Station (028500)	522.1
OH	8050011	LUCAS COMPRESSOR STATION (0370000164)	469.6

OH	8050111 PAVONIA COMPRESSOR STATION (0370000226)	453.5
OH	8132011 Tennessee Gas Pipeline- Station 214 (0210	431.5
OH	13573011 Marathon Petroleum Company LP - Canton Refinery (1576002006)	274.3
OH	8008011 Tennessee Gas Pipeline Station 209 (0630000001)	263.3
OH	7984611 Tennessee Gas Pipeline Station 204 (0605000020)	66.3
PA	2980811 TRANSCONTINENTAL GAS/FRAZER STA 200	731.3
PA	3194611 TRANSCONTINENTAL GAS PIPE LINE CO LLC/ST	442.1
VA	4005411 Transco Gas Pipe Line Corp Station 165	2,304.3
VA	6217611 Transco Station 170	756.5
WV	6790711 FILES CREEK 6C4340	1,298.8
WV	6214811 DOMINION - OSCAR NELSON COMPRESSOR STN	1,097.9
WV	6341411 CEREDO 4C3360	1,025.7
WV	6341511 KENOVA 4C3350	693.6
WV	6340611 CLEVELAND 6C4330	543.0
WV	6900411 DOMINION - CAMDEN COMPRESSOR STATION	530.6
WV	6900311 EQUITRANS - COPLEY RUN CS 70	505.6
WV	6885411 DOMINION - CORNWELL COMPRESSOR STATION	403.3
WV	6790511 Columbia Gas - GLADY 6C4350	370.9
WV	6885111 Columbia Gas - CLENDENIN 4C1200	288.1
WV	6760611 Columbia Gas - ADALINE 7C6600	287.3
WV	6256711 Columbia Gas - GLENVILLE 4C1170	46.8

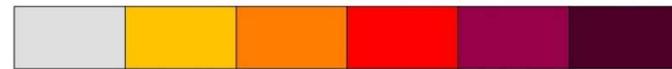
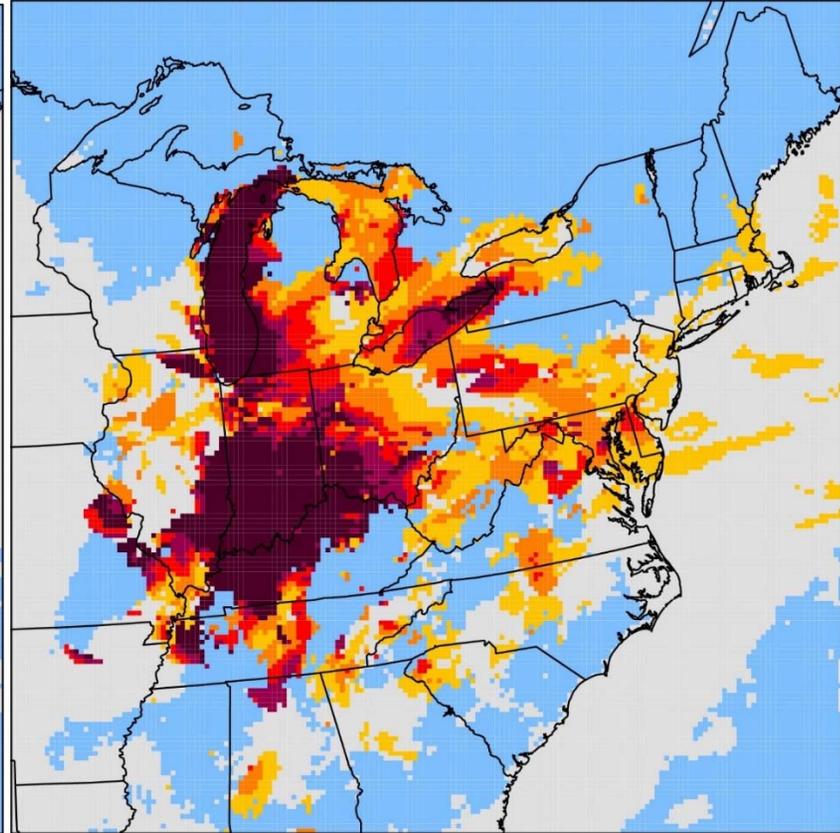
Appendix C

Maximum Impacts on New York State Monitors from 400 Ton-per-Year Sources in Significantly Contributing States



