ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Nos. 18-1203, 18-1205, 18-1206, 18-1208, 18-1212, 18-1214 (cons.)

CLEAN WISCONSIN, *et al.*
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and
ANDREW R. WHEELER, Acting Administrator,
United States Environmental Protection Agency,
Respondents.

BCCA Appeal Group, *et al.*,
Intervenors.

PETITION FOR REVIEW OF FINAL ADMINISTRATIVE ACTION OF
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PETITIONERS' JOINT FINAL OPENING BRIEF

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DATED: August 7, 2019

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rules 15(c)(3) and 28(a)(1), Clean Wisconsin, Board of County Commissioners of Boulder County, Center for Biological Diversity, National Parks Conservation Association, Environmental Law and Policy Center, Respiratory Health Association, City of Chicago, State of Illinois, Familias Unidas del Chamizal, City of Sunland Park, New Mexico, and Sierra Club ("Petitioners") submit this certificate as to parties, rulings, and related cases:

I. THE PARTIES

This case involves petitions for review of final agency action. Petitioners in the consolidated cases are as follows:

18-1203: Clean Wisconsin

18-1205: Board of County Commissioners of Boulder County; Center for Biological Diversity; National Parks Conservation Association

18-1206: Environmental Law and Policy Center; Respiratory Health Association

18-1208: City of Chicago; State of Illinois

18-1212: Familias Unidas del Chamizal; City of Sunland Park, New Mexico

18-1214: Sierra Club

The Respondents in all the consolidated cases are the United States Environmental Protection Agency (EPA) and Andrew Wheeler, EPA Administrator.

Respondent-Intervenors in the consolidated cases include: BCCA Appeal Group; El Paso Electric Company; Greater El Paso Chamber of Commerce; State of Michigan; State of Texas; State of Wisconsin; Texas Association of Manufacturers; Texas Commission on Environmental Quality; Texas Oil & Gas Association.

Amici: The State of New York appears in this case as amici curiae supporting Petitioners. The American Petroleum Institute, Colorado Oil & Gas Association, Colorado Chamber of Commerce, and Colorado Farm Bureau appear as amici curiae supporting Respondents.

II. RULINGS UNDER REVIEW

Petitioners seek review of the final action by the U.S. Environmental Protection Agency entitled "Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards," EPA Docket Number EPA-HQ-OAR-2017-0548, 83 Fed. Reg. 25,776 (June 4, 2018), SA006.

III. CIRCUIT 26.1 DISCLOSURES

Petitioners' disclosures under Circuit Rule 26.1 are in a separate disclosure statement, below.

IV. RELATED CASES

Four petitions challenging the San Antonio, Texas 2015 Ozone NAAQS designations, 83 Fed. Reg. 35,136 (July 25, 2018), have been consolidated under the heading of *Texas, et al. v. EPA*, (5th Cir. No. 18-60606). As of August 2, 2019, that case is fully briefed and scheduled for oral argument during the week of October 7, 2019.

DATED: August 7, 2019

PETITIONERS' RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26.1 and D.C. Circuit Rule 26.1, Petitioners make the following disclosures:

Center for Biological Diversity: Non-governmental corporate party to this action: Center for Biological Diversity. Parent corporations: None. Publicly held company owning 10% or more of party's stock: None. Center for Biological Diversity, a non-profit corporation organized and existing under the laws of the State of California, is a national organization with more than 69,000 members nationwide whose mission is to ensure the preservation, protection, and restoration of biodiversity, native species, ecosystems, public lands and waters, and public health through science, policy, and environmental law.

Clean Wisconsin: Clean Wisconsin is a not-for-profit corporation organized under the laws of the State of Wisconsin and incorporated under Section 501(c)(3) of the Internal Revenue Code. Clean Wisconsin is a membership organization dedicated to environmental education, advocacy, and legal action to protect air quality, water quality and natural resources in the State of Wisconsin. Clean Wisconsin has no parent companies, and no publicly held company has a 10% or greater ownership interest in Clean Wisconsin.

Environmental Law and Policy Center: Environmental Law and Policy Center (ELPC) is an Illinois not-for-profit corporation dedicated to environmental

education, advocacy, and legal action to protect air quality, water quality, and natural resources throughout the Midwest. ELPC has no parent companies, and no publicly held company has a 10% or greater ownership interest in ELPC.

Familias Unidas del Chamizal: Familias Unidas del Chamizal (Familias Unidas) is a grassroots environmental justice organization based in the Chamizal neighborhood of El Paso, Texas. Among other things, Familias Unidas works to reduce air pollution affecting the Chamizal community. Pursuant to Rule 26.1(a), Familias Unidas del Chamizal hereby states that it does not have any parent corporations, and no publicly held corporation has a 10% or greater ownership interest in the organization.

National Parks Conservation Association: National Parks Conservation Association (NPCA). Parent corporations: None. Publicly held company owning 10% or more of party's stock: None. National Parks Conservation Association's mission is to protect and enhance America's national parks for the use and enjoyment of present and future generations. Since NPCA was established in 1919, it has advocated for protection of the natural environment, including air quality, in and around the national parks and other federal lands. NPCA is a membership-based organization and has 11,628 members in Colorado.

Respiratory Health Association: The Respiratory Health Association (RHA) is a 501(c)(3) charitable organization organized under the laws of the State

of Illinois. RHA, a public health leader in the Chicago metropolitan area since 1906, is dedicated to preventing lung disease, promoting clean air, and helping people live better through education, research, and policy change. RHA has no parent companies, and no publicly held company has a 10% or greater ownership interest in RHA.

Sierra Club: Sierra Club, a non-profit corporation organized and existing under the laws of the State of California, is a national grassroots organization with more than 790,000 members nationwide dedicated to the protection and preservation of the environment. It has no parent corporations, and no publicly held company has a 10% or greater ownership interest in it.

Federal Rules of Appellate Procedure, Rule 26.1 does not require a corporate disclosure statement for the **State of Illinois.**

Each of the following is a governmental party that has no corporate affiliates or relationships requiring disclosure:

The Board of County Commissioners of Boulder County consists of three individuals elected to serve as leaders of the Boulder County government.

The City of Chicago is a city in Illinois.

The City of Sunland Park is a city in New Mexico.

DATED: August 7, 2019

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Pursuant to Circuit Rule 28(a)(3), the following is a glossary of acronyms and abbreviations used in this brief:

AR-	Document numbers in EPA record with docket number EPA-HQ-OAR-2017-0548
EPA	United States Environmental Protection Agency
Illinois EPA	Illinois Environmental Protection Agency
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
VOCs	Volatile Organic Compounds

STATEMENT OF JURISDICTION

(A) Agency: The United States Environmental Protection Agency (EPA) has jurisdiction to make national ambient air quality standards (NAAQS) designations. 42 U.S.C. § 7407(d).

(B) Court of Appeals: This Court has jurisdiction to review EPA's final NAAQS designations. *Id.* §§ 7607(b)(1), (d)(7)(B).

(C) Timeliness: The Clean Air Act (the Act) requires Petitions for Review to be filed within sixty days from the date of publication in the Federal Register. *Id.* § 7607(b)(1). EPA published the 2015 ozone designations on June 4, 2018. 83 Fed. Reg. 25,776 (June 4, 2018), SA006. Clean Wisconsin, Board of County Commissioners of Boulder County, Center for Biological Diversity, National Parks Conservation Association, Environmental Law and Policy Center, Respiratory Health Association, City of Chicago, State of Illinois, Familias Unidas del Chamizal, City of Sunland Park, New Mexico, and Sierra Club (collectively, "Petitioners") filed Petitions challenging EPA's final designations between August 1 and August 3, 2018.

STATUTES AND REGULATIONS

Relevant statutes and regulations appear in an addendum.

STATEMENT OF THE ISSUES PRESENTED

Whether EPA's decision to designate all of: McHenry and Monroe Counties, Illinois; Porter County, Indiana; Racine, Waukesha, and Washington Counties, Wisconsin; Jefferson County, Missouri; Ottawa County, Michigan; and El Paso County, Texas as attainment/unclassifiable for the 2015 ozone NAAQS was arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law;

Whether EPA's decision to designate portions of Milwaukee, Ozaukee, Kenosha, Manitowoc, Sheboygan, and Door Counties, Wisconsin; Lake County, Indiana; and northern Weld County, Colorado as attainment/unclassifiable for the 2015 ozone NAAQS, was arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law; and

Whether EPA's final designations of El Paso County, Texas and Ottawa County, Michigan violated the plain language of 42 U.S.C. § 7407(d)(1)(A)(i), and this Court's precedent, insofar as they rest on the premise that a county that is not the *primary* cause of a nearby area's NAAQS violation need not be listed as nonattainment; and

Whether EPA's final designation of northern Weld County, Colorado is unlawful because EPA violated the plain language of 42 U.S.C. § 7407(d)(1)(A)(i),

which does not require a nearby area's contribution to be "significant" to be designated nonattainment.

BACKGROUND AND STATEMENT OF FACTS

A. Ground-level Ozone and the Clean Air Act.

Ground-level ozone (ozone) forms when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react together in sunlight. 83 Fed. Reg. 25,776, 25,777 (June 4, 2018), SA007. Ozone precursors are emitted by stationary sources (such as power plants and industrial facilities) and motor vehicles. *Id*.

Ozone is dangerous. Exposure to ozone can impair breathing, aggravate asthma, increase emergency room visits, and lead to premature death. *Id.* at 25,778, SA008. Children, the elderly, and people with respiratory conditions are most at risk from exposure to ozone pollution. *Id.*

In furtherance of the Act's general purpose to "protect and enhance the … nation's air resources, so as to promote the public health," 42 U.S.C. § 7401(b)(1), Congress directed EPA to issue NAAQS for ozone that are "requisite to protect the public health" "allowing an adequate margin of safety." *Id*. These standards must be reviewed and, if appropriate, revised every five years. *Id.* § 7409(d)(1). After EPA revises a NAAQS, states have one year to submit initial geographic area designations for all areas in the country. Area designations must list as nonattainment "any area that does not meet (or that contributes to ambient air

quality in a nearby area that does not meet)" the NAAQS. *Id*. § 7407(d)(1)(A)(i). Because ozone precursors travel readily through the air and are emitted by both stationary and mobile sources, ozone nonattainment areas often encompass multi-county regions. AR-0061 at 5 & Attach. 3, JA0051, JA0519-0532.[1] EPA must review the initial designations and "make such modifications as [it] deems necessary," 42 U.S.C. § 7407(d)(1)(B)(ii), after giving states 120 days' notice of EPA's intentions and an opportunity to provide additional information. *Id.* § 7407(d)(1)(B)(ii) (this required EPA notification has become known as a 120-day letter).

The designation of an area is important because it determines the stringency of emission controls required. For attainment or unclassifiable areas, a state need only implement "emission limitations and such other measures as may be necessary … to prevent significant deterioration of air quality." *Id.* § 7471. "For a nonattainment area, however, the Act imposes more stringent requirements." *Miss. Comm'n on Envtl. Quality v. EPA*, 790 F.3d 138, 146 (D.C. Cir. 2015). For example, a state must ensure that existing sources in a nonattainment area implement "reasonably available control technology." 42 U.S.C. § 7502(c)(1). In addition, a state must establish a permitting program for new or modified sources

[1] Documents in the administrative record numbered EPA-HQ-OAR-2017-0548-#### are cited AR-####.

in nonattainment areas, which ensures that these sources obtain offsets for their emissions and achieve the "lowest achievable emission rate." *Id.* §§ 7502(c)(5), 7503(a). Subpart 2 of the Act sets forward further requirements, classifications, and compliance deadlines for ozone nonattainment areas, including the requirement that motor vehicle inspection and maintenance programs be established in certain nonattainment areas. *See id.* §§ 7511-7511f.

B. EPA's 2016 Designations Guidance.

On October 1, 2015, EPA strengthened the NAAQS for ozone from 75 to 70 parts per billion concentration. 80 Fed. Reg. 65,292 (2015 ozone NAAQS). EPA subsequently issued guidance identifying the factors the agency would consider in establishing area designations and nonattainment boundaries under this rule. AR-0061, JA0507-0532. The Designations Guidance explained that EPA would use a five-factor-based evaluative process "consistent" with that used in the 2008 ozone and the 2012 particulate matter designation processes. *Id*. at 6 & n.12, JA0512. EPA also said it would determine whether an area was in attainment using "the most recent complete three consecutive calendar years of quality-assured, certified air quality data in the EPA Air Quality System." *Id.* at 3, JA0509. If a NAAQS violation was identified, EPA would then determine whether any nearby areas contributed to the violation. *Id*.

Because ozone and its precursors are "readily transported" across geographic areas, EPA explained that it would consider a "relatively broad geographic area" in determining which areas contributed to a violation. *Id.* at 5, JA0511.

> Thus, for analyzing whether nearby areas contribute to a violating area, the EPA intends to consider information relevant to designations associated with the counties in the Combined Statistical Area or, where appropriate, the Core Based Statistical Area … in which the violating monitor(s) are located.

Id. EPA stated that it was not "setting a threshold contribution level or 'bright line' test for determining whether a contributing area should be included within the boundaries of a given nonattainment area." *Id.*, Attach. 3 at *1, JA0519. Rather, it would make this determination based on a "case-by-case evaluation of the relevant facts and circumstances in each nonattainment area." *Id.* This five-factor-based analysis would include: air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. *Id.*

The first factor identifies "all monitored violations of the NAAQS using the most recently available design values." *Id.* at *4, JA0522. EPA has defined "design value" to mean "the 3-year average of the annual 4th highest daily maximum 8-hour average ozone concentration." 83 Fed. Reg. at 25,779, SA009.

The second factor considers "local NOx and VOC emissions contributions from mobile and stationary sources and transport from nearby areas [that] can contribute to higher ozone levels at the violating monitors," based on data from the

latest National Emissions Inventory. AR-0061, Attach. 3 at *5, JA0523. EPA also considers data providing additional context for understanding emission trends in a metropolitan area: population and degree of urbanization, and traffic and commuting patterns. *Id.* at *6, JA0524.

The third factor "assess[es] the fate and transport of emissions" considering meteorological data. *Id.* at *7, JA0525. EPA frequently uses a model to produce "back trajectories," which illustrate the 3-dimensional paths traveled by air parcels to a violating monitor." *Id.*

The fourth factor examines "physical features of the land that might define the airshed." *Id.* at *10, JA0528. For example, "[m]ountains or other physical features may influence the fate and transport of emissions as well as the formation and distribution of ozone contributions." *Id.* In addition, "valley-type topographical features can cause local stagnation episodes where vertical temperature inversions effectively 'trap' air pollution." *Id.*

The fifth factor considers "existing jurisdictional boundaries" to provide "a clearly defined legal boundary" and ensure "meaningful air quality planning and regulation." *Id.* at *10-11, JA0528-0529.

Under the Designations Guidance, EPA "use[s] a weight-of-the-evidence approach," considering all five factors in reaching its conclusion. *Id.* at *11, JA0529. "The guiding principle for this evaluation should be to include, within the

boundaries of the nonattainment area, nearby areas with emissions of ozone precursors (NOx and VOC) that contribute to the violating monitor on days that exceed the NAAQS." *Id.*

C. Timeline of EPA's 2015 Ozone NAAQS Designation Process.

Area designations for the strengthened 2015 ozone standards required initial state submissions by October 1, 2016, and final action by the Agency by October 1, 2017. *See* 42 U.S.C. § 7407(d)(1). States complied with the October 2016 initial submittal deadline, but EPA attempted, without notice, to extend the designations process by one year. 82 Fed. Reg. 29,246 (June 28, 2017). After various parties sued, EPA withdrew its extension but published designations only for areas for which states recommended a designation of attainment or unclassifiable. 82 Fed. Reg. 54,232 (Nov. 16, 2017), JA1428. In December 2017, EPA was sued for failing to designate all areas for the 2015 ozone NAAQS by the October 1, 2017 deadline. *See Am. Lung Ass'n v. Pruitt* (N.D. Cal. No. 4:17-cv-06900-HSG), *consolidated with California v. Pruitt* (N.D. Cal. No. 4:17-cv-06936-HSG). The court ordered EPA to promulgate final designations for all areas of the country, except for eight counties in the San Antonio area, by April 30, 2018. *In re: Ozone Designations Litigation*, 286 F. Supp. 3d 1082 (N.D. Cal. 2018).

On December 20, 2017, EPA sent 120-day letters to states and tribes, announcing intended designations. EPA requested any additional information

(including any certified 2017 air quality monitoring data) that states wanted EPA to consider in making final designations by February 28, 2018. On January 5, 2018, EPA published its intended designations and invited public comment until February 5, 2018. 83 Fed. Reg. 651 (Jan. 5, 2018), SA079. On April 30, 2018, EPA finalized designations for the areas addressed in the 120-day letters, which were published on June 4, 2018. 83 Fed. Reg. 25,776 (June 4, 2018), SA006.

D. EPA's Designations of the Six Challenged Areas.

1. Chicago, IL-IN-WI.

a) Illinois—McHenry County.

EPA designated McHenry County, Illinois nonattainment under the prior two ozone standards, promulgated in 1997 and 2008. AR-0078 at 5, JA0554. The Illinois Environmental Protection Agency (Illinois EPA) likewise recommended a nonattainment designation under the 2015 standard in its 2016 submission to EPA. AR-0015 at 50, JA0244. Rigorously applying EPA's five-factor test in an 83-page technical support document, Illinois EPA concluded that McHenry County contributed to violations in the Chicago nonattainment area. *Id.* at 7, JA0201.

In December 2017, EPA announced that it intended to accept Illinois EPA's recommendations. AR-0078 at 2, JA0551. EPA's 25-page technical support document explained that of counties in the Chicago nonattainment area without violating monitors, McHenry had among "the highest VOC emissions" and "most

traffic" as well as the highest percentage of workers who commuted to a county with a violating monitor. *Id.* at 17, 23, JA0566, JA0572. And critically, "[m]eteorological analysis" demonstrated that emissions from McHenry were "capable of transporting to the … violating monitors on the days that the monitored ozone values exceed the standard." *Id.* at 23, JA0572.

Indeed, EPA's analysis demonstrated that the basis for McHenry County's nonattainment designation had strengthened since Illinois EPA's recommendation, based on updated air quality data. While Illinois EPA had relied on data from 2013-2015 showing that McHenry County's design value was 65 parts per billion, AR-0015 at 13, JA0207, the updated data from 2014-2016 revealed an increase to 68 parts per billion, including 73 parts per billion in 2016. AR-0078 at 8, JA0557. And while Illinois EPA had based its recommendation on just one violating monitor in the Chicago area from 2013-2015, AR-0015 at 13, JA0207, EPA determined that there were six violating monitors from 2014-2016—each in counties abutting McHenry. AR-0078 at 8, JA0557.

On February 28, 2018, Illinois EPA submitted air-monitoring data for 2017. This data further supported Illinois EPA's recommended designations, revealing that the number of violating monitors in Cook County had doubled to six. AR-0399, JA1026-1028; AR-0078 at 8, JA0557; AR-0418 at 7, JA1275.

Nevertheless, on or about April 26, 2018—two months *after* EPA's deadline—Illinois EPA Director Alec Messina sent a one-page letter to then-EPA Administrator Scott Pruitt. AR-0363, JA1371. The sole substantive paragraph in the Messina Letter stated in full:

> I appreciate the recent opportunity for discussion of impending air quality designations for ozone as part of the 120-day consultation process. Indeed, Illinois EPA would be comfortable in an approach to such designations that ensures national and regional consistency by considering the 2014 emissions data that evinces the county-by-county contributions of nitrogen oxides and volatile organic material. As such, it would seem appropriate to consider a designation of attainment for the Illinois counties of McHenry and Monroe.