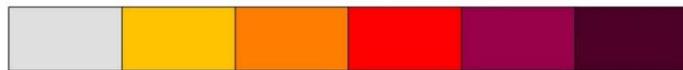
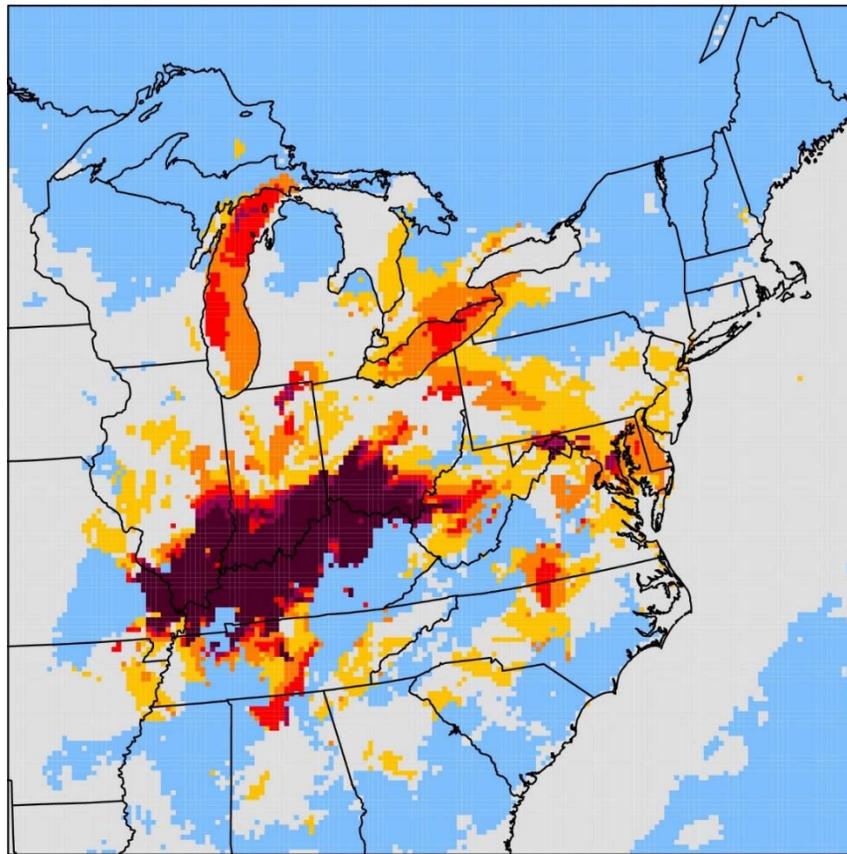
0.7 1.4 2.1 2.8 3.5

**Maximum impact from Illinois:
0.986 ppb at East Syracuse (Onondaga Co.) monitor**



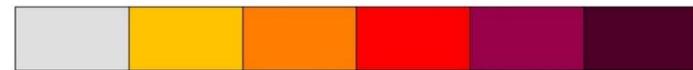
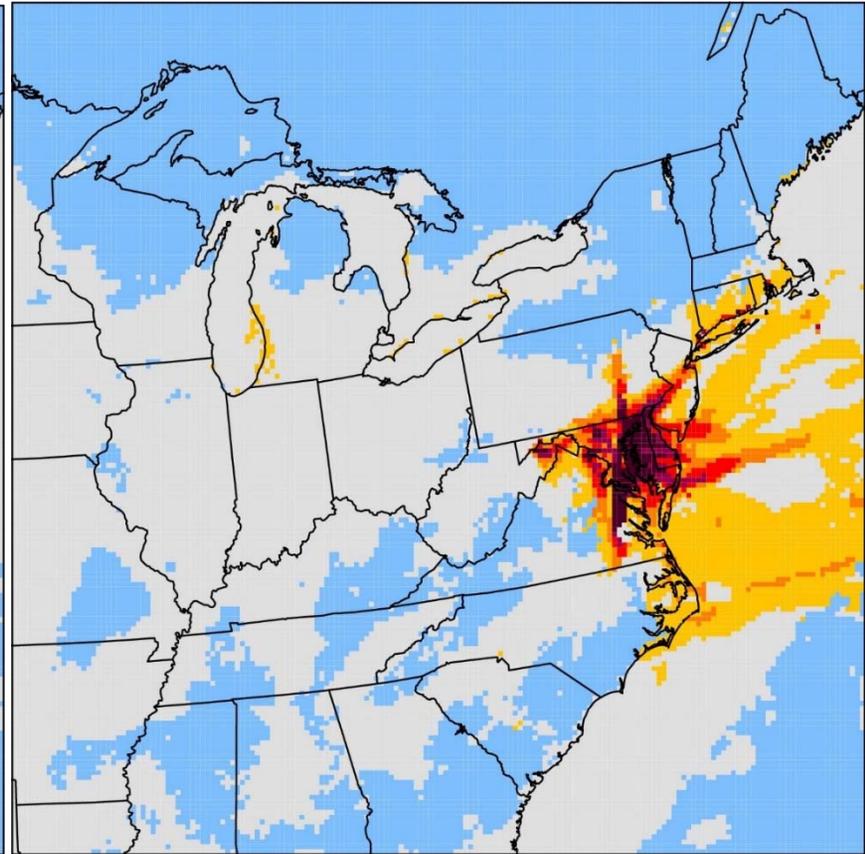
0.7 1.4 2.1 2.8 3.5

**Maximum impact from Indiana:
4.207 ppb at Amherst (Erie Co.) monitor**



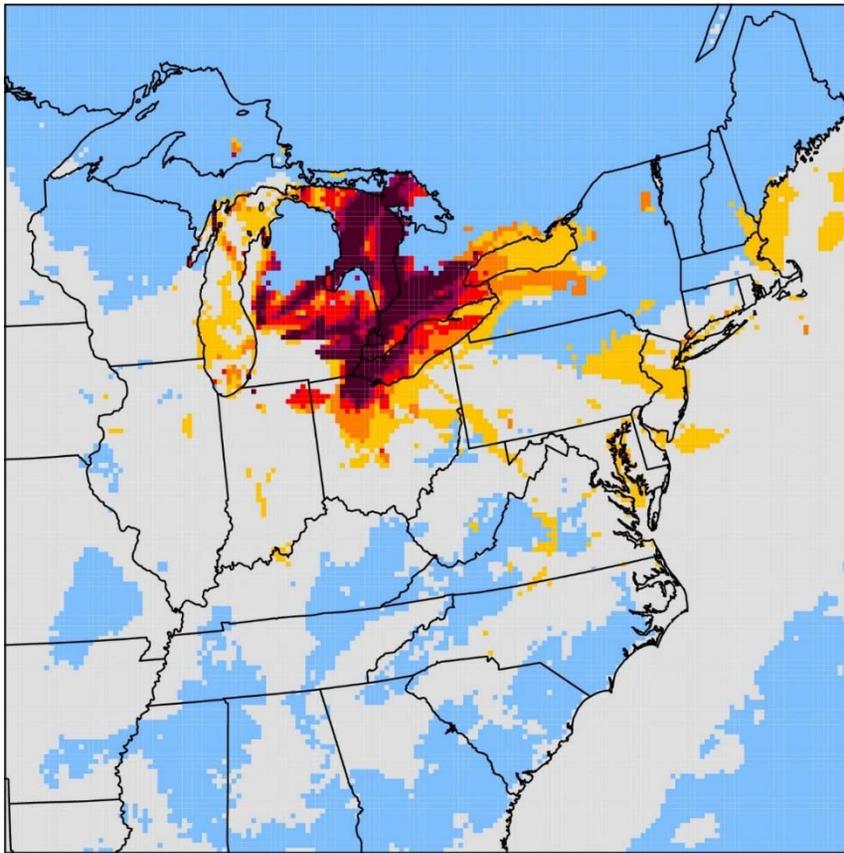
0.7 1.4 2.1 2.8 3.5

Maximum impact from Kentucky:
1.550 ppb at Middleport (Niagara Co.) monitor