Id. A Freedom of Information Act request to Illinois EPA generated documents indicating that EPA had solicited the Messina Letter—documents that EPA had omitted from the record before agreeing to add them at Petitioners' request.[2] Those documents show that on April 25, 2018, EPA employee Clint Woods e-mailed Messina seeking "5 min[ute]s ... for a quick call about ozone," explaining that Pruitt "asked me to reach out with 2 quick questions." Exh. 2 at 1, JA1452. The next day, Messina asked Woods for "another 30 seconds." *Id.* at 6, JA1456. Messina then e-mailed Woods on April 27 to report that Messina had overnight

[2] Counsel for EPA confirmed with Counsel for Petitioners in January 2019 that a number of documents underlying EPA's decision will be included in the formal record. *See* Exh. 1, JA1443-1450. Due to the government shutdown, that was not done as of the filing deadline for Petitioners' Opening Brief. Exhibit 2 includes the Illinois EPA-EPA exchange of correspondence, and now appears at AR-0437, JA1452-1468.

mailed his Letter that day. *Id.* at 3, JA1454. Woods responded: "Thanks so much – We'll be in touch soon." *Id*. at 5, JA1455.

On April 30, 2018—just a few days after receiving the Messina Letter—EPA completed its final designations. The rule left McHenry County out altogether (83 Fed. Reg. at 25,801-25,804, SA031-034), but the accompanying technical support document removed it from the list of nonattainment counties. AR-0418 at 2, JA1270. EPA later amended its final rule to designate McHenry County as attainment. 83 Fed. Reg. at 52,157-52,158, JA1432-1433. EPA offered no fact-based explanation for its about-face. EPA instead cited—seven times—the Messina Letter that EPA apparently had itself solicited in asserting that "EPA's designation of McHenry County as attainment/unclassifiable is consistent with Illinois' communication to EPA in [the Messina Letter]." AR-0418 at 1, 2, 9 n.10, 11 n.11, 14 n.12, 17 n.14, 23, JA1269, JA1270, JA1277, JA1279, JA1282, JA1285, JA1291.

b) Indiana Counties.

Indiana recommended that Lake and Porter Counties be designated attainment because (1) 2014-2016 data showed no monitors in either county violating the 2015 ozone standard; (2) their emissions comprised a small portion of the Combined Statistical Area's total emissions; and (3) the region's air quality had

improved due to control measures implemented under previous nonattainment area requirements. AR-0016, Encl. 3 at 14-15, JA0280-0281.

EPA recommended designating Lake and Porter Counties as nonattainment. AR-0078 at 2, JA0551. EPA concluded that these counties contributed to ozone levels at violating monitors because "[m]eteorological analysis shows that emissions from these areas are capable of transporting to the locations of the violating monitors on the days that the monitored ozone values exceeded the standard." *Id*. at 23, JA0572. And of the sixteen counties in the Combined Statistical Area without violating monitors, Lake and Porter Counties both ranked among the six highest for several emissions-related metrics. *Id.* Indiana submitted supplemental data consisting of 2015-2017 design values for Lake and Porter County monitors, and again recommended attainment designations for both counties. At no point did Indiana suggest a partial county designation. AR-0292 at Encl. 1, JA0784.

EPA's final designation, although based on exactly the same facts as its intended nonattainment designation, was completely different, including only a small portion of Lake County in the nonattainment area and excluding Porter County altogether. AR-0418 at 2, JA1270.

2. Wisconsin – Milwaukee Combined Statistical Area, Kenosha, Sheboygan, Manitowoc, and Door Counties.

Wisconsin initially recommended that EPA designate all counties in the state as attainment for the 2015 ozone standard. AR-0051 at 1, JA0402. Six months later, the Wisconsin Department of Natural Resources (Wisconsin) recommended a novel "distance-from-the-shoreline approach" to define nonattainment area boundaries, *id.* at 4-5, 43-55, JA0419-0420, JA0458-0470, which was based on photochemical modeling that Wisconsin said shows "a steep, consistent ozone concentration gradient along the entire Lake Michigan lakeshore." *Id.* at 15, JA0430. Wisconsin also asserted that any NAAQS violations were due to "emissions originating from outside the state of Wisconsin" and that "local emissions are irrelevant for the purposes of considering nonattainment boundaries." *Id*. at 3, JA0418.

In December 2017, EPA announced intended nonattainment designations for five counties in the Milwaukee Combined Statistical Area (Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties) and parts of four additional Wisconsin counties (Door, Manitowoc, Sheboygan, and Kenosha Counties). AR-0116 at 3, 20, JA0612, JA0629; AR-0078 at 2, JA0551. These intended designations were based on air quality data from 2014-2016 which establish that design values for monitors in Kenosha, Milwaukee, Ozaukee, Sheboygan and Door Counties exceed the 2015 ozone NAAQS. AR-0116 at 8-11, 23-26, 46-49, 66-69,

JA0617-0620, JA0632-34, JA0655-0658, JA0675-0678; AR-0078 at 6-10, JA0555-0559. They also were based on EPA's analysis of modeled 100, 500, and 1000-meter back trajectories showing emission-transport patterns and 2014 National Emissions Inventory data demonstrating that local emission sources in all nine counties contribute to ozone violations in Wisconsin. AR-0116 at 11-19, 27-40, 50-59, 70-78, JA0620-0628, JA0636-0649, JA0659-0668, JA0679-0687; AR-0078 at 10-21, JA0559-0570.

Wisconsin objected to EPA's intended designations, saying EPA should have focused exclusively on 100-meter back trajectories that primarily track emissions from sources outside the state. AR-0300 at 10-11, A8-A9, JA0899-0900, JA0931-0932. Wisconsin also discounted EPA's National Emissions Inventory data analysis documenting NOx and VOC emissions from stationary and mobile sources in Wisconsin, insisting that "[l]ocal emissions do not meaningfully influence air quality in EPA's intended nonattainment areas." AR-0300 at 12, JA0901. In one instance, Wisconsin asserted that "the intended nonattainment area was intentionally designed to *include* major emissions sources located in the county" but that "[i]t is inappropriate for EPA to do this." *Id*. at 30, JA0919 (emphasis added). Finally, Wisconsin presented alternatives to EPA's intended designations that "use a 'distance-from-the-shoreline' approach to determine nonattainment area boundaries." *Id.* at 21, JA0910.

EPA ultimately replaced *all* of its intended Wisconsin designations with much narrower final nonattainment areas along the Lake Michigan shoreline in Kenosha, Milwaukee, Ozaukee, Sheboygan, Manitowoc and Door Counties. AR-0419 at 3, JA1296; AR-0418 at 2, JA1270. Racine, Washington, and Waukesha Counties received an attainment/unclassifiable designation—although EPA's intended *and final* technical support documents show that these counties have large ozone precursor point sources and many commuters traveling to areas with violating monitors. AR-0418 at 11-18, JA1279-1286; AR-0419 at 16-22, 33-37, 46-51, 61-66, JA1309-1315, JA1326-1330, JA1339-1344, JA1354-1359. Both technical support documents also show that mobile and stationary sources in the counties with violating monitors contribute to violations of the ozone NAAQS. AR-0078 at 10-21, JA0559-0570; AR-0116 at 11-19, 27-40, 50-59, 70-78, JA0620-0628, JA0636-0649, JA0659-0668, JA0679-0687; AR-0418 at 11-18, JA1279-1286; AR-0419 at 16-22, 33-37, 46-51, 61-66, JA1309-1315, JA1326-1330, JA1339-1344, JA1354-1359.

Although EPA's final Wisconsin and Chicago[3] technical support documents reference Wisconsin's "distance-from-the-shoreline" approach and emphasis on 100-meter modeled back trajectories, these documents present exactly the same air quality data and five-factor analyses included in the Wisconsin and Chicago

[3] Kenosha County is located in the Chicago, IL-IN-WI Nonattainment Area.

intended technical support documents. *See* AR-0078, JA0550-0574; AR-0116, JA0610-0691; AR-0418, JA1269-1293; AR-0419, JA1294-1366. The final technical support documents and the Agency's Response to Comments also expressly state that Wisconsin's claims that local source impacts are minimal "are difficult to fully evaluate because EPA does not have the details necessary to fully review the … modeling analyses that these claims are based on." AR-0419 at 25, 40, 54, JA1318, JA1333, JA1347; *see also*, AR-0417 at 26-28, JA1212-1214. EPA nonetheless modified all of its intended designations for Wisconsin counties to completely eliminate nonattainment designations for three counties and to significantly reduce areas designated nonattainment in six other counties.

3. Michigan Counties.

Michigan initially recommended that three Western Michigan Counties, Allegan, Muskegon, and Berrien, should be designated nonattainment due to the "consistently elevated concentrations" of ozone at monitors located in each county, commonly exceeding the 2015 ozone standard. AR-0024 at 66, JA0356. However, based on assertions that the violating monitors were primarily impacted by pollution from across Lake Michigan, rather than local sources, Michigan did not include Ottawa County, which neighbors both Allegan and Muskegon Counties, in its nonattainment recommendations. *Id.* at 8, JA0298. EPA's intended designations adopted Michigan's recommendations, including a February

2017 revised recommendation to shrink the nonattainment areas of Allegan and Muskegon counties to only the westernmost portions of the counties along the shore. AR-0084 at 20, JA0605.

Sierra Club submitted comments on the intended designations documenting that each factor typically relied on by EPA to determine whether a county's sources are "contributing" to violations weighed towards the conclusion that Ottawa County was in fact contributing to monitored violations in Western Michigan, and therefore should be designated nonattainment. AR-0287 at 1-6, JA0757-0762. For example, Ottawa County's emissions of ozone precursors rank well above the Western Michigan counties EPA designated as nonattainment, and higher than most of the out-of-state counties that Michigan blamed for the violations. *Id.* at 2, JA0758. Air dispersion modeling submitted with Sierra Club's comments specifically illustrated how the emissions of one large source of ozone precursor pollution (the JH Campbell power plant) in Ottawa County influenced the violating monitors. *Id.* at 3-5, 7-11, JA0759-0761, JA0763-0767. Sierra Club also referenced EPA's own record showing high population, population density, and vehicle miles traveled in Ottawa compared to neighboring counties. *Id.* at 6, JA0762.

EPA's final designations for Western Michigan nonetheless declined to designate any portion of Ottawa County nonattainment. AR-0414 at 2, JA1109.

As it did in the final designations for Wisconsin, see *supra*, EPA relied on its theory that at shoreline locations there is little contribution to ozone pollution from local sources due to a "lake breeze" effect (*i.e.*, winds blowing from the lake towards the shore). AR-0414 at 20, JA1127. EPA responded to Sierra Club's comments only briefly, rejecting the modeling, and stating that the violating monitors are "primarily impacted by emissions from the Chicago [Combined Statistical Area]." AR-0417 at 20, JA1206. EPA did not specifically address Ottawa County's level of ozone precursors, or any other part of the five-factor analysis.

4. St. Louis, MO-IL.

a) Illinois—Monroe County.

EPA designated Monroe County, Illinois nonattainment under the 1997 and 2008 ozone standards. AR-0211 at 5, JA0696. Illinois EPA likewise recommended a nonattainment designation for the 2015 standard in its 2016 submission to EPA. AR-0015 at 52, JA0246. Illinois EPA explained that Monroe County, which lacks a monitor, contributed to violations at a monitor in the St. Louis nonattainment area. *See id.* at 13, 52, JA0207, JA0246.

EPA announced its intention to accept Illinois EPA's recommendations. AR-0211, JA0692-0716. Indeed, the basis for Monroe County's nonattainment designation had strengthened since Illinois EPA's recommendations due to updated

information provided by Illinois EPA. EPA determined that the number of violating monitors in the St. Louis area had increased from one to five, including three in counties abutting Monroe. *Id.* at 7, JA0698. Moreover, EPA found that ozone-causing emissions traveled "predominately from the south"—a critical conclusion given Monroe County's location south or southeast of the violating monitors. *Id.* at 17-22, JA0708-0713.

In February 2018, Illinois EPA submitted updated air quality data, but did not retreat from its recommended (EPA's intended) designation. AR-0399, JA1026-1028. Nevertheless, on or about April 26, 2018—after the deadline for state submissions—Illinois EPA submitted the Messina Letter at the apparent request of EPA. As described more fully above, the Messina Letter stated that "it would seem appropriate to consider a designation of attainment for … Monroe." AR-0406, JA1371.

On April 30, 2018, EPA issued final designations that omitted Monroe County entirely. The accompanying technical support document listed Monroe as attainment, however, repeatedly citing the Messina Letter. AR-0416 at 1 n.1, 2 n.3, 25, JA1160, JA1161, JA1184. EPA later added Monroe to the list of attainment areas in a corrections rule. 83 Fed. Reg. at 52,157-52,158, JA1432-1433.

b) Missouri—Jefferson County.

In 2016, Missouri recommended nonattainment designations for the St. Louis-area counties of Franklin, Jefferson, St. Charles, and St. Louis, and St. Louis City (consistent with the 1979, 1997, and 2008 ozone NAAQS designations for the St. Louis area). AR-0026 at 1, JA0370; AR-0303 at 6, JA0951. A year later, Missouri stated its intention to submit a revised recommendation, and asked EPA to defer action pending that revision. AR-0085, JA0579. Missouri's initial recommendation was based on monitoring data from 2013-2015, with one county (St. Charles) included in the nonattainment area due to a violating monitor (West Alton) and the remaining four counties included as contributors to the violations at that monitor. AR-0026 at 1-2, 32-34, JA0370-0371, JA0389-0391.

In December 2017, EPA issued intended nonattainment designations for Franklin, Jefferson, St. Charles, and St. Louis Counties, and St. Louis City, based on 2014-2016 monitoring data and its own analysis. AR-0211 at 2, JA0693. Two counties (St. Charles and St. Louis) were included in the nonattainment area due to violating monitors (including the West Alton monitor in St. Charles) and the other three counties were included as contributors. *Id.* at 6-7, JA0697-0698.

In February 2018, Missouri submitted its revised recommendation, based on 2015-2017 monitoring data, proposing to omit Jefferson and Franklin Counties and limit the nonattainment area to St. Charles and St. Louis Counties and St. Louis

City. AR-0303 at 1-2, JA0946-0947. As was true with the state's initial recommendation (based on 2013-2015 data, and including Jefferson and Franklin Counties), there was one violating monitor (West Alton) during the three-year period evaluated. *Id*. at 1, JA0946. Sierra Club's comment letter on the intended designations agreed with EPA that Jefferson and Franklin Counties contribute to the area's ozone exceedances and urged EPA to reject Missouri's revised recommendation to exclude those counties from the nonattainment area. AR-0272, JA0726-0732.

EPA knew the details of Missouri's revised recommendation before deciding to include Jefferson and Franklin in its intended nonattainment area. *See* AR-0303, JA0936-1025. Four months later, and, based on no new emissions or emissions-related information, EPA reversed course, adopting Missouri's revised recommendation to exclude Jefferson and Franklin Counties from the nonattainment area, except a portion of Franklin County containing a large NOx emissions source. AR-0416 at 25-27, JA1184-1186.

5. Metro-Denver Area—Northern Weld County.

EPA designated the Denver-Boulder-Greeley-Ft. Collins-Loveland, CO (Metro-Denver)[4] area as nonattainment for the 1997 ozone NAAQS. 69 Fed. Reg.

[4] The name of the nonattainment area is officially "Denver Metro/North Front Range, CO", *see* 40 C.F.R. § 81.306. Colorado and EPA often refer to it as the "Denver-Boulder-Greeley-Fort Collins-Loveland region."

23,858, 23,858(Apr. 30, 2004). EPA did not include northern Weld County in the nonattainment area. *Id.* Metro-Denver failed to attain the 1997 ozone NAAQS by the date it was originally required to do so. 74 Fed. Reg. 2,936 2,944 n.b (Jan. 16, 2009).

EPA designated Metro-Denver as a marginal nonattainment area for the 2008 ozone NAAQS. 77 Fed. Reg. 30,088, 30,110 (May 21, 2012). EPA did not include northern Weld County in the nonattainment area. *Id.* The area failed to attain the 2008 ozone NAAQS by its marginal and moderate attainment dates. 81 Fed. Reg. 26,697, 26,699 (May 4, 2016); 83 Fed. Reg. 56,781, 56,784 (Nov. 14, 2018).

EPA designated Metro-Denver as a marginal nonattainment area for the 2015 ozone NAAQS. 83 Fed. Reg. at 25,792, SA022. The nonattainment area included Boulder, Denver, Jefferson, Douglas, Broomfield, Adams, and Arapahoe Counties and parts of Larimer and Weld Counties. *Id.* EPA did not include northern Weld County in the nonattainment area. *Id.*

The third time is not the charm. Current ambient monitoring data indicate that it is very unlikely the Metro-Denver area will attain by its 2015 ozone NAAQS marginal attainment date unless something changes from past approaches.

The chances of attaining the 2015 ozone NAAQS while excluding northern Weld County are even worse than for the 2008 and 1997 ozone NAAQS. This is

because the pollution in Metro-Denver has shifted north over time as oil and gas extraction in the north has boomed, coal-fired power plants in the urban areas have closed, and cars and trucks have gotten cleaner because of fleet turnover and federal mobile source regulations. *Compare* AR-0069 at 12, JA0537 *with* AR-0007 at 47, JA0103.[5]

Turning to the specifics of EPA's decision to exclude the northern part of Weld County (northern Weld) from the nonattainment area for the 2015 ozone NAAQS, EPA's guidance explained that "generally" it is appropriate to include the entire contributing county in an ozone nonattainment area but there are exceptions. AR-0007 at 15, JA0083. On September 23, 2016, Colorado recommended to EPA that the Metro-Denver area be designated nonattainment for the 2015 ozone NAAQS. *Id.* at 1, JA0057. Colorado recommended that the Metro-Denver nonattainment area only include the southern part of Weld County. *Id*. at 6, JA0062. Specifically, the nonattainment area recommended was for the part of Weld County south of 40 degrees, 42 minutes, 47.1 seconds north latitude. *Id*. This division of Weld County to exclude the northern part did not correspond to any Office of Management and Budget demarcation, or Air Quality Control Region. *Id*.at 13 n.8, JA0069; 40 C.F.R. § 81.16. Rather, the Office of

[5] Page citations to AR-0007 are to the .pdf page numbers as this is a compilation of documents, some of which do not have page numbers.

Management and Budget Combined Statistical Area includes all of Weld County. AR-0007 at 55, JA0111. Thus, Colorado stated that northern Weld was in the presumptive nonattainment area based on EPA guidance. *Id*.

Colorado recommended excluding northern Weld so that the boundary would be the same as for the 1997 and 2008 ozone NAAQS nonattainment areas, which failed to attain by their attainment dates. *Id*. at 41, JA0097. Colorado incorrectly claimed that this nonattainment area would follow the South Platte River Valley to the northeast when, in fact, the nonattainment area is based on a straight, east-west line which divides the South Platte River Valley. *Id.*

There were no ozone monitors in northern Weld. *Id.* at 43, JA0099. However, all three monitors nearest to northern Weld were in violation of the 2015 ozone NAAQS based on the 2013-2015 data which Colorado used. *Id.* at 44, JA0100.