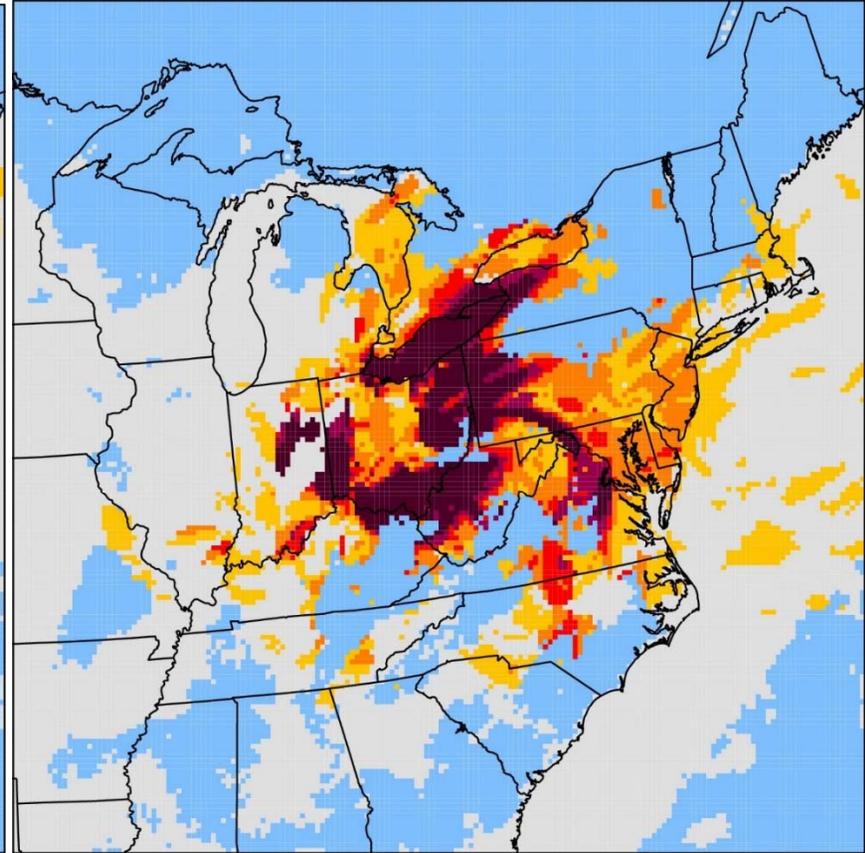
0.7 1.4 2.1 2.8 3.5

Maximum impact from Maryland:
1.509 ppb at Susan Wagner (Richmond Co.) monitor



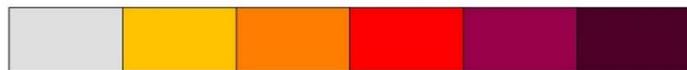
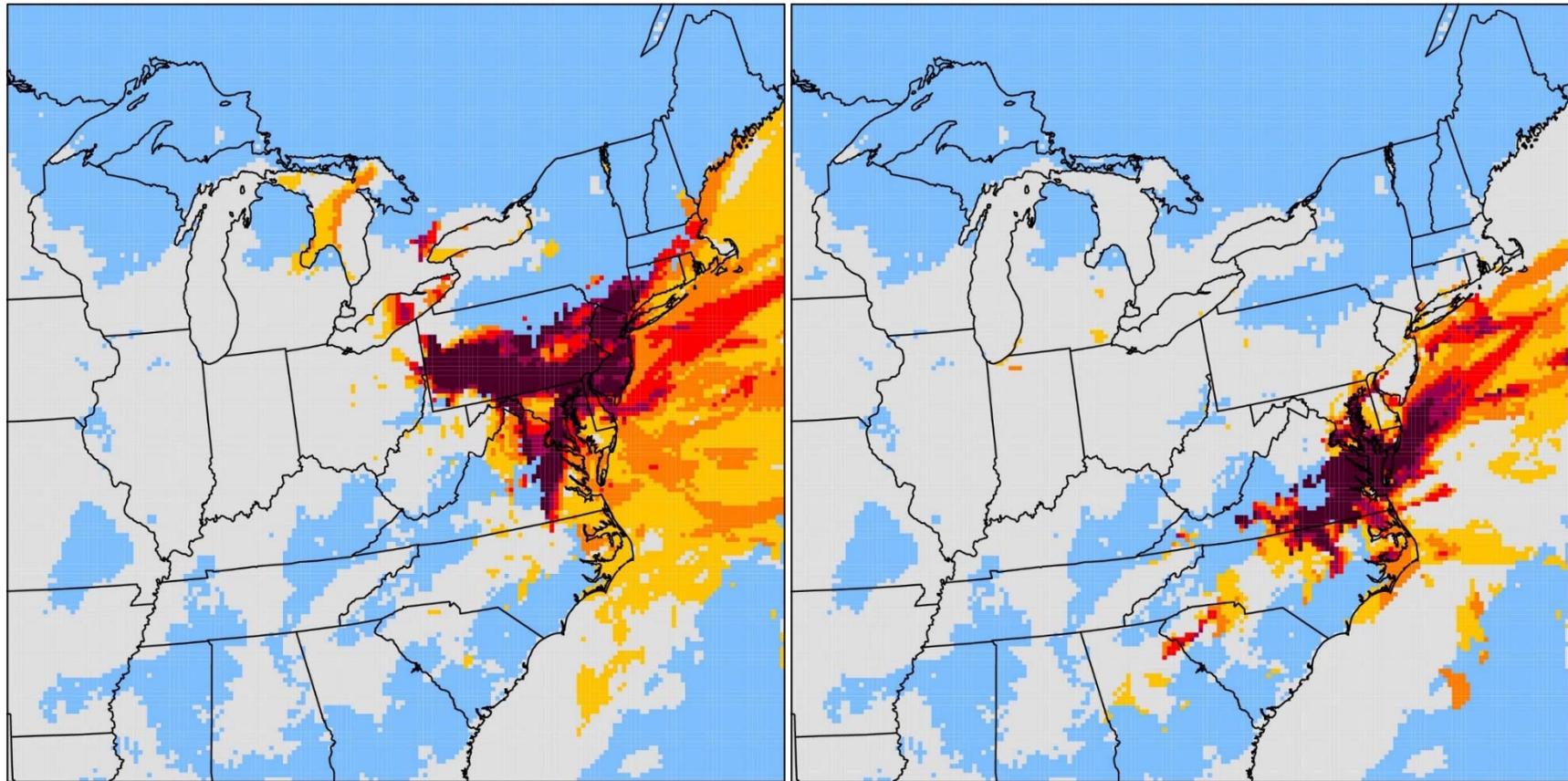
0.7 1.4 2.1 2.8 3.5