Colorado determined that northern Weld had 18,610 tons per year of "controllable" VOC emissions and 8,042 of NOx. *Id.* at 57, JA0113. Northern Weld had higher "controllable" VOC emissions than every other county in the nonattainment area except the parts of Weld and Larimer Counties included in the nonattainment area. *Id.* at 46-47, JA0103-0104. Northern Weld's "controllable" VOC emissions were nearly twice as high as Boulder County, nearly three times as

high as Douglas County and nearly *nine* times as high as Broomfield County. *Id*. Yet all three of those counties were in the nonattainment area.

Northern Weld's NOx emissions were higher than Broomfield and Douglas Counties' and the nonattainment part of Larimer County. *Id.* Northern Weld's NOx emissions were slightly less than Boulder County's. *Id.* Weld County's VOC emissions are 25 percent higher than all the VOC emissions in all the other counties in the nonattainment area combined. *Id*. As to overall emissions, Colorado said that northern Weld's emissions were 26.4 percent of Weld County's NOx and 13.9 percent of VOCs. *Id.* at 57, JA0113. Colorado did not note that Weld County's VOC emissions are greater than all of the rest of the counties in the nonattainment area. *Id.*

The sources of emissions in northern Weld are scattered throughout the county, but a large percentage of them are in the Platte River Valley, which is at essentially the same elevation as Greeley, Colorado, which is in the nonattainment area. By excluding northern Weld, Colorado was not subjecting these emissions sources to "numerous and aggressive emission control programs[.]" *Id*. at 83, JA0139.

As to population density and urbanization, Colorado's recommendation showed that population density was the same in much of Weld County both north and south of the nonattainment dividing line. *Id*. at 50, JA0106. While northern

Weld is sparsely populated, other parts of the nonattainment area are equally sparsely populated. *Id*.

Colorado also stated that northern Weld was an "infrequent contributor[]" to air quality in the nonattainment area based on the back-trajectory analyses. *Id*. at 57, JA0113. Colorado referenced Figures 1-23 to 1-29 to support the claim of very low number of trajectory points in the grid cells over the northern portion of Weld County. *Id.*

Colorado conducted this back-trajectory analysis only for the Fort Collins West, Rocky Flats, and Chatfield monitors for 2013-2015. *Id.* at 70, JA0126. But as noted above, there were two other monitors which showed violations of the 2015 ozone NAAQS which are closer to the excluded northern Weld, the Ft. Collins and Weld County Tower monitors. *Id.* at 43-44, JA0099-0100. Colorado ignored northern Weld's emissions contribution to those violating monitors. Colorado also ignored northern Weld's contribution to the violating monitor at South Boulder Creek in Boulder County.

Colorado's back trajectory analysis failed to consider another aspect of the problem: which areas contribute to all ozone violations. That is, for the Ft. Collins West monitor, Colorado only looked at back trajectories for the top four worst days. *Id.* at 70, JA0126. But the Ft. Collins West monitor had 19 exceedances of

the 2015 ozone NAAQS in 2013. Colorado ignored northern Weld's contribution to the 15 other exceedances.

Despite ignoring northern Weld's contribution to the nearest violating monitors, and most of the exceedances at the violating monitors it did look at, Colorado's analysis did indisputably show that emissions from northern Weld's emissions contributed to violations on multiple occasions. *See id*. at 71-77, JA0127-0133. Moreover, northern Weld contributed more often than did parts of the nonattainment area. *Id.* at 76, JA0132. It is worth noting that all grid cells contributed to violations less than 1.75 percent of the time. *Id.* at 77, JA0133.

There are no topographic or geological barriers between Greeley, which had a violating monitor, and northeast Weld County. The two areas are at the same elevation without any elevated features in between. *Id*. at 80, 81, JA0136, JA0137.

Colorado stated that meteorology is the single most important factor affecting mid-summer ozone in the Metro-Denver area. *Id.* at 67, JA0123. Colorado explained that one of the three key circulations affecting summer air quality is nighttime downhill flows moving surface air down the canyons and valleys towards the Platte Valley in Weld County. *Id.* at 68, JA0124. This results in the accumulation of emissions that are later in the day processed by the sun into ozone. *Id.* To the extent that parts of northern Weld are higher elevation than the

Platte River Valley, emissions from northern Weld would be moved towards the violating monitors, especially the one in Greeley.

As to the related issue of topography, Colorado stated that "the east-west Cheyenne Ridge along Colorado's border with Wyoming to the north of the South Platte Valley," is part of the geographic features which "create local circulations that tend to magnify and constrain the influence of local emissions on air quality." *Id.* at 67-68, JA0123-0124. Thus, northern Weld is *south* of the east-west Cheyenne Ridge along Colorado's border with Wyoming. *See, e.g.*, *id*. at 81, JA0137.

Colorado summarized its rationale for excluding northern Weld County from the nonattainment area as "[1] sparse population, low degree of urbanization, [2] low precursor emissions, and [3] infrequent contributions to air quality [Metro-Denver]." *Id.* at 57, JA0113.

During the public hearing on the recommendation, Petitioner Boulder County and an environmental nonprofit, Environmental Defense Fund, requested that the Colorado nonattainment area include northern Weld. *Id*. at 128, 130, JA0184, JA0186. Environmental Defense Fund explained that excluding northern Weld County was based on an arbitrary line across Weld County. *Id.* at 132-133, JA0188-0189. Environmental Defense Fund also noted that emissions in northern Weld and Larimer Counties were 30,000 tons in 2011, which is more than many of

the counties contained in the nonattainment area. *Id*. at 133, JA0189. In particular, VOC emissions in northern Weld were greater than three of the counties in the nonattainment area. *Id.* at n.10, JA0189. Environmental Defense Fund also noted that Colorado failed to consider air quality at the closest violating monitor to northern Weld. *Id.* at 135, JA0191. Without any response to these comments, Colorado submitted the recommendation excluding northern Weld.

EPA then issued its own initial technical support document in "response" to Colorado's recommendation. AR-0069, JA0534. EPA stated that it intended to follow Colorado's recommendation and exclude northern Weld using a straight east-west line. *Id.* at 2, JA0535.

EPA relied on 2014-2016 monitoring data. Colorado had chosen to stop operating the Boulder monitor in 2016 so there was no valid design value for 2014-2016. AR-0064 at box U290, JA0533. Rather than rely on the most recent design value available for Boulder County which showed the Boulder monitor to be violating the NAAQS, EPA chose to ignore northern Weld's contribution to Boulder County.

As to emissions, EPA looked at the 2014 rather than the 2011 data that Colorado had looked at. However, the 2014 data painted the same basic picture. Weld County's pollution dominates the nonattainment area. The complete Weld County's VOC emissions were more than all the other counties in the whole

nonattainment area combined. AR-0069 at 12, JA0537. The complete Weld County's NOx emissions were higher than any other county. *Id.* Weld's NOx, compared to the other counties in the nonattainment area, ranged from 24 times higher than Broomfield's emissions to almost twice Adams County's. *Id.*

EPA did not consider information about how much of Weld County's massive 2014 emissions were in the excluded northern part versus the included southern part. *Id.* at 13, JA0538. EPA did not consider a comparison of northern Weld's emissions to other counties in the nonattainment area. *Id.* All EPA stated was a "majority" of large and small sources and a majority of gas wells were located in the nonattainment area. *Id.* This does not tell us anything because not all large and small sources and gas wells have the same emissions.

EPA next evaluated meteorology and topography/geography. There is no reasonable debate that EPA's back trajectory analysis shows that pollution from northern Weld contributes on multiple days to all the violating monitors for the 2014-2016 time period. *Id.* at 23-27, JA0540-0544.

EPA then referenced Colorado's analysis of the meteorology. Again, this analysis put the northern border of the nonattainment area airshed as "the east-west Cheyenne Ridge along Colorado's border with Wyoming" and not the actual nonattainment boundary. *Id.* at 27, JA0544. EPA claimed that the Cheyenne Ridge "roughly coincide[s]" with the north boundaries for the 1997, 2008 and 2015

nonattainment boundary. *Id.* at 31, JA0548. EPA did not acknowledge the fact that the Weld County northern boundary, which is also the Colorado/Wyoming state line, would coincide much more closely with the Cheyenne Ridge.

EPA then claimed that topographic features, such as the Cheyenne Ridge, and airflows restrict contributions from sources on the upper reaches of and beyond the features, including northern Weld. *Id*. EPA cited to nothing to support this assertion. *See id.* Moreover, this claim is contradicted by EPA and Colorado's own back trajectory analysis which shows northern Weld contributing to violating monitors. *See id.* at 23-27, JA0540-0544. This unsupported claim is also contradicted by Colorado and EPA's explanation that down slope flows are one of the three important meteorological events that contributes to the Metro-Denver ozone problem.

EPA then reviewed Colorado's back trajectories analysis which used 2013-2015 data. *Id.* at 28-30, JA0545-0547. EPA acknowledged that Colorado analysis only looked at the four highest exceedances whereas EPA itself looked at all the exceedances. *Id*.[6] However, EPA ignored the fact that Colorado's analysis failed to consider the two closest violating monitors to northern Weld. *Id.*

[6] EPA's technical support document mistakenly says on page 28 that EPA looked at 2013-2015 data. Actually, EPA looked at 2014-2016 data. AR-0069 at 22, JA0539.

EPA labeled northern Weld County as the "Cheyenne Ridge." *Id.* at 31, JA0548. However, a topographical map shows that the Cheyenne Ridge is slightly north of Cheyenne, Wyoming. AR-0007 at 81, JA0137.

In response to EPA's request for public comments, petitioner National Parks Conservation Association submitted comments. AR-0246, JA0721-0724. The comments said that EPA must designate all of Weld County nonattainment, citing to a National Oceanic and Atmospheric Administration and National Center for Atmospheric Research study about the impacts of oil and gas pollution on ozone formation in Metro-Denver. *Id.* at 4, JA0724.

The Center for Biological Diversity, Sierra Club, and National Parks Conservation Association submitted another set of joint comments. AR-0273, JA0733-0742. The joint comments requested, among other things, that EPA include all of Weld County in the nonattainment area. *Id.* at 1, JA0733. The joint comments went through each of the five factors to explain why all of Weld County should be in the nonattainment area. *Id.* at 2-7, JA0734-0739.

The joint comments noted that EPA has already found that Wyoming, which is north of northern Weld County, significantly contributes to ozone violations in Metro-Denver. *Id.* at 4, JA0736. Thus, if Wyoming significantly contributes, and it is further away, northern Weld must meet the lower threshold of "contributes." *Id.*

Environmental Defense Fund also submitted comments. AR-0286, JA0743-0756. Their comments included a map, which "shows oil and gas permitting activity in northern Weld County so intense that it is indistinguishable from the oil and gas development occurring in the proposed nonattainment areas of those counties." *Id.* at 12 & Att.2, JA0754, JA0756.

EPA then issued its final technical support document. AR-0408, JA1045-1081. It was essentially the same as the initial one. *Compare id. with* AR-0069, JA0534-0549. However, EPA moved the label for the Cheyenne Ridge from the middle of northern Weld County in the initial technical support document to the northern edge of northern Weld County in the final, apparently conceding that the excluded part of northern Weld County is south of the Cheyenne Ridge. *Compare* AR-0408 at 34, JA1078 *with* AR-0069 at 32, JA0549. EPA also changed its narrative description of the Cheyenne Ridge and its relationship to northern Weld. EPA's final summary of why it excluded northern Weld was that EPA had captured the "bulk" of the oil and gas emissions in Weld County by including southern Weld County in the nonattainment area, that northern Weld does not have many people, and that northern Weld includes the Cheyenne Ridge which is the northern border of the Denver Basin. AR-0408 at 34, JA1078.

EPA issued a Response to Comments. AR-0417, JA1187-1268. EPA essentially just repeated several times that EPA applied the five-factor test to

conclude that emissions from northern Weld do not "sufficiently contribute" or "contribute" to air quality at the violating monitors. *Id.* at 42-44, JA1228-1230. EPA did not explain how its analysis honors the fact that Congress chose to include "significant" to modify "contribute" in some parts of the Clean Air Act but did not in Section 107(d)(1). *Id.* at 45, JA1231. EPA did not explain how Wyoming can significantly contribute to Metro-Denver's ozone nonattainment area, but northern Weld County does not meet the lower bar of just contributing. *Id.*

EPA stuck to its position of only considering northern Weld's emissions in relationship to Weld County as a whole. EPA refused to consider northern Weld's emissions compared to all the other counties or partial counties in the nonattainment area. *Id.* at 44, JA1230. Rather, EPA tried to escape this fact by repeating its mantra that it used a five-factor test. *Id.* at 46, JA1232.

As to topography, EPA acknowledged that its initial technical support document was not accurate and it modified the final to more accurately characterize the terrain in northern Weld which is excluded from the nonattainment area. *Id.* at 48, JA-1234. However, the topographic illustration that EPA included shows that much, if not most, of the excluded northern Weld is at or lower than the elevation of Greeley, Loveland and Ft. Collins, which are all in the nonattainment area. *Id.* (reproduced *infra* at 116) (blue oval added).

EPA did not consider setting the nonattainment boundary based on elevation, such as was used for the Uinta Basin in Utah. *See* 40 C.F.R. § 81.345. Like Weld County, the Uinta Basin is a rural area where massive emissions from the oil and gas industry are primarily responsible for the ozone problem. Rather, EPA excluded from the nonattainment area the part of Weld County north of 40 degrees, 42 minutes, 47.1 seconds north latitude although it was the same or a lower elevation than parts of the nonattainment area. 83 Fed. Reg. at 25,792, SA022.

6. New Mexico—El Paso, Texas.

New Mexico recommended that an area of southern Doña Ana County corresponding to the city limits of the City of Sunland Park be designated as nonattainment. AR-0035 at 16-18, JA0393-0395. Texas also initially recommended a nonattainment designation for El Paso County, based, in part, on data from June 21, 2015, when ozone concentrations reached 77 parts per billion at the University of Texas at El Paso monitor. AR-0108 at 1-1, SA004. On August 23, 2017, however, Texas revised its recommendation for El Paso, based on its conclusion that the June 21, 2015 data could be excluded under EPA's Exceptional Event Rule. AR-0046 at 1-2 & Att. A & B, JA0396-0401.[7]

[7] Although June 21, 2015 was not the worst air day during the three-year-period, or even the worst air day in 2015, its exclusion did allow Texas to lower the design-

On December 15, 2017, EPA issued its recommendations for New Mexico and Texas, concurring that the June 21, 2015 exceedance at the University of Texas El Paso was excludable, and that El Paso County was therefore in attainment for the NAAQS. EPA's accompanying technical support document applied EPA's five-factor test to conclude that El Paso County did not "contribute" to nonattainment in Sunland Park. AR-0100 at 8-22, JA0593-0607. EPA received comments disagreeing with its conclusion. *See* AR-0257 at 3, JA0725 (explaining that "El Paso contributes too much to the ozone violation in" Sunland Park to be excluded from the nonattainment area).

EPA's final rule designated Sunland Park as a nonattainment area, and El Paso County as in attainment. 83 Fed. Reg. at 25,820, SA050. EPA's final technical support document shows Doña Ana County had one violating monitor—namely, the Desert View monitor, which had a design value of 72 parts per billion for the years 2014 through 2016. AR-0405 at 7, JA1035. The Desert View monitor is located just over a mile from El Paso, Texas, in Sunland Park, New Mexico. Baake Decl. ¶ 2.

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value for this monitor from 71 parts per billion to 70 parts per billion. AR-0108 at 3-3, SA005.

Based on the 2014 National Emissions Inventory, EPA determined that El Paso, Texas was responsible for about 58 percent of the NOx and 68 percent of the VOC emissions within the area of analysis, while Doña Ana County (including the Las Cruces area located approximately 35 miles north of Sunland Park's violating monitor) was responsible for about 34 percent of the NOx and 30 percent of the VOC emissions. AR-0405 at 8-10, JA1036-1038. EPA also found that 79 percent of the area's population lived in El Paso, compared to 20 percent in Doña Ana County itself, and El Paso was growing faster and had higher population density than Doña Ana County. *Id.* at 10, JA1038. EPA also found that El Paso had nearly six billion vehicle miles traveled in 2014, compared to just over two billion vehicle miles traveled in Doña Ana County during the same year. *Id.* at 12, JA1040. Although the violating Desert View monitor is directly adjacent to the Rio Grande, and the river extends from Sunland Park into downtown El Paso, EPA did not consider whether the river valley affects the flow of air pollution. However, EPA did argue that the Franklin Mountains, which bifurcate the city of El Paso *north* of the Rio Grande, "appear to influence the flow of air by limiting air pollution transport," and further that the back trajectory analysis for exceedance days at the Desert View monitor showed "the violating monitor is primarily impacted by transport from Mexico." *Id.* at 14-15, JA1042-1043.

STANDARD OF REVIEW

At issue is whether EPA's action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); 42 U.S.C. § 7607(d)(9). This Court "review[s] the EPA's NAAQS designations under the same standard [it uses] in reviewing a challenge brought under the Administrative Procedure Act …." *Miss. Comm'n*, 790 F.3d at 150.

EPA's action is arbitrary and capricious if it relies on irrelevant factors, fails "to consider an important aspect of the problem," rests on an explanation that fails to give a "rational connection between the facts found and the choice made," "runs counter to the evidence before the agency," or is "implausible." *Motor Vehicle Mfrs. Ass'n, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks omitted); *Catawba Cnty. v. EPA,* 571 F.3d 20, 51-52 (D.C. Cir. 2009). In the designations context, while an "extreme degree of deference" is due to EPA decisions falling within the agency's "technical expertise," EPA must articulate "a rational connection between the facts found and the choice made, show that it treated *similar counties* similarly, and demonstrate that it did not run afoul of binding guidance." *Miss. Comm'n*, 790 F.3d at 171-72 (internal citations and quotation marks omitted).

"[A]n agency's failure to respond meaningfully to objections raised by a party [also] renders its decision arbitrary and capricious." *PSEG Energy Res. &*

Trade LLC v. FERC, 665 F.3d 203, 208 (D.C. Cir. 2011) (quotation marks omitted). The process used by the Agency in coming to its conclusions must be lawful, as well as "logical and rational." *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 652 (D.C. Cir. 2016).

SUMMARY OF ARGUMENT

The challenged designations for the 2015 NAAQS reveal an Agency acting in violation of the Clean Air Act, and contrary to the record before it, offering no reasonable or rational connections between the facts it found and the choices it made.

Having been forced to identify nonattainment areas by a court-ordered deadline, the Agency applied an erroneous legal standard for contribution to nonattainment, ignored or contradicted its own record (even by suggesting that geographic features are located in areas where they do not exist), cherry-picked data, failed to properly apply its own Designations Guidance factors, changed its mind without explanation, and violated statutory procedural requirements—all in a transparent effort to minimize the extent of nonattainment areas. The purpose of the designation process is to protect public health by assuring that emissions are reduced where they are contributing to poor air quality. Minimizing nonattainment area boundaries and excluding areas that contribute to poor air quality, as EPA has

done here, will result in continued adverse public health impacts, contrary to the requirements and purposes of the Clean Air Act.

The Chicago-area designation unlawfully excludes McHenry County in Illinois, and Porter and portions of Lake County in northwest Indiana, despite substantial evidence and EPA analysis in the record that directly contradicts that result. After Illinois EPA recommended and EPA initially designated McHenry County as nonattainment, EPA reversed course based on nothing more than a one-page letter solicited by the Agency itself from an Illinois EPA official, four days before the final designations were signed. EPA's failure to place the materials related to that letter in the record, until forced to do so by Petitioners, is further evidence of the unreasonableness of this final decision. The Agency also violated the law by not giving Illinois 120 days' notice of the changed final designation. As for Lake and Porter Counties, EPA failed to explain a conclusion contrary to its own technical support analysis, failed to explain why it changed its designations, and failed to explain its reasons for treating Lake and Porter differently from other counties with similar data.

EPA's final decision modifying *all* of EPA's intended nonattainment designations in Wisconsin ignores its own analysis of the factual record, laid out carefully in its intended designation, including National Emissions Inventory data showing local emissions in all nine counties contribute to NAAQS violations. In

its final decision shrinking the geographic extent of nonattainment areas in Wisconsin, EPA instead relies on methodologies offered by the state that EPA admits it cannot evaluate, and that contradict its own record assessment, with the result that major stationary sources and highways are excluded from the nonattainment area altogether.

EPA's final nonattainment designations for Western Michigan conspicuously exclude Ottawa County, despite EPA's own record showing that Ottawa County is home to far more ozone precursor pollution than any of the Western Michigan counties designated nonattainment, that it has a violating monitor on its border, has higher total population and density than the other area counties designated nonattainment, and contains several major commuter highways.

EPA failed to designate Monroe County, Illinois and Jefferson County, Missouri nonattainment, despite the Agency's own record evidence showing their contributions to the St. Louis nonattainment area. In each case, the final designation was a complete reversal from the Agency's intended designation, and EPA failed to provide a rational connection between its final decision and the facts before it. In the case of Monroe County, the Agency based its about-face principally on the Messina Letter solicited by EPA one week before the final designations were made public, as described above. In the case of Jefferson

County, EPA cherry-picked data and treated Jefferson differently from the portion of Franklin County that it designated nonattainment.

EPA's failure to designate northern Weld County Colorado as nonattainment is unlawful as it contradicts the plain language of the Act requiring nonattainment designations for contributing areas. EPA had previously determined that Wyoming, which is to the north of northern Weld County, significantly contributes to the Metro-Denver violations. EPA did not explain why northern Weld did not meet what must be a relatively lower standard of simply contributing. EPA moreover ignores record evidence of northern Weld County's contribution, including evidence provided by commenters (to which EPA failed to respond), and it defies facts on the ground in attempts to justify straight-line area boundaries based on geographic features that are not located where the Agency claims.

In designating El Paso County, Texas, EPA failed to articulate a rational connection between the facts found and the choice it made. Despite finding that El Paso was responsible for a majority of the domestic emissions—and roughly a quarter of *total* emissions—affecting Sunland Park, New Mexico's ozone nonattainment area, and despite the fact that the violating monitor is located *just over a mile* from the El Paso border, EPA came to the utterly implausible conclusion that El Paso does not "contribute" to nonattainment in Sunland Park.

All of these challenged designations are case studies of an Agency acting beyond its authority and outside its discretion in a blatant effort to minimize nonattainment boundaries. EPA misapplied the law it is tasked with implementing, and failed to consider important aspects of its own record. In some cases, EPA abruptly reversed course between its announced intended and final designations and without record support or even a discernable path in the record. In others, the Agency's application of the record is implausible. This is the epitome of an Agency acting arbitrarily, capriciously, and unlawfully. The challenged designations should be vacated with orders to the Agency to designate them nonattainment, consistent with this Court's opinion.

STANDING

A. Environmental Petitioners.

To demonstrate Article III standing, Petitioners must establish that at least one of their members has standing to sue in his or her own right, that Petitioners seek to protect interests that are germane to their organizational purposes, and that the participation of individual members is not needed. *See Sierra Club v. EPA*, 292 F.3d 895, 898 (D.C. Cir. 2002). A member has standing if he or she would suffer an injury-in-fact that is both fairly traceable to EPA's action and redressable by the court. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

Petitioners meet these requirements, for every claim they bring. They are nonprofit organizations whose purposes include protecting public health and the environment from air pollution. *See* Bewitz Decl. ¶ 3; Brubaker Decl. ¶¶ 2-3; Burd Decl. ¶ 2; Nimkin Decl. ¶ 4; Hickey Decl. ¶¶ 6; Urbaszewski Decl. ¶¶ 2-3. Petitioners' members live, breathe and recreate outdoors in parts of the country that EPA failed to designate nonattainment for the 2015 ozone NAAQS, or parts of the country neighboring those areas. *See, e.g.*, Bewitz Decl. ¶¶ 8 and 12; Hickey Decl. ¶¶ 15-18; Munski Decl. ¶¶ 7, 8-10; Read Decl. ¶¶ 1-2; Reading Decl. ¶¶ 2-3; Villegas Decl. ¶¶ 2-3. Petitioners have associational standing on behalf of their members who have been, and will continue to be, injured by EPA's action.

Petitioners' members also have standing to sue in their own right, as they already suffer serious health problems as a direct result of high levels of ozone, including asthma attacks and other respiratory illnesses. *See, e.g.*, Montgomery Decl. ¶¶ 8-9; Silber Decl. ¶¶ 4-6; Schindler Decl. ¶ 4; Villegas Decl. ¶¶ 4-5. Such conditions create large medical expenses for members. *See, e.g.*, Silber Decl. ¶¶ 6, 14. In the absence of measures taken to reduce ozone levels, Petitioners' members will continue to be exposed to unhealthy levels of ozone, simply by breathing the outdoor air where they live and recreate, and face several types of harm from continued exposure to high levels of ozone. High ozone levels cause members to miss work, *see, e.g.*, Reading Decl. ¶ 6; Jones Decl. ¶ 21, and curtail outdoor

activities. *See, e.g.,* Cushing Decl. ¶ 7; Yankey Decl. ¶ 7; Allison Decl. ¶ 9; Munski Decl. ¶ 11; Villegas Decl. ¶ 4. Members experience diminished enjoyment of the national parks and outdoor areas in which they recreate and will continue to recreate, *see, e.g.*, Mazel Decl. ¶ 10; Peterson Decl. ¶ 9; Allison Decl. ¶ 9; Munski Decl. ¶ 12, including observing damage to the native ecosystems there. *See, e.g.*, Peterson Decl. ¶ 12; Nimkin Decl. ¶ 7.

These injuries are concrete, actual or imminent, and fairly traceable to EPA's actions. EPA's failure to make nonattainment designations means these areas will not be required to implement more significant emission reduction measures designed to achieve the ozone NAAQS. *See* 42 U.S.C. §§ 7502(c), 7511. A favorable decision from this Court would redress Petitioners' injuries by vacating the disputed attainment designations and remanding them to EPA to designate those areas nonattainment, thereby requiring "more stringent" control measures and deadlines. *Miss. Comm'n,* 790 F.3d at 146.

B. State and Local Government Petitioners.

Petitioners State of Illinois and City of Chicago have standing to seek review of EPA's ozone designations concerning counties within Illinois, northwest Indiana, and southeast Wisconsin. Illinois and Chicago have an interest in protecting their residents and environment from the harmful effects of ozone. *See*, *e.g.*, *Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 237-39 (1907). The Rule

will allow sources in and around Illinois to avoid reducing pollution, which will cause Illinois and Chicago residents to suffer from unnecessarily prolonged periods of unhealthy air. Illinois and Chicago residents will be adversely impacted by ozone and ozone precursors emitted in areas that EPA improperly designated attainment. Zemba Decl. ¶¶ 10-25; AR-0015 at 61-62, 64, 69, JA0255-0256, JA0258, JA0263; AR-0418 at 21, JA1289. These injuries are directly traceable to EPA's failure to make nonattainment designations for the disputed areas, and would be redressed by an order vacating the designations. Accordingly, Illinois and Chicago have standing. *See Massachusetts. v. EPA*, 549 U.S. 497, 520 (2007) (stating that states are "entitled to special solicitude in … standing analysis").

Local governments also have standing to challenge federal action that threatens environmental harm within a city. *See*, *e.g.*, *City of Rochester v. U.S. Postal Serv.*, 541 F.2d 967, 972 (2d Cir. 1976). The City of Sunland Park and Boulder County will suffer concrete injuries as a result of EPA's failure to adequately protect the City's residents against ozone pollution. Brown Decl. ¶¶ 3-6, Jones Decl. ¶¶ 3, 21. These injuries can be addressed by a favorable ruling.

ARGUMENT

The 2015 ozone NAAQS designations challenged here are case studies in arbitrary, capricious, and unlawful EPA decisionmaking. Having failed to delay issuing nonattainment designations, the Administrator engaged in a transparent

effort to limit the extent of ozone nonattainment areas, in direct contravention of the purposes of the Act, including to the detriment of public health. The facts describe an Agency that unreasonably and unlawfully ignored its own record, reversed itself without new evidence or explanation, relied on theories that the record does not support, failed to consider important aspects of the problem before it, and ignored (and even in some cases *moved*) geographic features in an effort to twist the meaning of pollution contribution from one area to the next. Each of the challenged designations is so divorced from rational decisionmaking that it must be vacated and remanded with instructions consistent with this Court's opinion.

A. EPA's Chicago-Area McHenry, Lake and Porter County Designations Were Arbitrary, Capricious, and an Abuse of Discretion.

1. McHenry County, Illinois.

EPA's designation of McHenry County violates the Act in three independent ways. First, the process that EPA followed was not "logical and rational." *U.S. Sugar,* 830 F.3d at 652. Having studied the issues for a year, Illinois EPA issued an 83-page report concluding that McHenry County contributed to ozone violations in neighboring counties and proposed a nonattainment designation. AR-0015, JA0193-1277. EPA took another year to conduct its own analysis, resulting in a 25-page EPA report that contained additional analysis and adopted Illinois

EPA's recommendation in full. AR-0078, JA0550-0574. No State or commenter contested EPA's intended designation of McHenry County.

Less than one week before a court-ordered deadline to issue final designations, however, then-Administrator Pruitt convened a "5 min[ute]" call with Illinois EPA. Exh. 2 at 1, JA1452. That call resulted in the one-page Messina Letter the following day. *See* Exh. 1, JA1443 & AR-0406, JA1371. Just a few days later, EPA relied exclusively on the Messina Letter to reverse years of exhaustive work by both Illinois EPA and EPA's technical experts. AR-0418, JA1269-1293; AR-0416, JA1160-1186. This process defies logic, and far exceeds the limits of rational decisionmaking.

Second, EPA's failure to include McHenry County in the Chicago nonattainment area is unsupported by any articulated "rational explanation of the facts found and the choice made." *Air Alliance Houston v. EPA*, 906 F.3d 1049, 1066 (D.C. Cir. 2018). In *Catawba*, this Court held that EPA violated the Clean Air Act and the Administrative Procedure Act by designating a New York county as being in nonattainment with NAAQS. The Court explained that "EPA's rationale … changed between the initial designation and the final designation, with no apparent change in data." 571 F.3d at 51. This unexplained inconsistency made EPA's decision "suspect." *Id.* at 52.

EPA's final McHenry County designation is even more "suspect" than that rejected in *Catawba*, because here EPA *reversed* its initial designation without adequate explanation. Indeed, EPA offered no new data whatsoever to support its last-minute switch. To the contrary, EPA's intended and final designations of McHenry County cited exactly the same information on factors such as emissions, population, and traffic. AR-0078 at 10, 14, 17, JA0559, JA0563, JA0566; AR-0418 at 11, 14, 17, JA1279, JA1282, JA1285. And EPA's final designation did not retreat from EPA's position that McHenry County emissions were "capable of transporting to the … violating monitors on the days that the monitored ozone values exceed the standard." AR-0078 at 23, JA0572. In fact, far from offering new data supporting reversal, EPA's final designations showed that the number of violating monitors in Cook County had *increased* since EPA's intended designations—making it all the more important to decrease contributions from neighboring counties like McHenry. *Compare id.* at 7-8, JA0556-0557 *with* AR-0418 at 7, JA1275.

EPA offered only the Messina Letter in attempting to explain its U-turn, citing the Letter to suggest that EPA was deferring to Illinois EPA's wishes. But the communications surrounding the Messina Letter make clear that Illinois EPA wrote it at EPA's direction. EPA cannot defer to itself. In any case, the Messina Letter did not recommend an attainment designation for McHenry County. Rather,

the Messina Letter suggested only that it would "seem appropriate" to "consider" an attainment designation. AR-0406, JA1371.

Moreover, the sole basis that the Messina Letter offered for its suggestion was to "ensure[] national and regional consistency by considering the 2014 emissions data." *Id.* The Letter offered no evidence of any inconsistency, however, and EPA did not rely on the 2014 data in designating McHenry County attainment. An asserted interest in consistency could not justify EPA's reversal in any event, as the 2014 emissions data did not change between the time when Illinois EPA issued its recommendations in 2016 and when EPA promulgated its final designations in 2018.

Accordingly, EPA violated the Administrative Procedure Act in abandoning the nonattainment designation given to McHenry County under the 1997 and 2008 ozone rules, which were consistent as well with Illinois EPA's recommended and EPA's intended designation under the 2015 rule. *See Miss. Comm'n*, 790 F.3d at 152 (considering whether "EPA's construction is consistent with the approach the agency has taken in prior designations proceedings").

Third, EPA's designation is "not in accordance with law." 5 U.S.C. § 706(2)(A). The Clean Air Act provides that if EPA "intends to make a modification" to a State's recommended designation, then EPA "*shall* notify the State and provide such State with an opportunity to demonstrate why any proposed

modification is inappropriate … no later than 120 days before the date [EPA] promulgates the designation." 42 U.S.C. § 7407(d)(1)(B)(ii) (emphasis added). "Congress' use of the word 'shall' demonstrates that" section 7407(d)(1)(B)(ii) "mandates" 120 days' notice, particularly because section 7407(d)(1)(B)(ii) elsewhere uses the discretionary term "may." *Kingdomware Techs., Inc. v. United States*, 136 S. Ct. 1969, 1977 (2016).

Here, EPA notified Illinois EPA about proposed modifications to Illinois EPA's McHenry County designation no earlier than a phone call on April 26, 2018. By promulgating the final designation just four days later, EPA violated the Act's 120-day notice requirement. To be sure, a State may on its "own motion … submit[] a list of areas … in the State designated as nonattainment, attainment, or unclassifiable." 42 U.S.C. § 7407(d)(1)(B)(iii). Even if a letter solicited by EPA could be considered sent on the State's "own motion," it did not designate any area—as attainment or otherwise. Rather, the Messina Letter said only that it "would seem appropriate" to "consider" designating McHenry County attainment. AR-0406, JA1371. That is far different language than Illinois EPA used in its 2017 recommendation "that McHenry … [C]ount[y] be included in the Chicago nonattainment area." AR-0015 at 50, JA0244. EPA therefore acted contrary to law.

2. Lake and Porter Counties, Indiana.

The record for EPA's final designations of Lake and Porter Counties comes nowhere close to qualifying for the "extreme degree of deference" afforded when the Agency "articulate[s] … a rational connection between the facts found and the choice made," and "show[s] that it treated *similar counties* similarly." *Miss. Comm'n,* 790 F.3d at 171-72 (internal quotes omitted). When applying a non-numerical "all-things-considered" standard to determine whether counties "contribute" to air pollution in other areas, EPA acts arbitrarily and capriciously if it "applie[s] its [multi]-factor test inconsistently, resulting in similar counties being treated dissimilarly" or "applie[s] it so erroneously in a particular case that it could not have reasonably concluded that a county was [or was not] contributing to nearby violations." *Catawba,* 571 F.3d at 39-40. EPA did both in designating Lake and Porter Counties. Despite a record showing that all five factors pointed toward a nonattainment designation for both counties, as EPA initially proposed, the Agency's final attainment designation offered no basis for distinguishing Porter or Lake Counties from other counties with similar meteorology, emissions, population, and vehicle miles that were included in the Chicago nonattainment area.

EPA's attainment designation ignores record data showing that Porter and Lake Counties contribute to nonattainment. EPA's description of the wind

trajectory analysis in the *Factor 4: Geography/topography* section of the final technical support document establishes that both counties "contribute" to violations:

> [Modeled] back trajectories illustrate [the lake] effect,[8] and show in particular how ozone and precursor emissions from the Indiana portion of the [Combined Statistical Area] can follow a low-altitude path across Lake Michigan and along the Lake Michigan shoreline to *contribute* to exceedances at the three violating monitors in Cook County, the two additional violating monitors along the Lake Michigan shoreline on either side of the Illinois-Wisconsin border, and the sixth violating monitor located further northwest into Kenosha County in Wisconsin.

AR-0418 at 21, JA1289 (emphasis added). In *Factor 3: Meteorology*, EPA noted that its model showed "[m]oderately dense trajectories" over Lake and Porter counties. *Id.* at 25, JA1293. EPA intended to designate Porter and Lake Counties nonattainment because of this meteorological analysis demonstrating contribution to nonattainment, and because—among counties without violating monitors—they ranked among the six highest on several emissions-related metrics. AR-0078 at 23, JA0572. EPA's final attainment designation failed to explain how, when the only change for these counties between the proposed and final technical support document was the addition of 2015–2017 design values, a conclusion contrary to

[8] The "lake effect" is "the offshore flow of polluted air from the Chicago area to locations over the lake at night and the subsequent onshore flow of polluted air from over Lake Michigan back onto land locations in afternoon hours due to temperature differences between the lake surface and the onshore surface." AR-0418 at 21, JA1289.

the Agency's analysis of Guidance factors one through four was justified. *Compare* AR-0418 at 7, Table 2a, JA1275 *with* AR-0078 at 7-8, Table 2, JA0556-0557.

EPA's failure to provide an explicit rationale for excluding Porter and most of Lake County dooms this designation because an agency must articulate a "rational connection between the facts found and the choice made," such that "its path may reasonably be discerned." *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) (internal quotation marks omitted).

EPA's final decision and technical support document also lacked any rationale for treating Lake and Porter differently from counties in Illinois with similar characteristics under factors 2, 3, and 4. Without articulating a basis for this different treatment, EPA failed to create a "path [that] may reasonably be discerned." *Id.* This Court should not defer to EPA's judgment where the court "cannot discern the 'reasonable connection to the facts in the record' necessary to defer to EPA's decision …[,] where EPA was operating against the backdrop of its own prior reasoned judgment [that contradicted the decision], and where its conclusion appears to be counter to the only empirical evidence EPA had before it." *Sierra Club v. EPA*, 884 F.3d 1185, 1198 (D.C. Cir. 2018) (quoting *U.S. Sugar*, 830 F.3d at 629).

EPA's unexplained change on Porter and Lake Counties is like that struck down by this court in *Catawba*, 571 F.3d at 51-52. There, as here, EPA's "rationale … changed between the initial designation and the final designation, with no apparent change in data." *Id.* at 51. Indiana argued that Lake and Porter Counties contributed a smaller percentage of the Combined Statistical Area's pollution than Cook and other Illinois counties, either individually or cumulatively. AR-0016 Encl. 3 at 13-15, JA0279-0281. We don't know that EPA was influenced by this argument, because it provided no explanation, but Indiana's arguments are contrary to EPA's own analysis contained in its intended designation. *See* AR-0078, JA0550-0574. EPA's intended technical support document discussed Porter and Lake Counties' relatively high emissions and other contribution-related metrics, while the final document instead emphasized how much larger Cook County is than others in the Combined Statistical Area. *Compare* AR-0078 at 23, JA0572 *with* AR-0418 at 25, JA1293. EPA noted that the fifteen Illinois counties together are responsible for a much higher percentage of the Combined Statistical Area's emissions than the five Indiana counties. AR-0418 at 24, JA1292. But as this Court ruled in a prior case about designation of Lake and Porter Counties, "a 'contributing' county need not be the but-for cause of a violation in order to warrant a nonattainment designation." *Miss. Comm'n,* 790 F.3d at 163. EPA has never stated the Counties' contributions were so small as to

be *de minimis* or legally irrelevant. *See Catawba*, 571 F.3d at 39. Because EPA's meteorological modeling and emissions-related data showed that Porter and Lake "contribute" to pollution at the violating monitors, and EPA failed to provide any evidence to the contrary, both counties must be designated as nonattainment.