Maximum impact from Michigan:
1.770 ppb at Rochester (Monroe Co.) monitor



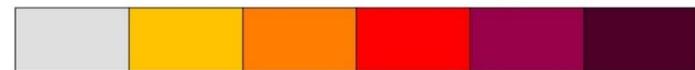
0.7 1.4 2.1 2.8 3.5

Maximum impact from Ohio:
6.343 ppb at Dunkirk (Chautauqua Co.) monitor



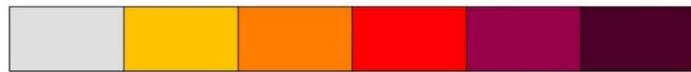
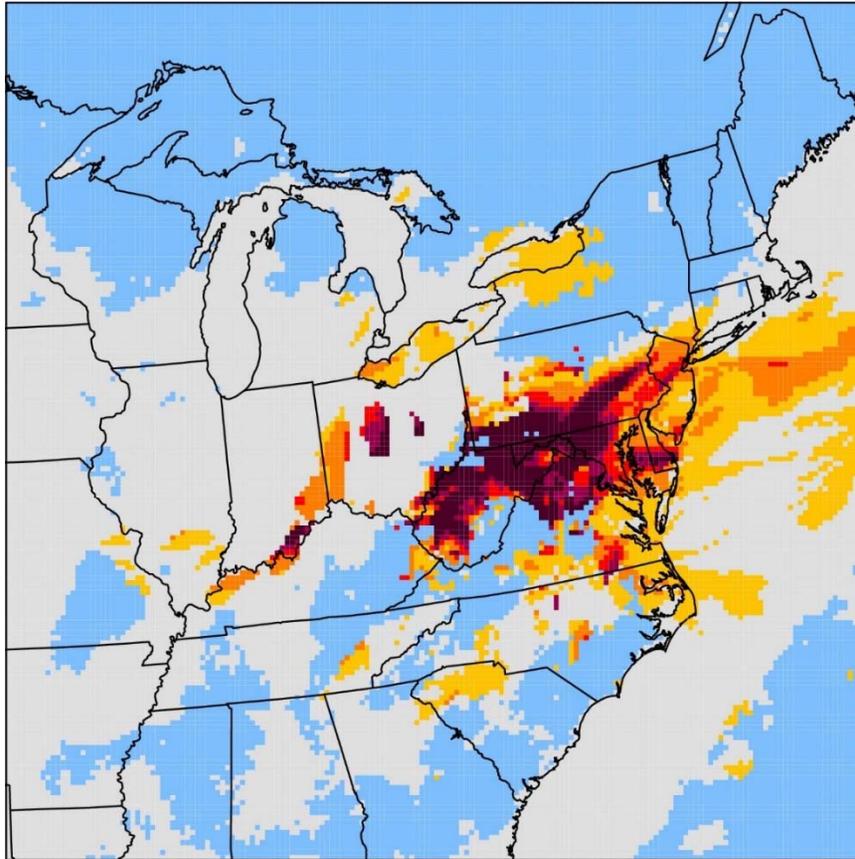
0.7 1.4 2.1 2.8 3.5