EPA's final designation decision was arbitrary because the data before the Agency showed both Porter and Lake contributed to violations, yet were treated differently from counties with similar statistics. Of the sixteen counties in the Combined Statistical Area *without* violating monitors, Lake and Porter were among the six with the highest VOC emissions, populations, and vehicle miles, and among the five with highest NOx emissions. AR-0078 at 23, JA0572. Of *all* the counties in the Combined Statistical Area—including those with violating monitors—Porter has the sixth-highest NOx emissions and eighth-highest VOC emissions, while Lake ranks second in NOx and third in VOC. AR-0418 at 11, JA1279. By comparison, Kane County, IL, which ranked seventh for NOx emissions and sixth for VOC, was designated nonattainment in its entirety. *Id*. Portions of Grundy and Kendall Counties (neither of which contains a monitor) were designated nonattainment on the basis of their contributions to monitored violations, despite having emissions much lower than Porter County's, and appearing similar on nearly every *Factor 2* metric, as shown in the following table. EPA described the modeled analysis as showing "[m]oderately dense trajectories"

over Kendall, Grundy, Kane, Lake, and Porter Counties, and did not note any differences in geography or topography among the counties, merely noting that the entire region experiences the "lake effect." *Id*. at 25, 21, JA1293, JA1289.

Table 1. Emissions, Population, and Vehicle Miles Traveled for Lake, Porter, Kane, Kendall, and Grundy Counties.

Metric[9]	**Lake, IN (partial)**	**Kane, IL (in-cluded)**	**Porter, IN (ex-cluded)**	**Kendall, IL (partial)**	**Grundy, IL (partial)**
NOx emissions (tons per year)	28,923	11,335	16,649	3,025	3,582
VOC emissions (tons per year)	15,309	10,533	6,090	3,251	2,120
2015 Population	487,865	530,847	167,688	123,355 (nonattainment area: 50,870)	50,541 (nonattainment area: 14,735)
2015 Population Density (per sq. mi.)	978	1,021	401	385	121
Population Percent Change 2010–2015	-2%	3%	2%	8%	1%
2014 million vehicle miles traveled	5,784	3,825	2,120	777	711
Number of Residents Commuting to or w/in counties with violating monitors	41,770	74,361	5,027	16,638	5,508

[9] Statistics taken from AR-0418 at 11-12 (Table 3), JA1279-1280; 13-14 (Table 4), JA1281-1282; 17-18 (Table 5), JA1285-1286. Unless otherwise noted, statistics are for the entire county, not just the portion designated nonattainment.

On nearly every metric, Porter appears similar to Grundy and Kendall, and Lake similar to Kane. Indeed, EPA noted that "Lake County in Indiana is similar in terms of total population and population density [to Kane]" and Porter and Kendall counties have "moderately high population densities" and similar populations. AR-0418 at 24-25, JA1292-1293. EPA never pointed to any factor that would lead to treating these counties differently. This Court has held that "[s]uch inconsistent treatment is the hallmark of arbitrary agency action." *Catawba,* 571 F.3d at 51. EPA is not required to set a numerical threshold for each factor which separates the attainment counties from the nonattainment counties, *id.* at 39, but EPA's failure to articulate *any* permissible factor or combination of factors it relied upon to justify different treatment renders this inconsistency arbitrary and capricious. In *Catawba*, this Court stated that the fact that EPA changed its characterization of Rockland County's commuter numbers from "low" to "significant" when the change was "not justified by any change in the underlying data, … render[ed] suspect EPA's reliance on commuters as the sole basis for distinguishing Rockland from the other two counties," then remanded because of the inadequately-justified inconsistency. *Id.* at 52. Similarly, EPA's change in designation for Lake and Porter counties was "not justified by any

change in the underlying data" and resulted in completely unexplained inconsistent treatment of counties with similar meteorology, geography, and emissions data.

Because EPA did not "articulate … a rational connection between the facts found and the choice made," or "show that it treated *similar counties* similarly," *Miss. Comm'n*, 790 F.3d at 171, the attainment designations of Porter and most of Lake Counties should be vacated.

B. EPA's Wisconsin 2015 Ozone NAAQS Designations Were Arbitrary, Capricious, and an Abuse of Discretion.

EPA's final decision modifying *all* of EPA's intended 2015 ozone NAAQS nonattainment designations for Wisconsin was arbitrary and capricious, as it was "counter to the evidence before the agency," *State Farm*, 463 U.S. at 43. EPA *itself* compiled and analyzed that evidence, showing that each of the nine Wisconsin full or partial counties designated attainment "ha[d] an air quality monitor that … violat[ed] the standard or … sources of emissions that … contribut[ed] to a violation of the NAAQS in a nearby area." AR-0116 at 2, JA-0611. The same thorough analysis of record evidence, performed in accordance with the five-factor-based Designations Guidance (AR-0061 at 6 & A3, JA0512, JA0519-0532), appeared in the technical support documents issued with EPA's intended *and final* designations for Wisconsin—and supported the intended but not the final designations. AR-0078, JA0550-0574; AR-0116, JA0610-0691; AR-0418, JA1269-1293; AR-0419, JA1294-1366.

Rather than relying on its own analysis, EPA dramatically reduced the extent of its intended ozone nonattainment areas for Wisconsin. EPA relied on additional information, including modeling submitted by Wisconsin, which the accompanying final technical support document and Response to Comments expressly stated EPA could not fully evaluate. AR-0078 at 23-24, JA0572-0573; *see also* AR-0417 at 24, JA1210. Such unsupported decisionmaking is an abuse of discretion that falls far short of the Agency's requirement to "articulate … a rational connection between the facts found and the choice made." *Miss. Comm'n,* 790 F.3d at 171. Here, as in *Catawba,* 571 F.3d at 51, "EPA's rationale ... changed between the initial designation and final designation, with no apparent change in data." Consequently, all of EPA's arbitrary and capricious final attainment/unclassifiable designations for these nine Wisconsin counties or portions of counties should be vacated and remanded with instructions to finalize nonattainment designations consistent with this Court's opinion.

1. Milwaukee Combined Statistical Area.

EPA's intended nonattainment designation for the Milwaukee Combined Statistical Area included all of the following five counties: Milwaukee, Ozaukee, Racine, Washington and Waukesha. AR-0116 at 3, JA0612. EPA provided comprehensive data and a thorough five-factor analysis to support its intended nonattainment designations for these counties in both the intended technical

support document *and in the technical support document issued with EPA's final designation*. *Id*. at 8-20, JA0617-0629; AR-0419 at 14-25, JA1307-1318. But EPA arbitrarily finalized designations that were not consistent with the Agency's own analysis—resulting in final *attainment/unclassifiable* designations for Racine, Washington and Waukesha Counties and for all but a narrow area along the Lake Michigan shoreline in Ozaukee County and the northern corner of Milwaukee County.

EPA's intended *and* final technical support documents state that Milwaukee County had one and Ozaukee County had two air quality monitors showing violations of the 2015 ozone NAAQS. AR-0116 at 10 (Table 2), JA0169; AR-0419 at 15 (Table 2), JA1308. Both technical support documents included National Emissions Inventory data that showed stationary and mobile sources in Milwaukee County contributed approximately 40 percent of total NOx and 35 percent of total VOC emissions in the Combined Statistical Area; and that Ozaukee County contributes approximately 6 percent of total NOx and 4 percent of total VOC emissions in the Combined Statistical Area. AR-0116 at 12, JA0621; AR-0419 at 17, JA1310. Both technical support documents also showed that three nearby counties contribute ozone precursor emissions: Waukesha County contributed approximately 20 percent of total NOx and VOC emissions in the Combined Statistical Area; Racine County contributed about 7 percent of total

NOx and 9 percent of total VOC emissions in the Combined Statistical Area; and Washington County contributed about 7 percent of total NOx and VOC emissions in the Combined Statistical Area. AR-0116 at 13, JA0622; AR-0419 at 18, JA0311. And, both technical support documents acknowledge that Racine County had an air quality monitor that recorded a nonattainment episode in 2016. AR-0116 at 10, Table 2, JA0619; AR-0419 at 15, Table 2, JA1308.

Wisconsin responded to EPA's intended designations by re-submitting a "source apportionment analysis" purporting to show that only 5-15 percent of ozone at violating monitors came from Wisconsin sources. AR-0051 at 34-39, JA0450-0454; AR-0300 at 12-14, JA0901-0903; A10-A11, JA0933-0934. But EPA made clear that it could not rely on Wisconsin's analysis because:

> W[isconsin] did not include in its April 2017 [technical support document], nor in its February 2018 comment letter/[technical support document], a detailed, transparent description of the source apportionment modeling. A complete and thorough description of any modeling analysis including details regarding the modeling platform, emissions inventory, model options, post-processing methodology, and model performance evaluation would be necessary to fully and objectively assess the modeling analysis.

AR-0417 at 26, JA1212.

Wisconsin also re-submitted another model in an attempt to show that a hypothetical 10 percent reduction in emissions in southeastern Wisconsin counties would not significantly reduce design values at ozone monitors. AR-0051 at 40-41, JA0455-0456; AR-0300 at 15-16, JA0904-0905. EPA rejected those modeling

results, stating that the "10% emissions cut model" is a type of sensitivity analysis–not a contribution analysis that can "be used to infer the overall impact that results from total emissions from the sources in question." AR-0417 at 27, JA1213. In addition, EPA's final technical support document pointed out that Wisconsin failed to include on-road sources of ozone precursors in the model:

> EPA notes that the base case inventories in the [Wisconsin technical support document] appendix A show that approximately 40% of NOx emissions and 25% of VOC emissions in the 10-county area are from on road sources, which are not included in the 10% reduction scenario.

AR-0419 at 26 n.25, JA1319.

EPA similarly declined to rely on other new information submitted by Wisconsin relating to population density, vehicle miles traveled, and the impact of local emissions sources—purporting to show that reductions in Milwaukee-area ozone precursor emissions do not meaningfully improve ozone concentrations in the area. *See id*. at 26, JA1319. EPA said Wisconsin had not provided any information on meteorology-adjusted trends for the relatively short time period (2008-2014) discussed in the Wisconsin submission or changes in contributing sources outside the Milwaukee area over this time period. *Id.* at n.25; AR-0417 at 29, JA1215. Rather, the technical support documents issued with EPA's intended *and final* designations described the five counties as having significantly higher

population densities than other counties in the Combined Statistical Area and showed that more than 20 percent of the population in Racine, Waukesha and Washington Counties commuted to Milwaukee or Ozaukee Counties, which have violating monitors. AR-0116 at 14-17, JA0623-0626; AR-0419 at 19-22, JA1312-1315.

EPA also evaluated modeled analyses showing that:

> … on exceedance days, air parcels traveled to the violating monitors from the south, west-southwest, southwest, and southeast. To the southeast of the violating monitors, is Lake Michigan. Directly south of the counties with the violating monitors, is Racine County. … To the west-southwest of the counties with the violating monitors are Washington County, [and] Waukesha County ….

AR-0116 at 18-19, JA0627-0628. EPA's own data analysis displayed in Figure 1 below, which appears in both EPA's intended and final designation technical support documents, undermines Wisconsin's assertion that violations at the monitors in Milwaukee and Ozaukee County are "almost exclusively" due to ozone-rich air parcels transported from northeastern Illinois and northwestern Indiana over Lake Michigan–rather than emissions from stationary and mobile sources located in the Milwaukee Combined Statistical Area. AR-0116 at 18, JA0627; AR-0419 at 23, JA1316.

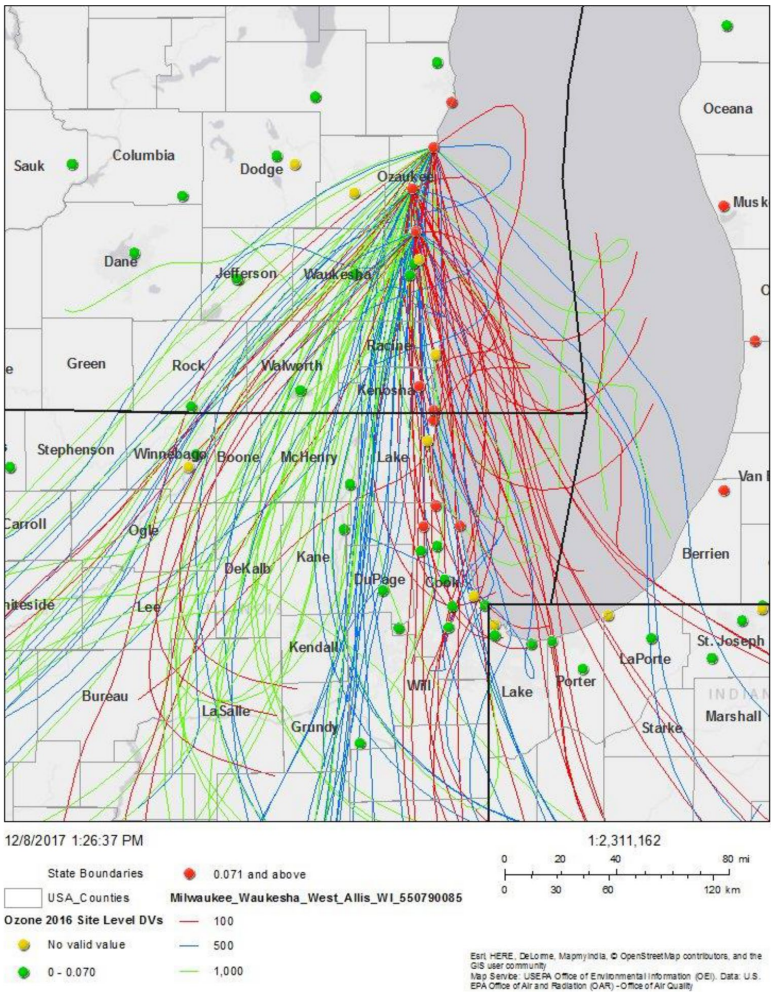

Figure 1. Source: AR-0419 at 23, JA1316. EPA Modeled Back Trajectories for Violating Monitors.

EPA's Response to Comments further expressly refuted Wisconsin's argument, *see* AR-0300 at 10-11, A8-A9, JA0899-0900, JA0931-0932, that only 100-meter air mass trajectories in its models are relevant to determine the source of ozone precursor emissions in lakeshore areas:

> … [modeled] back trajectories at starting heights 100, 500, and 1000 meters above ground level represent levels typically within the atmosphere's mixed layer at the monitor … [t]rajectories at these three starting heights are relevant in assessing transport of air parcels for potential contribution to ozone concentrations at the trajectory

> starting point. With respect to the comments regarding the lower level (100 m) trajectories, it is important to note that the lower level (100 m) trajectories do not exclusively occur over the lake.

AR-0417 at 28, JA1214.

This is consistent with the extensive record showing that stationary and mobile sources throughout Milwaukee, Ozaukee, Racine, Waukesha and Washington Counties caused and/or contributed to ozone NAAQS violations in Milwaukee and Ozaukee Counties. AR-0116 at 8-17, JA0617-0626; AR-0419 at 14-22, JA1307-1315.

Finally, and significantly, EPA used the novel "distance-from-the-shoreline" approach proposed by Wisconsin to delineate final nonattainment area boundaries in the Milwaukee Combined Statistical Area. AR-0419 at 26, JA1319. Although even Wisconsin conceded that the "distance-from-the-shoreline" approach "has not historically been used in this region," AR-0300 at 21, JA0910, Wisconsin nevertheless demanded that EPA nonattainment designations in the Milwaukee Combined Statistical Area be limited to a 4.9-mile-wide strip along all of Racine's Lake Michigan shoreline and a 2.9-mile-wide strip along Ozaukee County's Lake Michigan shoreline, extending into the northeastern corner of Milwaukee County near the violating Bayside monitor. *Id.* at 25-27, JA0914-0916. Wisconsin's proposed nonattainment boundaries for the Milwaukee Combined Statistical

Area—and the sharp contrast with EPA's intended nonattainment boundaries—are shown in Figure 2 below:

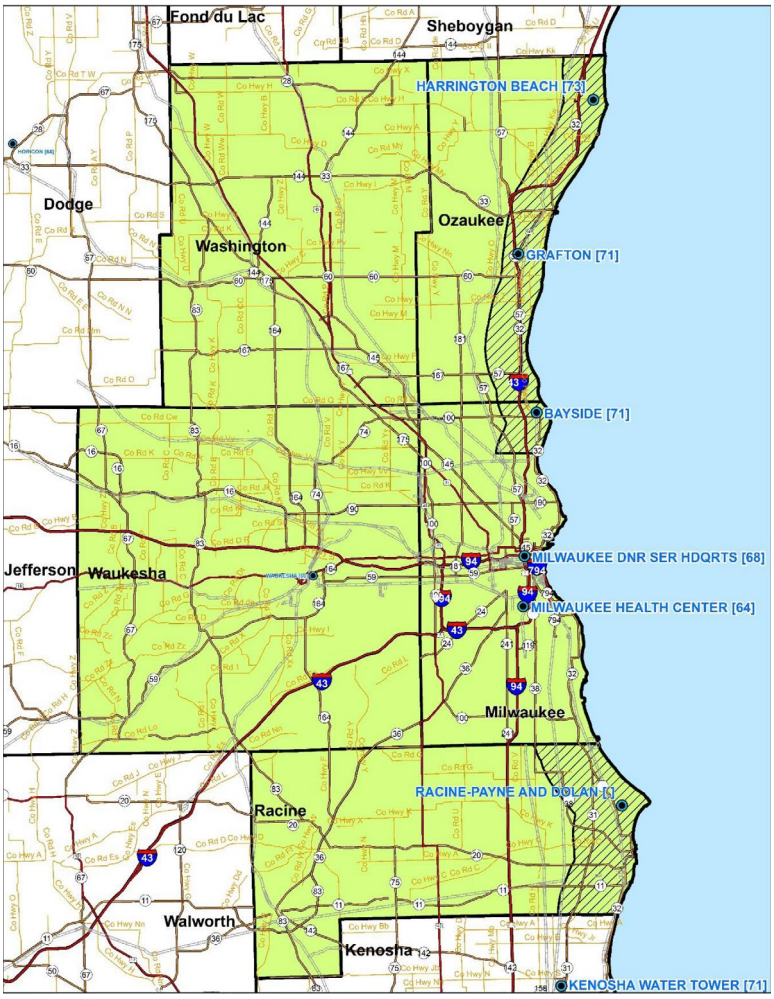

Figure 2. Source: AR-0300 at 26, JA0915. EPA intended nonattainment area (green) and Wisconsin's "distance-from-the-shoreline" approach (hatched).

Despite extensive record evidence showing that sources in all five counties contribute to violations in the Milwaukee Combined Statistical Area and its own rejection of Wisconsin's modeling, EPA abruptly changed course, "finalizing a nonattainment area for the Milwaukee area with boundaries consistent with those provided by the state in the February 2018 submission." AR-0419 at 26, JA0915.