**Maximum impact from Pennsylvania:
4.968 ppb at Rockland (Rockland Co.) monitor**



0.7 1.4 2.1 2.8 3.5

**Maximum impact from Virginia:
0.929 ppb at Riverhead (Suffolk Co.) monitor**



0.7 1.4 2.1 2.8 3.5

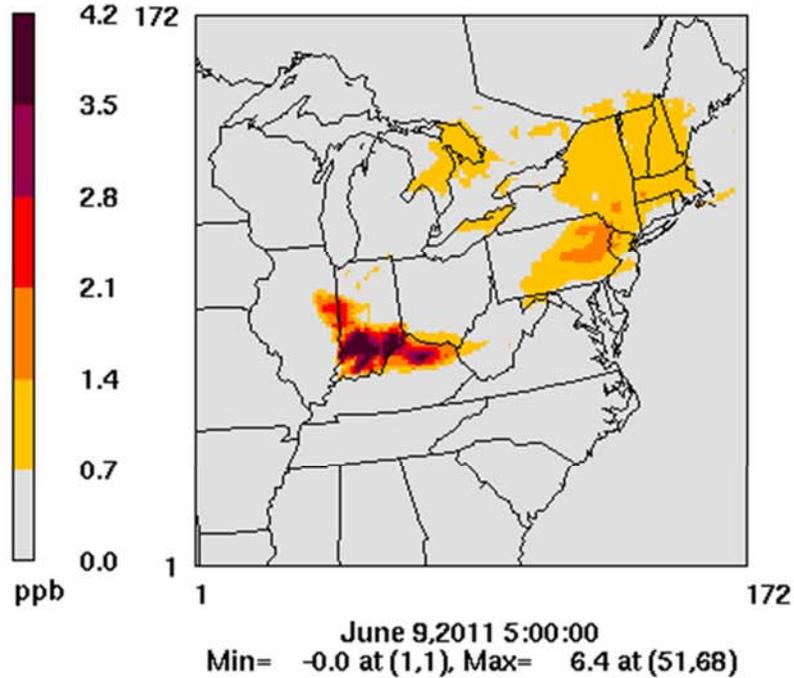
**Maximum impact from West Virginia:
2.273 ppb at Susan Wagner (Richmond Co.) monitor**

Appendix D

Maximum Impacts on Susan Wagner Monitor (Richmond County) from
400 Ton-per-Year Sources in Significantly Contributing States

Ozone Impacts from IN

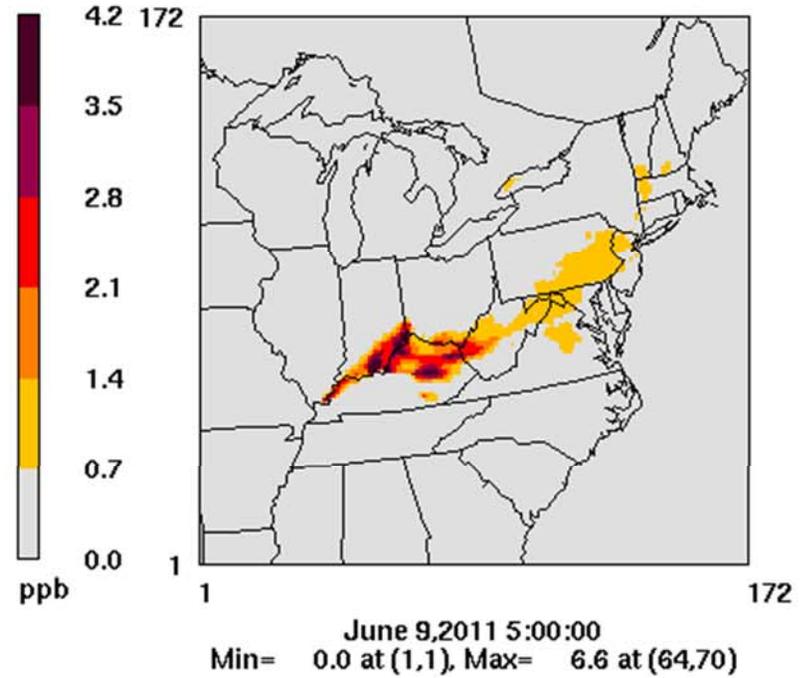
Between 2017 Base and 2017 IN Control Cases
From Mid-May till End of July, 2011



Maximum Indiana impact on Susan Wagner monitor = 1.012 ppb

Ozone Impacts from KY

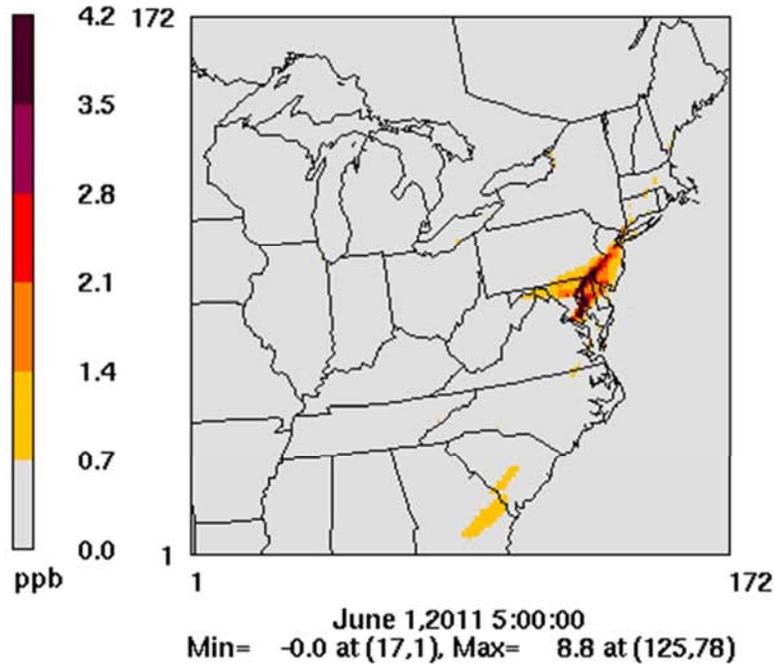
Between 2017 Base and 2017 KY Control Cases
From Mid-May till End of July, 2011



Maximum Kentucky impact on Susan Wagner monitor = 0.727 ppb

Ozone Impacts from MD

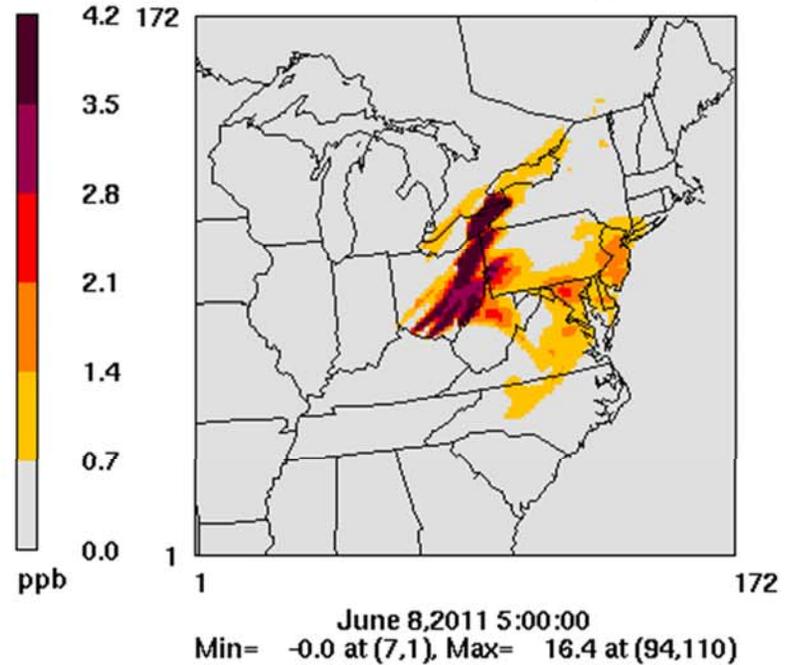
Between 2017 Base and 2017 MD Control Cases
From Mid-May till End of July, 2011



Maximum Maryland impact on Susan Wagner monitor = 1.509 ppb

Ozone Impacts from OH

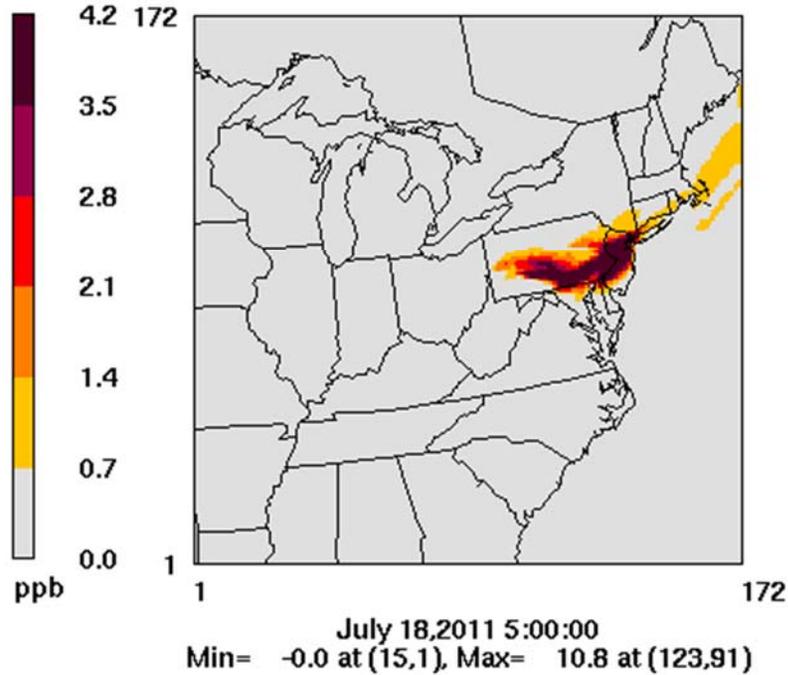
Between 2017 Base and 2017 OH Control Cases
From Mid-May till End of July, 2011