This inexplicably resulted in a final designation that included the nonattainment boundaries that Wisconsin recommended for Milwaukee and Ozaukee Counties, but arbitrarily omitted the nonattainment area in Racine County that was included in Wisconsin's February 2018 submission. AR-0419 at 27, JA1320. EPA did not explain why its map of the final Milwaukee nonattainment areas in EPA's final technical support document did not include the Racine County nonattainment area recommended by Wisconsin:

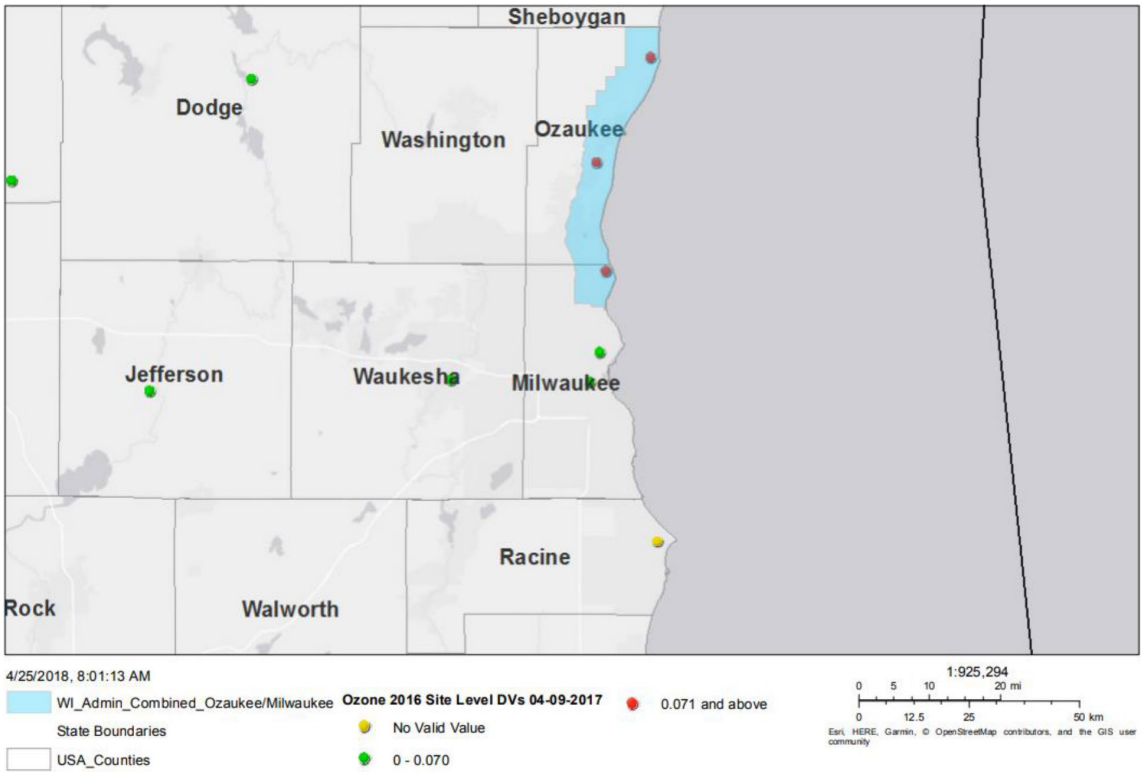

Figure 3. Source: AR-0419 at 27, JA1320.

In addition to this unexplained inconsistency, EPA's final designation for the Milwaukee Combined Statistical Area expressly relied on Wisconsin's untested "distance-from-the shoreline" approach. AR-0419 at 26, JA1319. EPA also relied

on Wisconsin's unsupported contention that only 100-meter trajectories "are relevant in lakeshore areas for assessing the potential impact of regional air movements on monitored ozone concentrations," and that:

> [t]he 100 m trajectories show that, on exceedance days, air parcels traveled almost exclusively from the south with most passing over Lake Michigan and originating in upwind areas over the lake and along the southern shore of Lake Michigan.

AR-0419 at 23-24, JA1316-1317. EPA failed to provide any reasoned basis for its decision. Indeed, EPA's intended and final technical support documents and responses to comments state clearly that the Agency did not have sufficient information to corroborate or analyze the Wisconsin approaches. AR-0417 at 26-27, JA1319-1320; AR-0419 at 25 n.23, 26 n.25, JA1318, JA1319.

EPA's failure to explain such a radical departure from its intended designation for the Milwaukee Combined Statistical Area was arbitrary and capricious on its face. The final designation for the Milwaukee Combined Statistical Area was not justified by the facts before the Agency–and is inconsistent with EPA's own analyses in the intended *and final* technical support documents that it issued, as well as EPA's responses to comments. In short, EPA failed to provide any rationale for this decision.

2. Kenosha, Manitowoc, and Sheboygan Counties.

EPA's final ozone nonattainment designation boundaries for Kenosha, Manitowoc, and Sheboygan Counties were as flawed and arbitrary as the Agency's final boundaries for the five counties in the Milwaukee Combined Statistical Area, described *supra*. They were based almost exclusively on Wisconsin's "distance-from-the-shoreline-approach," and "source apportionment modeling" which EPA acknowledges the Agency could not fully assess. EPA's final designations also conflict with the five-factor analysis in the record, including EPA's own analysis of National Emissions Inventory data for stationary and mobile sources in each of these counties. AR-0078 at 10-13, JA0559-0562; AR-0116 at 27-28, 50-51, JA0636-0637, JA0659-0660.

Kenosha County. EPA's final designation ignored its own record describing the extent to which Kenosha County contributed to nonattainment in the Chicago-Naperville, IL-IN-WI Combined Statistical Area. AR-0078 at 10-19, JA0559-0568; AR-0418 at 11-18, JA1279-1286. That record shows that there were two violating monitors in Kenosha County, AR-0078 at 8, JA0557; AR-0418 at 9, JA1276, and that sources in the County emitted over 6,000 tons of NOx per year and about 3,300 tons of VOCs per year. AR-0078 at 10, JA0559; AR-0418 at 11, JA1279. EPA also determined that over 1.3 billion vehicle miles were traveled on Kenosha County roads each year and that over 50,000 Kenosha County

residents (about 62 percent of the total county population) commute to or within counties with violating monitors. AR-0078 at 17-18, JA0566-0567; AR-0418 at 16-18, JA1284-1286. The technical support documents issued with EPA's intended *and final* designations noted that:

> The Chicago, IL-IN-WI area has previously established nonattainment boundaries associated with the 1997 and 2008 ozone NAAQS. … For purposes of the 2008 ozone NAAQS, the partial county in Wisconsin is defined as the portion of Kenosha County bounded by the Lake Michigan shoreline on the East, the Kenosha County boundary on the North, the Kenosha County boundary on the South, and the I-94 corridor (including the entire corridor) on the West.

AR-0078 at 22-23, JA0571-0572; AR-0418 at 22-23, JA1290-1291.

EPA's intended designation for the 2015 ozone NAAQS followed boundaries identical to those EPA had established in Kenosha County for the 2008 standard. AR-0078 at 23, JA0572. The technical support documents issued with the intended designation noted that 77 percent of Kenosha County residents live in the intended nonattainment area surrounding the violating monitors and concluded that:

> transport winds blew predominantly from the west, southwest, south, and southeast during times when the monitors measured exceedances of the 2015 ozone NAAQS; there were far fewer trajectories crossing the western portion of Kenosha County compared to the rest of the area of analysis. Therefore, EPA does not intend to include the remaining areas of Kenosha County in the Chicago, IL-IN-WI nonattainment area for the 2015 ozone NAAQS.

Id.

EPA's final designation changed the western third of EPA's intended

nonattainment area to attainment/unclassifiable, based on Wisconsin's "distance-from-the-shoreline" approach. AR-0418 at 24, JA1292. That choice was demonstrably arbitrary and capricious, not only because the "distance-from-the-shoreline" method was untested, but because the western third of EPA's intended nonattainment area is in the part of Kenosha County where the rapidly developing Interstate 94 corridor is located and where National Emissions Inventory data showed the highest level of local emissions from vehicle miles traveled in Kenosha County. AR-0300 at A7, JA0930; AR-0418 at 17-18, JA1285-1286. Figure 4 shows the difference between EPA's intended nonattainment designation and Wisconsin's recommended nonattainment boundaries, based on the "distance-from-the-shoreline" approach:

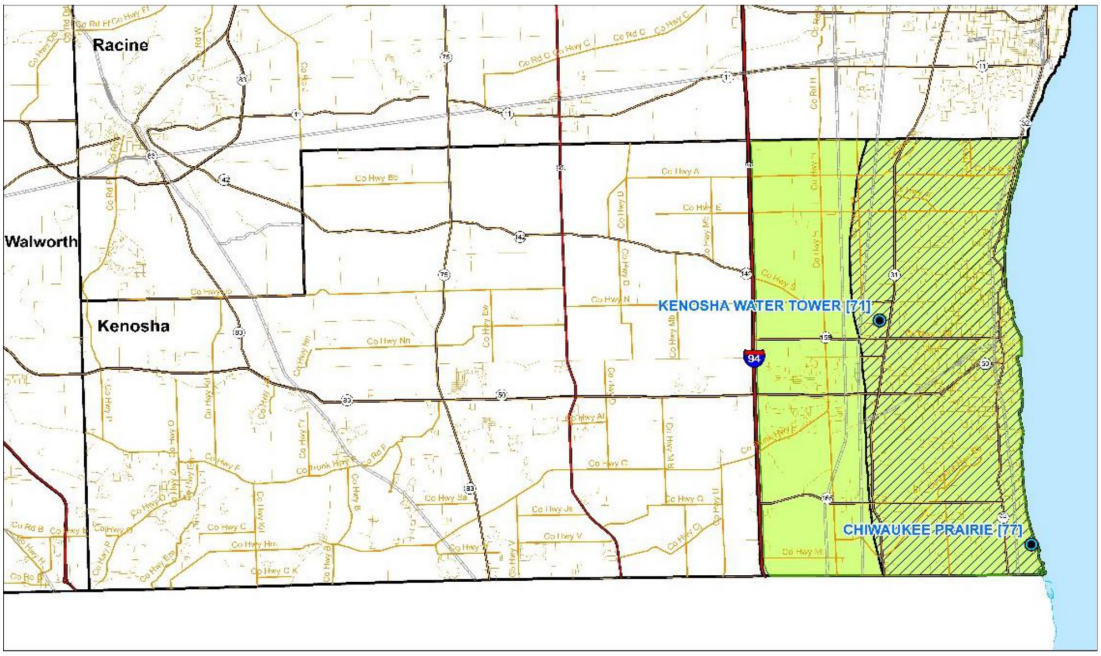

Figure 4. Source: AR-0300 at 24 Fig. 10, JA0911. EPA intended nonattainment area (green) and Wisconsin's "distance-from-the-shoreline" approach (hatched).

EPA's final designation for Kenosha County failed to offer any record-based support for adopting the newly proposed "distance-from-the-shoreline" method. AR-0418 at 23-24, JA1291-1292. EPA ignored its own record in favor of Wisconsin's assurance, untested by EPA, that the "narrower boundary includes all of the area that is violating the 2015 ozone NAAQS and that the portions outside this part of the county are not contributing to violations within the Chicago nonattainment area." *Id.* at 24, JA1291. That is clearly contradicted by EPA's own analysis of National Emissions Inventory data—which appears in both EPA's intended *and* final technical support documents. AR-0078 at 10-19, JA0559-0568; AR-0418 at 11-18, JA1279-1286.

EPA also made the following internally-contradictory claim in the technical support document issued with the final designation:

> Although EPA is not modifying the State's recommendation to designate a smaller portion of Kenosha County as nonattainment, EPA is modifying the State's request on how the boundary for this area should be delineated. … EPA selected a roadway that is roughly the distance from the Lake Michigan shoreline that was requested by the state.

AR-0418 at 24, JA1292.

In fact, EPA chose 88th Avenue as the western boundary of the final ozone nonattainment area for Kenosha County, although 88th Avenue is further inland than the 4.2-mile contour identified in Wisconsin's technical support document, and is also significantly east of the busy Interstate 94 corridor, which EPA's

intended *and final* technical support documents identified as a major source of local ozone precursor emissions. *Id.; see* AR-0078 at 18, JA0567. There is nothing in the record to support EPA's final designation of 88th Avenue as the western boundary of the Kenosha County nonattainment area.

Sheboygan County. EPA similarly relied almost exclusively on the "distance-from-the-shoreline" approach and Wisconsin's so-called "source apportionment models" to modify the Agency's intended nonattainment area boundaries for Sheboygan County. EPA's intended designation was based on record evidence showing that the County has a violating monitor. AR-0116 at 25, JA-0634; AR-0419 at 31, JA1324. The Agency also relied on National Emissions Inventory data showing that each year, Sheboygan County sources emitted almost 4,600 tons of NOx and over 3,400 tons of VOCs, that over 928 million vehicle miles were traveled on Sheboygan County roads, and that almost 40,000 Sheboygan County residents (almost 70 percent of the county population) commuted within the county. AR-0116 at 27-32, JA0636-0641; AR-0419 at 33-37, JA1326-1330.

When EPA finalized "nonattainment boundaries consistent with the boundaries provided by the state … confined to a distance of 2.3 miles inland from the shoreline," AR-0419 at 41, JA1334, significant portions of EPA's intended nonattainment area were designated attainment/unclassifiable, *see* Figure 5:

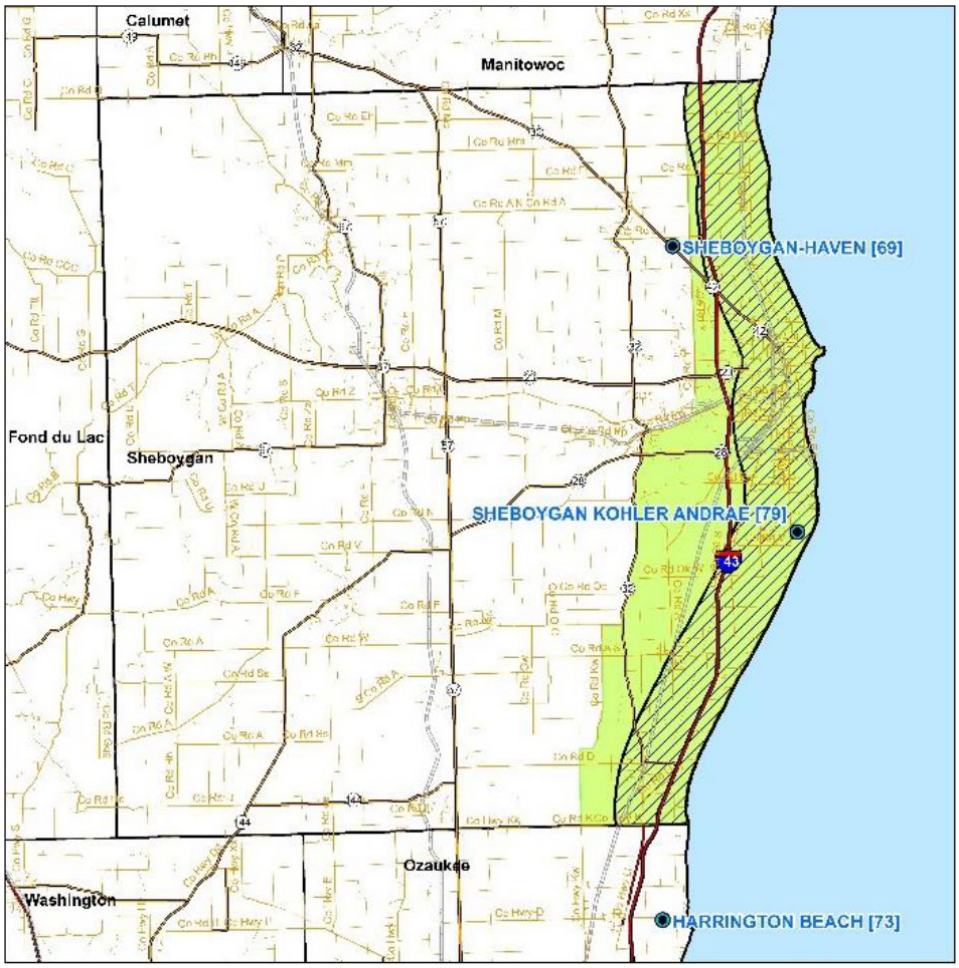

Figure 5. Source: AR-0300 at 30, Fig. 12, JA0919. EPA intended nonattainment area (green) and Wisconsin's "distance-from-the-shoreline" approach (hatched).

EPA never mentioned nor explained that a significant consequence of this change was that the nonattainment area would no longer include the largest point source in Sheboygan County. This is confirmed by Figure 6.

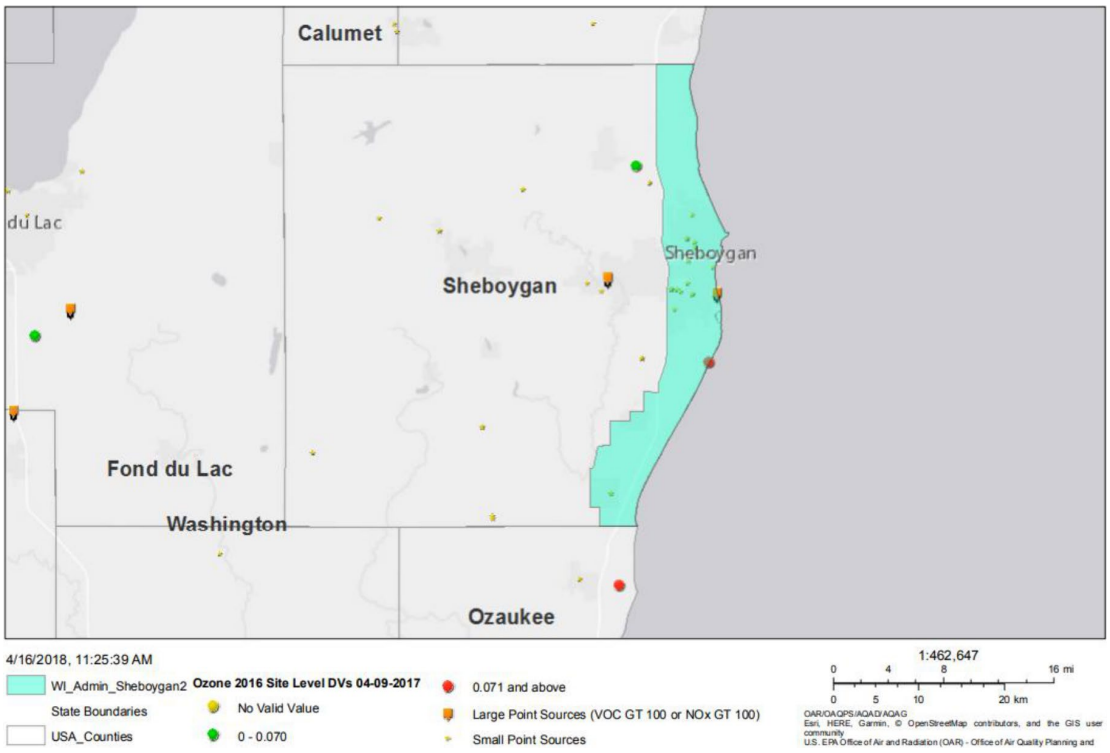

Figure 6. Source: AR-0419 at 41, JA1334.

EPA not only failed to acknowledge this significant change in its final technical support document but also affirmatively stated that "EPA does not believe there is sufficient evidence that … other portions of Sheboygan County contribute to air quality at the violating monitor." *Id*. EPA's final designation for Sheboygan County therefore was counter to the facts before the Agency and did not provide a rational connection between the facts and the choice made.