Maximum Ohio impact on Susan Wagner monitor = 1.350 ppb

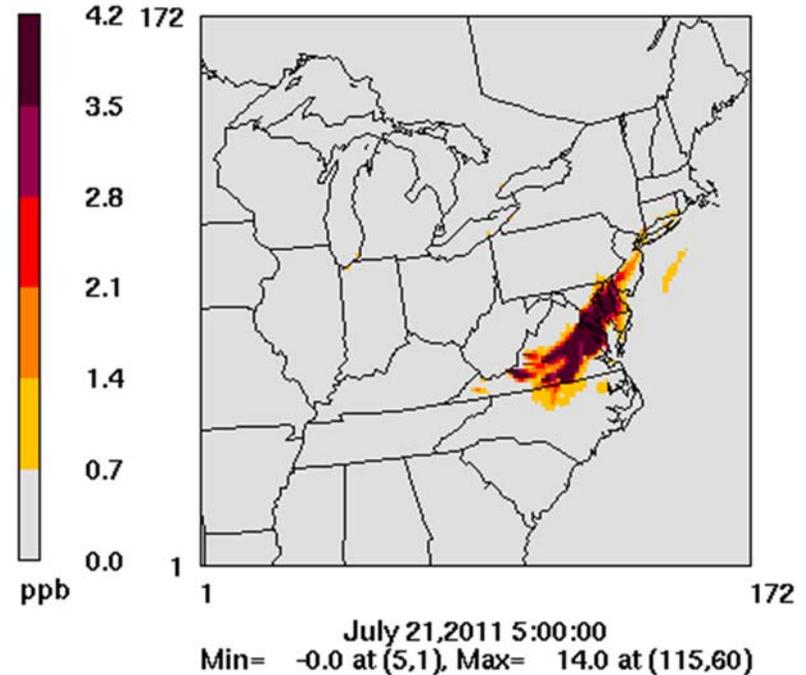
Ozone Impacts from PA

Between 2017 Base and 2017 PA Control Cases
From Mid-May till End of July, 2011



Ozone Impacts from VA

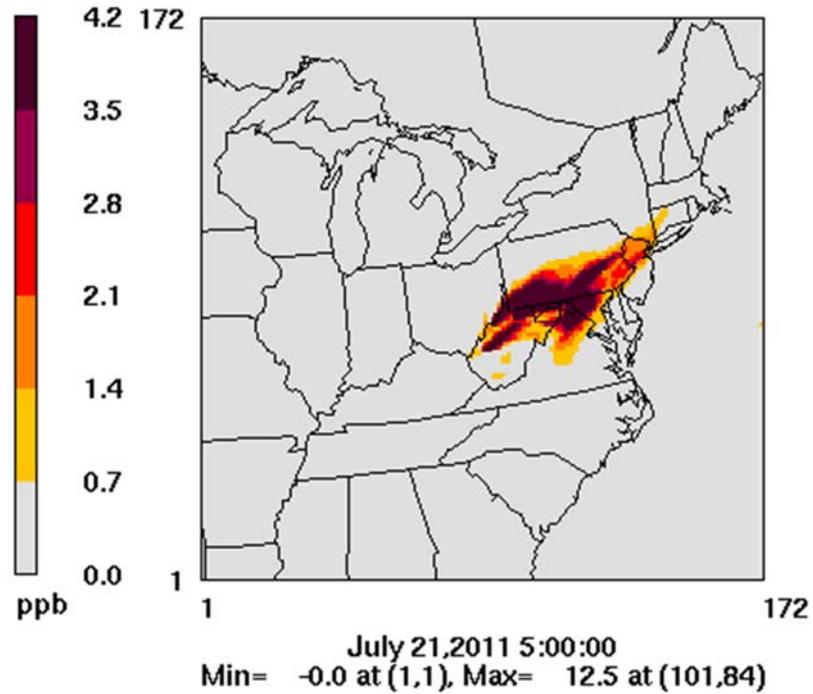
Between 2017 Base and 2017 VA Control Cases
From Mid-May till End of July, 2011



Maximum Pennsylvania impact on Susan Wagner monitor = 4.660 ppb Maximum Virginia impact on Susan Wagner monitor = 0.807 ppb

Ozone Impacts from WV

Between 2017 Base and 2017 WV Control Cases
From Mid-May till End of July, 2011



Maximum West Virginia impact on Susan Wagner monitor = 2.273 ppb