Manitowoc County. EPA's final nonattainment area boundary for Manitowoc County also relied on Wisconsin's untested "distance-from-the-shoreline" approach and flawed "source apportionment" modeling. The resulting nonattainment area excluded a portion of the county where National Emissions

Inventory data showed some of the highest ozone precursor emission levels. EPA's record showed one violating monitor in Manitowoc County, AR-0116 at 48, JA0657; AR-0419 at 45, JA1338, and that Manitowoc County sources annually emitted over 3,200 tons of NOx and about 2,800 tons of VOCs. AR-0116 at 50, JA0659; AR-0419 at 47, JA1340. Moreover, approximately 760 million vehicle miles were traveled on Manitowoc County roads each year, including those driven by 23,000 Manitowoc County residents (about 56 percent of the total county population) who commuted within the county. AR-0116 at 53, JA0662; AR-0419 at 50, JA1343.

EPA's intended nonattainment area had included the Manitowoc violating monitor and areas where stationary and mobile source emissions are concentrated in the east central portion of the county, extending from Interstate 43 to the City of Manitowoc on the shore of Lake Michigan. AR-0116 at 62-64, JA0671-0673. Objecting to the idea that EPA's "intended nonattainment area was intentionally designed to include major emission sources located in the county," Wisconsin put forward instead the "distance-from-the-shoreline" approach, which excluded significant mobile and stationary sources of emissions from the non-attainment area. AR-0300 at 30, JA0919. Despite the states' clear mandate to identify emissions that cause or contribute to nonattainment of NAAQS, 42 U.S.C. § 7407(d)(1)(A)(i), EPA relied on the untested "distance-from-the-shoreline"

approach for its final nonattainment designation for Manitowoc County. AR-0419 at 55, JA1348.

Figure 7 shows the disparity between Wisconsin's "distance-from-the-shoreline" approach and EPA's record-based intended nonattainment area boundary:

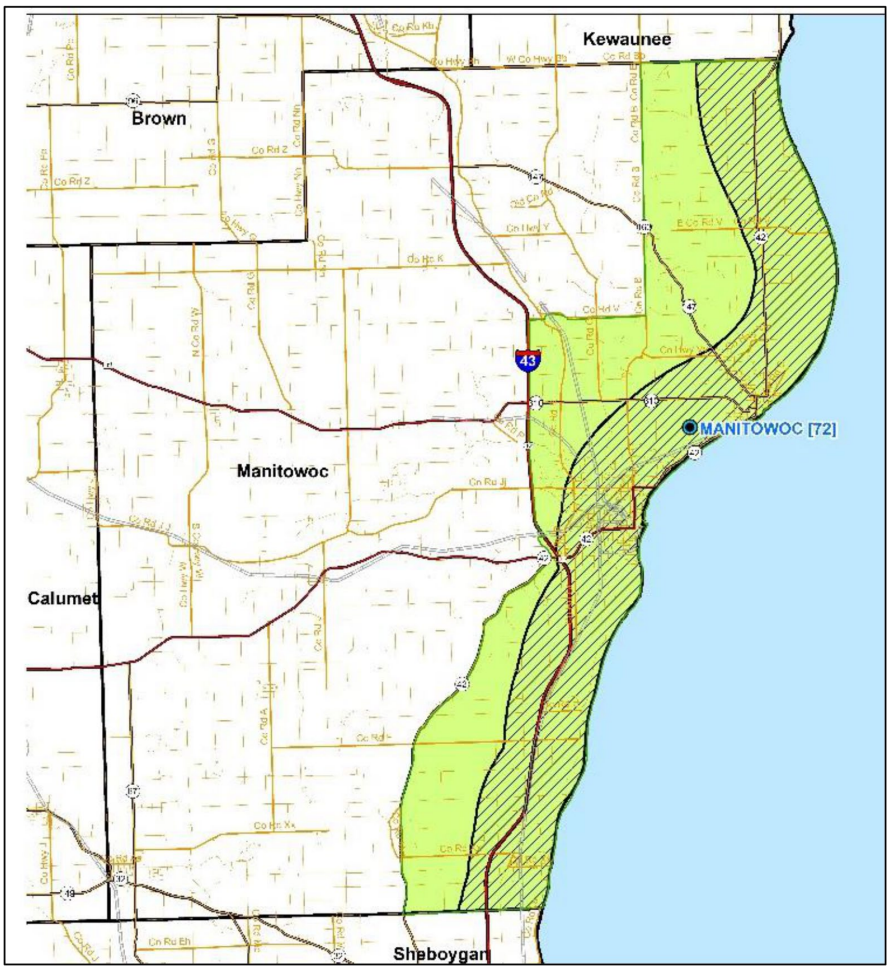

Figure 7. Source: AR-0300 at 31, Fig. 13, JA0920. EPA intended nonattainment area (green) and Wisconsin's "distance-from-the-shoreline" approach (hatched).

The final nonattainment area boundary, arbitrarily extending no further than 2.9 miles inland from the lakeshore, excludes a large section of the busy I-43

corridor in the middle of the county, where there is an intersection with a major federal highway—the very part of EPA's intended nonattainment area where the Agency's own record data shows some of the highest levels of local emissions from stationary sources and vehicle miles traveled. AR-0116 at 50-54, JA0660-0663; AR-0419 at 2, 45, JA1295, JA1338.

EPA's final Manitowoc County ozone nonattainment boundary was not only contrary to the record in this docket, but also to EPA's own analysis of that record. EPA provided no rational basis for establishing nonattainment boundaries based on Wisconsin's newly proposed and untested "distance-from-the-shoreline" approach.

3. Door County.

EPA's final nonattainment designation boundary for Door County was arbitrary and capricious because the Agency disregarded record evidence supporting a larger nonattainment area, without adequate explanation for doing so. *State Farm*, 463 U.S. at 43. The stark contrast between EPA's intended nonattainment area for Door County and EPA's final designation is shown on Figure 8, which displays EPA's intended nonattainment area in green and the final nonattainment area in pink:

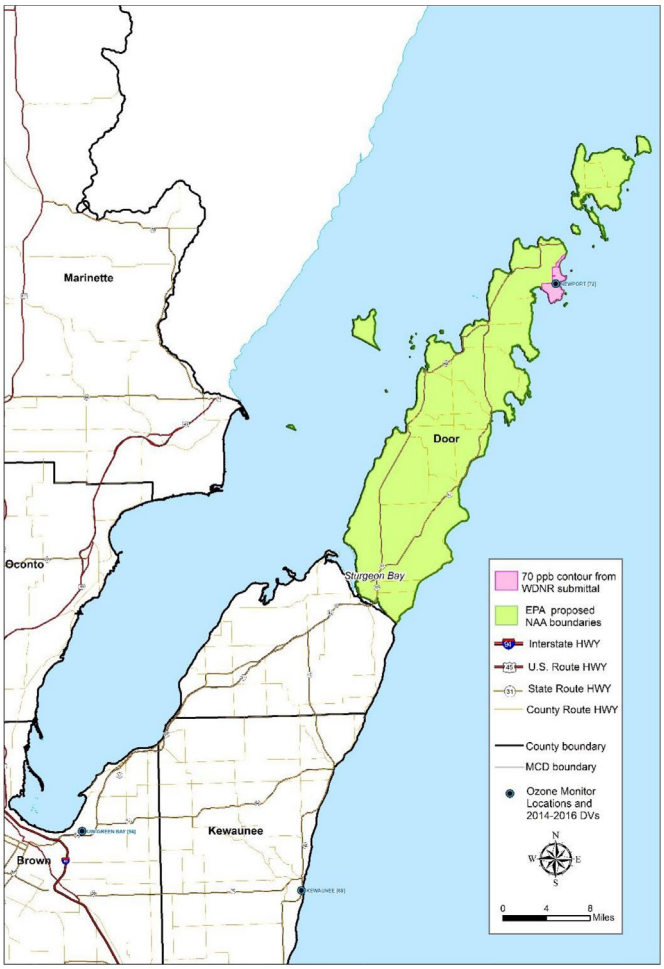

Figure 8. Source: AR-0300 at 7, JA0896. EPA intended nonattainment area (green) and Wisconsin's approach/EPA final designation (pink).

Door County has one violating monitor, AR-0116 at 68, JA0677; AR-0419 at 60, JA1349, and sources emitting over 3000 tons of NOx and over 2400 tons of VOCs annually, AR-0116 at 70, JA0679; AR-0419 at 62, JA1351. During the analysis period nearly 400 million vehicle miles were traveled on Door County roads per year, including by some 8700 Door County residents (about 65 percent of the total county population) commuting within the county. AR-0116 at 73-74, JA0682-0683; AR-0419 at 64-66, JA1357-1357. EPA's record shows that the

violating monitor is on the northern part of the Door County peninsula, and that "[t]he majority of [Door County] point source emissions and … [vehicle miles traveled] are concentrated north of the Sturgeon Bay canal" which is located at the lower edge of the area shaded in green in Figure 8. AR-0116 at 74, JA0683; AR-0419 at 66, JA1357.

Based on that evidence, EPA had intended "to designate the northern portion of Door County (north of the Sturgeon Bay canal) as nonattainment for the 2015 ozone NAAQS." AR-0116 at 80, JA0689. Wisconsin objected, arguing that 100-meter modeled back trajectories indicate that violations at the Door County monitor "result from air being transported over the lake from the south." AR-0300 at 32, JA0921. Wisconsin also argued that "any nonattainment area should be limited to the boundaries of Newport State Park" (the pink area on the map, where the monitor is located). *Id.*

Despite its own analysis and record, EPA based its final Door County ozone nonattainment designation on Wisconsin's unsubstantiated assurance that "ozone concentrations above [70 parts per billion] in Door County are confined to an approximately 3.7 square mile area boundary of Newport State Park." AR-0419 at 70, JA1363. The Agency also adopted Wisconsin's selective interpretation of its modeling data:

> 100 m trajectories show that, on exceedance days, air parcels traveled almost exclusively from the south with most passing over Lake

> Michigan and originating in upwind areas over the lake and along the southern shore of Lake Michigan.

AR-0419 at 67, JA1360.

EPA did not even attempt to confirm Wisconsin's assertions. EPA's final designation also ignores record evidence—cited in both EPA's intended and final technical support documents—showing significant emissions of ozone precursors from stationary and mobile sources in the northern portion of the Door County peninsula. AR-0116 at 74, JA0683; AR-0419 at 66, JA1359. Moreover, EPA's selective reliance on 100-meter modeled data to determine Door County's ozone nonattainment designation, AR-0419 at 67, JA1360, is inconsistent with the Agency's statement—just five pages later in the same document—indicating that:

> [e]ven though Wisconsin contends that only the lower level trajectories (100 m) are indicative of the localized nearby impacts associated with the lake breeze effects, we accept that the higher level [modeled] trajectories (500m and 1000m) traversing land areas in Wisconsin have some value in detecting the potential impacts from longer-range "not nearby" sources for purposes of assessing R[ural] T[ransport] A[rea] status.

Id. at 72, JA1365.

EPA's *intended* 2015 ozone NAAQs nonattainment designation for Door County was supported by the record and consistent with applicable law. By contrast, EPA's *final attainment* designation ignored record evidence and failed to provide a "rational connection between the facts found and the choice made." *Miss. Comm'n*, 790 F.3d at 150 (quotation marks omitted).

C. EPA's Failure to Designate Ottawa County, Michigan as Nonattainment Was Unlawful, Arbitrary, and Capricious.

Ottawa County is in the same Combined Statistical Area as Muskegon and Allegan Counties, where two of the Western Michigan violating ozone monitors are located; one of these violating monitors is on Ottawa's border. AR-0414 at 23, JA1130; AR-0287 at 2 n.5, JA0758. EPA did not undertake a five-factor analysis of Ottawa's potential contribution to these violations before designating the county as attainment/unclassifiable. EPA dismissed commenters' objections to this omission, based on its conclusion that the monitored violations in Western Michigan are "mainly" or "primarily" impacted by out-of-state sources. AR-0414 at 22, JA1129; AR-0417 at 20, JA1206. That conclusion did not excuse EPA from its obligation to evaluate whether sources from "nearby" counties also "contribute."[10] *See. e.g., Catawba*, 571 F.3d at 39 (interpreting "contribute" to exclude counties that "may simply exacerbate a problem" would do "violence to section 107(d)'s very purpose."). In other words, EPA could not rationally conclude that Ottawa County does *not* contribute to Western Michigan nonattainment based solely on the fact that cities located across Lake Michigan do contribute significantly to that problem. Even as it discussed Ottawa County for

[10] There can be no dispute that Ottawa County is "nearby" violating monitors. Ottawa borders Muskegon and Allegan and is within the same Combined Statistical Area. *See Ohio v. Ruckelhaus,* 776 F.2d 1333, 1338 (6th Cir. 1985).

the first time in its Response to Comments, EPA wholly ignored all of the contribution factors but one, and treated that one arbitrarily. That approach both violated the plain language of Section 107(d), and was arbitrary and capricious.

1. EPA's Conclusion that Ottawa County Does Not "Contribute" To Western Michigan Nonattainment Was Arbitrary and Capricious.

In its analysis of Michigan's recommendations, and particularly after Sierra Club submitted detailed comments on Ottawa County's attainment designation, a rational decisionmaker would have considered how each of the five factors applied to the county. EPA did not do so.

a) EPA Ignored All But One Factor of its Five-Factor Test and Failed to Draw a Rational Conclusion from the Factor it Did Consider.

Had EPA considered Ottawa County air quality data pursuant to the first factor of its "contribution" test, it would have noted that a violating monitor is located on the border of the county, but it did not. AR-0414 at 23, Fig. 7, JA1130. Given the poor air quality on Ottawa's border, it is quite likely there are areas within the County that are also violating the NAAQS, but do not have a monitor. EPA's failure even to consider this evidence is arbitrary and capricious.

Additionally, and despite noting that "emission levels from sources in a nearby area indicate the potential for the area to contribute to monitored violations," *id.* at 9, JA1116, EPA failed to consider that, with more than 22,500

total tons of NOx and VOCs, Ottawa County is the second highest emitter among the counties in the Combined Statistical Area, emitting far more ozone precursors than the counties with violating monitors. *See* AR-0287 at 2, JA0758 (demonstrating that Allegan and Muskegon counties' emissions of ozone precursors were each only about half those of Ottawa).[11] Ottawa County's high ozone levels are due in part to the JH Campbell power plant near the shore of Lake Michigan, whose emissions account for about a third of the county's total and, according to air dispersion modeling submitted with Sierra Club's comments and discussed further below, contribute to increased ozone concentrations at the violating monitors in all three counties. *Id.* at 3-5, JA0759-0761. While ignoring Ottawa's relative contribution to the Western Michigan area's emissions, EPA took the opposite approach in evaluating counties in Southeast Michigan. EPA noted that while certain of the southeastern counties did not have violating monitors they would nonetheless be included in the Detroit nonattainment area because they "have among the highest NOx and VOC emissions in the area." *See* AR-0414 at 19, JA1126. Also contrasting with EPA's treatment of Ottawa, many of the

[11] Both EPA and Michigan compared certain individual Western Michigan counties' emissions levels with the *aggregated* emissions across multiple counties from metropolitan areas across Lake Michigan, or southeast Michigan. This Court has previously rejected such an "an apples-to-oranges comparison." *Miss. Comm'n*, 790 F.3d at 164.

counties in Southeast Michigan and around the country designated nonattainment based solely on their likely contributions to violations outside those counties had total ozone precursor emissions far lower than Ottawa. *E.g.*, AR-0414 at 10, JA1117 (Genessee, Lenawee, and Washtenaw Counties); AR-0410 at 14, JA1083 (Carroll, Maryland [8,954 tons]; Baltimore City, Maryland [17,471 tons]; and others).

EPA also did not consider Ottawa's population, population density, vehicle miles traveled or transportation arteries, despite the county's high ranking by these "emissions related" metrics. Sierra Club's comments noted that Ottawa's population density is the highest in the area, along with Kent County, that Ottawa and Kent contain the majority of the area's population, that the county had among the highest level of vehicle miles traveled, and that several major highways run through the county. AR-0287 at 6, JA0762, citing AR-0414 at 28, JA1135; AR-0024 at 42, JA0332. While EPA recognized that the "location of main transportation arteries … helps identify the probable location of non-point source emissions," AR-0414 at 13, JA1120, and noted in its analysis of Muskegon County that commuter "traffic is mostly centered around the north-south highway Rt. 31 and I-96," it did not acknowledge that these highways run through Ottawa County as well. *Id.* at 28, JA1135. By wholly failing to consider record evidence of monitored air quality and emissions data (the first and second factors of the five-

factor test) with respect to Ottawa County, EPA "entirely failed to consider an important aspect of the problem." *State Farm,* 463 U.S. at 43.

While EPA at no point made explicit that it examined *any* of the Designations Guidance factors for Ottawa County, its explanation for Ottawa County's designation in the Response to Comments appears focused on the third factor, meteorology and fate of emissions. AR-0417 at 20, JA1206. EPA failed to draw a rational conclusion from the facts before it, however. While EPA "disagree[d] that Ottawa County should be designated as nonattainment" because "the violating monitors in Western Michigan are primarily impacted by emissions from the Chicago [Combined Statistical Area]," the Agency did not grapple with evidence in the record that in-state sources also significantly impact these monitors, or acknowledge key gaps in its analysis. *Id*. First, as Sierra Club pointed out, the back trajectories and wind roses in the record both show that air masses are likely to move from Ottawa County north to Muskegon County, especially along the Lake Michigan shore. AR-0287 at 2, JA0758. Prevailing winds in the area are from due south, and there are several back trajectories to Ottawa County and along its coast from the violating Muskegon monitor. *See* AR-0414 at 29 Fig. 12, JA1136; AR-0024 at 14-15, JA0304-0305. Accordingly, precursor pollution from the JH Campbell power plant, on the shore, as well as other sources in Ottawa County, would be expected to influence the high ozone

levels in Muskegon County at a minimum. AR-0417 at 20, JA1206 (describing plant as being on the "western shore of Ottawa"); *see also* Exh. 3, JA1469 (Google Map illustrating JH Campbell plant location).

Even accepting the importance of the "lake breeze" in transporting ozone pollution over Lake Michigan to the violating monitors, it does not follow that this is the only relevant meteorological phenomenon; in fact, EPA also recognized a "land breeze" occurring overnight and into the morning. AR-0414 at 20, JA1127. EPA did not consider, however, whether the land breeze could blow JH Campbell's pollution as well as other local pollution towards Lake Michigan, later to be swept northward and back towards the shore.

One of the major commuter routes mentioned by EPA, Route 31, also runs close to the shoreline in Ottawa County. Further, even if EPA's basic premise that "shoreline" locations are not influenced by local sources were correct, Sierra Club's comments questioned whether the Muskegon monitor, three miles inland, could be considered "shoreline." AR-0287 at 3, JA0759. EPA did not address any of these issues in its final designations or Response to Comments. AR-0414 at 20-31, JA1127-1138; AR-0417, JA1187.

At odds with its analysis of Ottawa, EPA appeared to recognize the possibility that emissions from within Ottawa's two neighboring shoreline counties—Muskegon and Allegan—might contribute to violations of the standard

in those counties. *See* AR-0417 at 19, JA1205 ("[t]o the extent in-county emissions sources may *also* contribute to violations of the standard." (emphasis added)). EPA did not explain why this would not also be true for Ottawa.

Finally, EPA dismissed without a sound basis the most detailed analysis in the record of whether emissions from Ottawa County (specifically the JH Campbell plant) contributed to elevated ozone levels at the violating monitors: the air dispersion modeling prepared by Sonoma Technology and submitted with Sierra Club's comments. *Id*. at 20, JA1206. This modeling demonstrated that JH Campbell's emissions impacted all three of the violating monitors at levels above 70 parts per billion. AR-0287 at 3-6, JA0759-0762. While the plant's emissions profile has changed since the date of the emissions data used in the modeling due to upgrades at two of three boilers, Sonoma's analysis confirmed that pollution from Ottawa County is indeed moving into adjacent counties and significantly influencing ozone levels in those counties. It further demonstrated that even following the partial upgrade, the JH Campbell plant was, by itself, at times still emitting at the same daily levels that the modeling showed contributed to significantly increased ozone concentrations at the violating monitors. *Id.* at 5, JA0751. This modeling disproved EPA's assertion that in-state sources' impacts at the shoreline were negligible.

EPA took no issue with the modeling methodology or level of detail provided, as it did with some other modeling submissions. *See* AR-0417 at 26-27, JA1212-1213; *see also* AR-0287 at 4, 7-11, JA0760, JA0763-0767 (providing detailed modeling information and underlying data). Instead of seriously considering this information, however, EPA summarily dismissed it by setting out a novel standard for such modeling to demonstrate a "contribution" with neither precedent nor explanation for such a drastic change in approach by the agency. Specifically, EPA complained that

> the commenter has provided no information regarding whether [the daily emissions that remain, post-upgrade, at levels that the modeling showed were significantly increasing ozone concentration downwind] occur on days when the relevant monitors are exceeding the 2015 ozone NAAQS, or that meteorological conditions support that emissions on those days are transported to the violating monitors.

AR-0417 at 20, JA1206. Never before has EPA held air dispersion modeling to that high a standard. Nor was it a reasonable basis for wholly disregarding the modeling results. The modeling confirmed that emissions from a single source representing one-third of the NOx emissions in Ottawa County—nevermind the other two-thirds—significantly impacted ozone levels in nonattaining counties. Particularly given that elevated ozone levels typically occur on warm, high-energy-demand days, when it is likely that the JH Campbell facility would be operating, it

was arbitrary for EPA to use its novel standards for modeling a contribution as a basis to wholly ignore the facility's dramatic air quality impacts.

EPA's treatment of the Sonoma modeling also contrasted with how it treated other third-party modeling. Where the State of Wisconsin's modeling claimed to support an *attainment* designation, EPA agreed with the state's attainment analysis, even after noting the state had not provided enough information about the modeling to fully analyze it. AR-0419 at 23-24, JA1316-1317. EPA's treatment of third-party modeling thus appears results-oriented and arbitrary—where the results tended towards attainment, EPA relied on third-party modeling with acknowledged flaws, whereas when third-party modeling tended towards nonattainment, it created novel requirements in order to discount it.

In sum, EPA's analysis of the third factor—the sole pillar upon which EPA rests Ottawa County's designation—falls far short of justifying its action. Whatever discretion EPA has to assign weights to each Guidance factor, EPA may not elevate one factor while failing to analyze the others. Especially where EPA was presented with detailed evidence pointing to the likely contribution of in-state sources to ozone levels at the violating monitors, the agency's conclusion that out-of-state sources significantly impact Western Michigan ozone levels cannot excuse its arbitrary and irrational failure to meaningfully consider the role of Ottawa County's emissions as well.

b) EPA Failed to Respond to Significant Comments.

"An agency must consider and respond to significant comments received during the period for public comment." *Perez v. Mortg. Bankers Ass'n*, 135 S. Ct. 1199, 1203 (2015). "[S]ignificant" comments are those which are "relevant" and "which, if adopted, would require a change in the agency's proposed rule." *Home Box Office v. Fed. Communications Comm'n*, 567 F.2d 9, 35 n.58 (D.C. Cir. 1977).

As shown *supra,* Sierra Club's comments on emissions and emissions-related data were squarely relevant to the question of Ottawa County's contribution to Western Michigan ozone nonattainment, and therefore to its own attainment status. EPA's failure to respond to any of Sierra Club's comments on the five-factor test, save those on the air dispersion modeling, rendered the opportunity to comment "meaningless." *Lake Carriers' Ass'n v. EPA*, 652 F.3d 1, 11 (D.C. Cir. 2011). EPA's failure to respond to comments is enough on its own to render its decision to designate Ottawa County as attainment arbitrary and capricious. "Unless [an] agency answers objections that on their face seem legitimate, its decision can hardly be classified as reasoned." *PSEG Energy*, 665 F.3d at 209 (citation and internal quotation marks omitted); *see also Sierra Club v. Van Antwerp*, 661 F.3d 1147, 1157 (D.C. Cir. 2011).

D. EPA's Exclusion of Monroe and Jefferson Counties From the St. Louis MO-IL Nonattainment Area Was Arbitrary, Capricious, and Not in Accordance With Law.

1. EPA's Exclusion of Monroe County From the St. Louis MO-IL Nonattainment Area Was Arbitrary and Capricious.

For the same reasons set forth *supra* at 48-52, regarding the Agency's treatment of McHenry County, EPA's exclusion of Monroe County, Illinois from the St. Louis nonattainment area is contrary to law. In sum, EPA (a) employed an illogical process in switching Monroe County's designation at the last minute based principally on the Messina Letter, (b) inadequately explained the basis for its reversal, and (c) violated the Clean Air Act's 120-day notice requirement.

To be sure, unlike McHenry County, EPA *attempted* to explain its reversal on Monroe County, citing Missouri's intervening analysis of meteorology and back trajectories in asserting that emissions from Monroe were "less likely" than emissions from elsewhere to contribute to nearby violations. AR-0416 at 26, JA1185. That assertion is irrelevant, however, even if true. As we have said, *supra* at 84, this Court has held that a contribution may justify a nonattainment designation even if the contribution "simply exacerbate[s] a problem rather than cause[s] it." *Catawba*, 571 F.3d at 39. Similarly, even if emissions from Monroe County were less likely than emissions from another county to contribute to violations, that does not answer the relevant question: Did Monroe County

contribute to violations? Illinois EPA's original submission, and EPA's intended and even final technical support documents show that the answer to that question was yes.

2. EPA's Exclusion of Jefferson County From the St. Louis, MO-IL Nonattainment Area Was Arbitrary and Capricious.

Although Jefferson County has been in the St. Louis ozone nonattainment area since the 1979 NAAQS, AR-0303 at 6, JA0951, and although EPA's intended designation included it in the nonattainment area, AR-0211 at 2, JA0693, EPA offered no reasoned basis for suddenly excluding it from the final nonattainment designation and instead designating it attainment/unclassifiable.

Acknowledging that Jefferson County ranks fourth among area counties in NOx and sixth in VOC emissions, EPA's final designation technical support document nevertheless argued that "it is more rural than the other counties … and the most significant point sources … are in the southern half of the county, further away from the violating monitor and less likely to contribute during the stagnation conditions highlighted by Missouri on the 3 highest ozone days at the West Alton monitor." AR-0416 at 27, JA1186.

These words do not constitute a rational basis for EPA's changed position. The emissions sources and the violating monitor remain in the same locations, with air frequently traveling from the south (through Jefferson County) to the violating

monitor, during the timeframes covered by both the intended and final designations. AR-0211 at 10, 18, 21, 23-24, JA0701, JA0709, JA0712, JA0714-0715; AR-0416 at 11, 18, 22, JA1170, JA1177, JA1181. EPA used identical population and commuting data to assess the relatively rural nature of the county and its motor vehicle emissions for both the intended and final designations. AR-0211 at 11-15, JA0702-0706; AR-0416 at 12-17, JA1171-1176. Moreover, it was irrational for EPA to rely solely on meteorological data for the three highest ozone days, when the West Alton monitor exceeded the NAAQS on seventeen days in 2015-2017. AR-0416 at 22-23, JA1181-1182. EPA acknowledged elsewhere the necessity of evaluating meteorological data to assess pollution transport pathways on all seventeen violating days, and such pathways clearly demonstrate Jefferson County contributed to the violations on nine of those days. *Id*. at 18, 23, JA1177, JA1182.

Rather than relying on its own robust record, EPA adopted Missouri's recommendation to exclude Jefferson County, "citing fewer violating monitors than in prior years as indicative of ever-improving ozone air quality in the area." AR-0416 at 25, JA1184. As illustrated by Table 2, the facts contradict the state's claim. Between Missouri's initial and revised recommendations, the West Alton monitor actually violated the NAAQS on more days and its monitored concentrations increased slightly. The West Alton monitor was the only one

violating the NAAQS at the time of both Missouri's initial and revised recommendations, and it has consistently recorded violations throughout the time periods evaluated by both Missouri and EPA.

Table 2. Ozone Violations During Relevant Timeframe—Missouri.

	Missouri's initial recommendation (9/16)	EPA's intended designation (1/18)	Missouri's revised recommendation (2/18) and EPA's final designation (4/18)
Monitoring data	2013-2015	2014-2016	2015-2017
Violating monitors	1 (W. Alton, St. Charles Co.)	3 (inc. W. Alton, St. Charles Co.)	1 (W. Alton, St. Charles Co.)
Violating days at W. Alton monitor	12	19	17
Ozone design value at W. Alton monitor	71 parts per billion	72 parts per billion	72 parts per billion
Jefferson County included	Yes	Yes	No
Data Sources	AR-0026 at 1, 9-10, 24-25, JA0370, JA0372-0373, JA0386-0387	AR-0211 at 6-7, JA0697-0698; AR-0026 at 24-25, JA0386-0387; AR-0303 at 21, JA0966.	AR-0303 at 1, 8, 10, 21, JA0946, JA0953, JA0955, JA0966; AR-0416 at 7-8, 22-23, JA1166-1167, JA1181-1182

This Court has found an air quality designation to be arbitrary and capricious when EPA's treatment of a county is inconsistent with other counties in the same area, and EPA's rationale for the designation changes between the intended and the

final designation with no change in data. *Catawba*, 571 F.3d at 51-52. In *Catawba,* New York challenged EPA's designation of Rockland County, New York as nonattainment for the 1997 fine particulate matter NAAQS. *Id.* at 49-50. In finding that action arbitrary and capricious, the Court noted that EPA had applied a certain test in deciding which counties would be designated nonattainment in one portion of the area of analysis, but it did not apply the same test in the portion of the area containing Rockland County. *Id.* at 51. If EPA had consistently applied the test, the Court concluded, Rockland County would have been designated attainment. *Id.* Furthermore, with no change in data, EPA characterized Rockland's commuter numbers as "low" in its initial designation and "significant" in its final designation. *Id.* at 51-52. The Court held that EPA's inconsistent approach and inconsistent characterization of data, as well as EPA's divergent treatment of Rockland in comparison to other counties was arbitrary and capricious. *Id.* at 52.

a) EPA Selectively Ignored Relevant Data in Excluding Jefferson County From the Nonattainment Area.

EPA evaluated meteorological data, specifically back trajectories from the West Alton monitor, to identify areas potentially contributing to violations at the monitor. AR-0416 at 17-18, JA1176-1177. Although EPA acknowledged that back trajectories on all violating monitor days "should also be assessed and given

appropriate weight," *id*. at 23, JA1182, it accepted Missouri's cherry-picked use of back trajectories on only three of seventeen violating days for purposes of excluding Jefferson County from the nonattainment area. For Franklin County, however, EPA reviewed the full set of seventeen days' back trajectories and found that they passed through Franklin County on five violating monitor days, *id*., as shown in Figure 9 below.

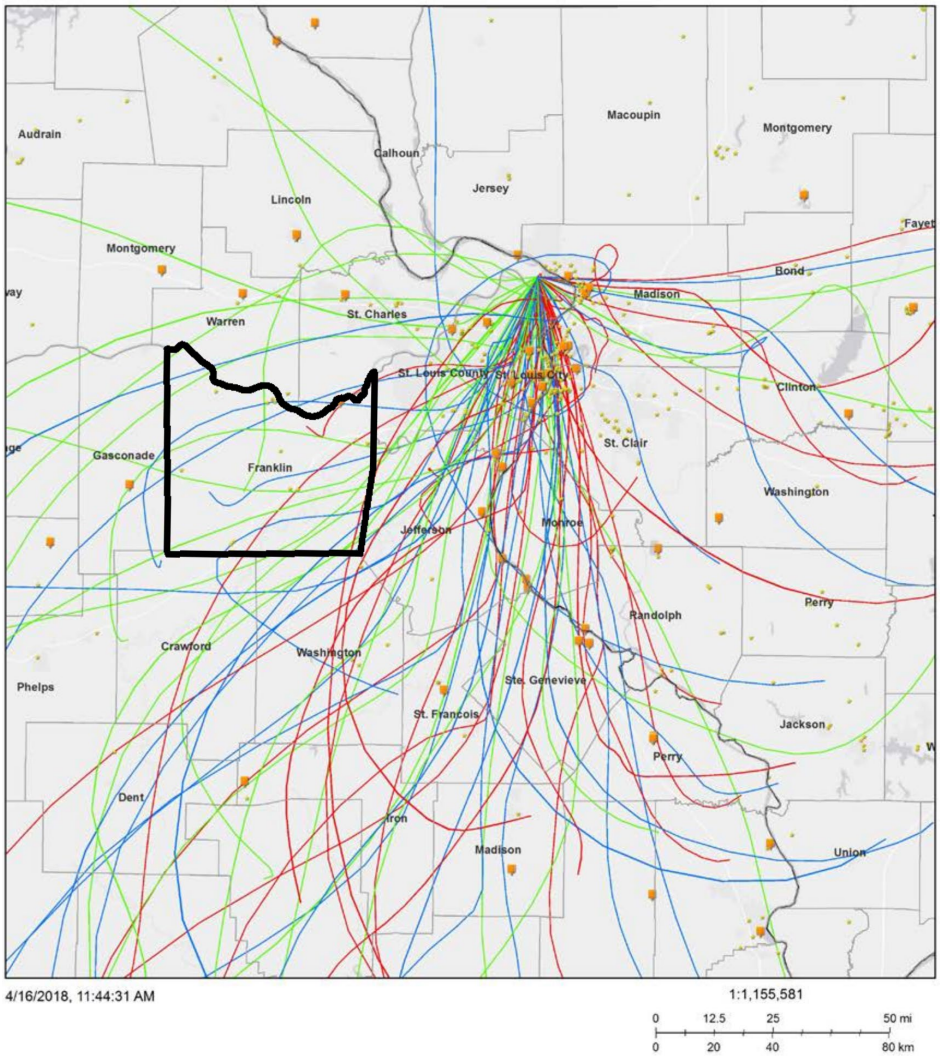

Figure 9. Back trajectories through Franklin County (bolded) to West Alton monitor. Source: AR-0416 at 18, JA1177.

The passage of back trajectories through Franklin County on these five days, coupled with the presence of a large NOx source in northeastern Franklin County (Boles Township), led EPA to conclude that Boles Township is contributing to violations at the West Alton monitor and include it in the St. Louis nonattainment area. EPA rejected Missouri's revised recommendation to exclude Franklin County entirely. *Id*. at 23, 26, JA1182, JA1185.

> The EPA is modifying the State of Missouri's recommendation for Franklin County by including Boles Township in Franklin County as part of the St. Louis, MO-IL nonattainment area because this area is contributing to a violation in a nearby area.
> …
> As shown in Figure 6a, some exceedance day back trajectories from [the west-southwest] pass through Franklin County. A large NOx point source with typical emissions of greater than 6,000 tons per year is located in Boles Township. This source accounts for more than half of the NOx emissions within the county.

Id. at 25-26, JA1184-1185.

As shown in Figure 10 below, back trajectories on nine of the seventeen violating monitor days pass through Jefferson County. This is four more than the five violating days on which they pass through Franklin County.

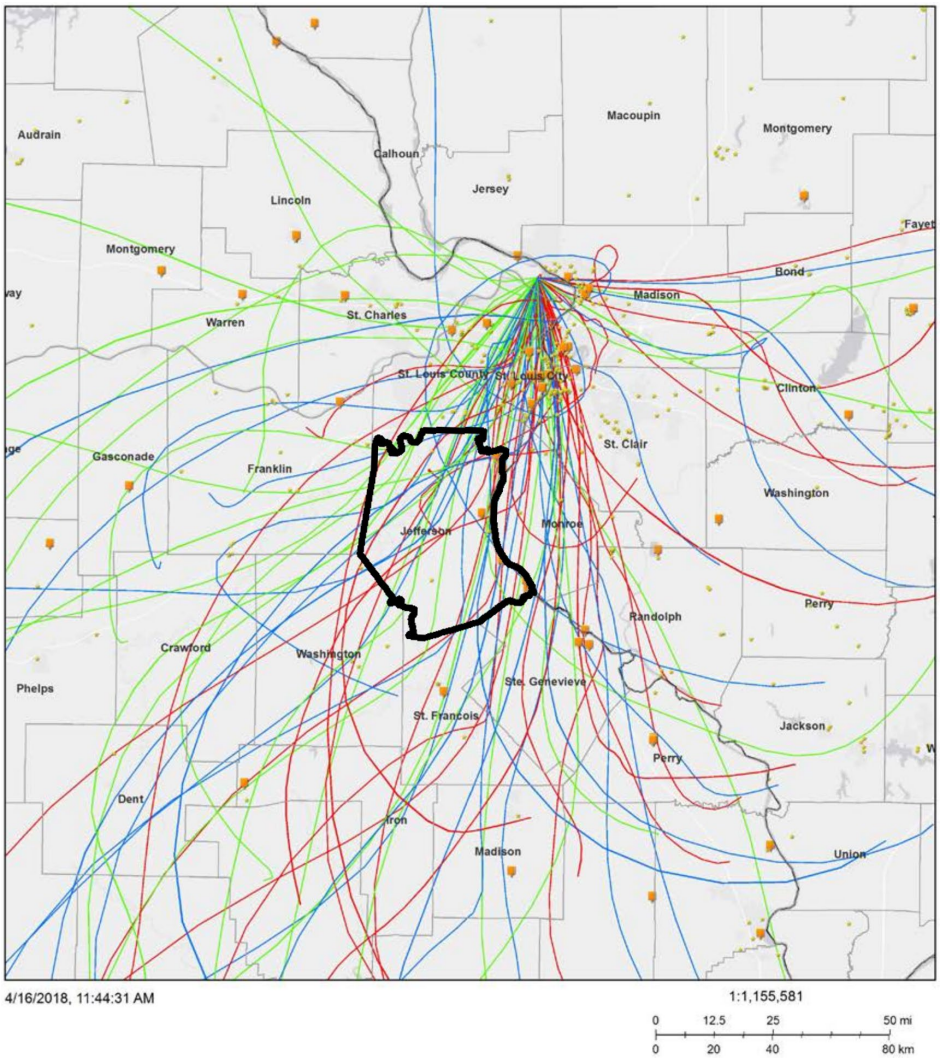

Figure 10. Back trajectories through Jefferson County (bolded) to West Alton monitor. Source: AR-0416 at 18, JA1177.

Further, just as there is a large NOx source in Franklin County with emissions of greater than 6,000 tons per year, there is a pair of large NOx sources in Jefferson County with combined emissions greater than 6,000 tons per year. AR-0435 [National Emissions Inventory data], JA1367-1368. As shown in Figure 11 below, these Jefferson County sources are roughly equidistant from the West Alton monitor as the Franklin County source.

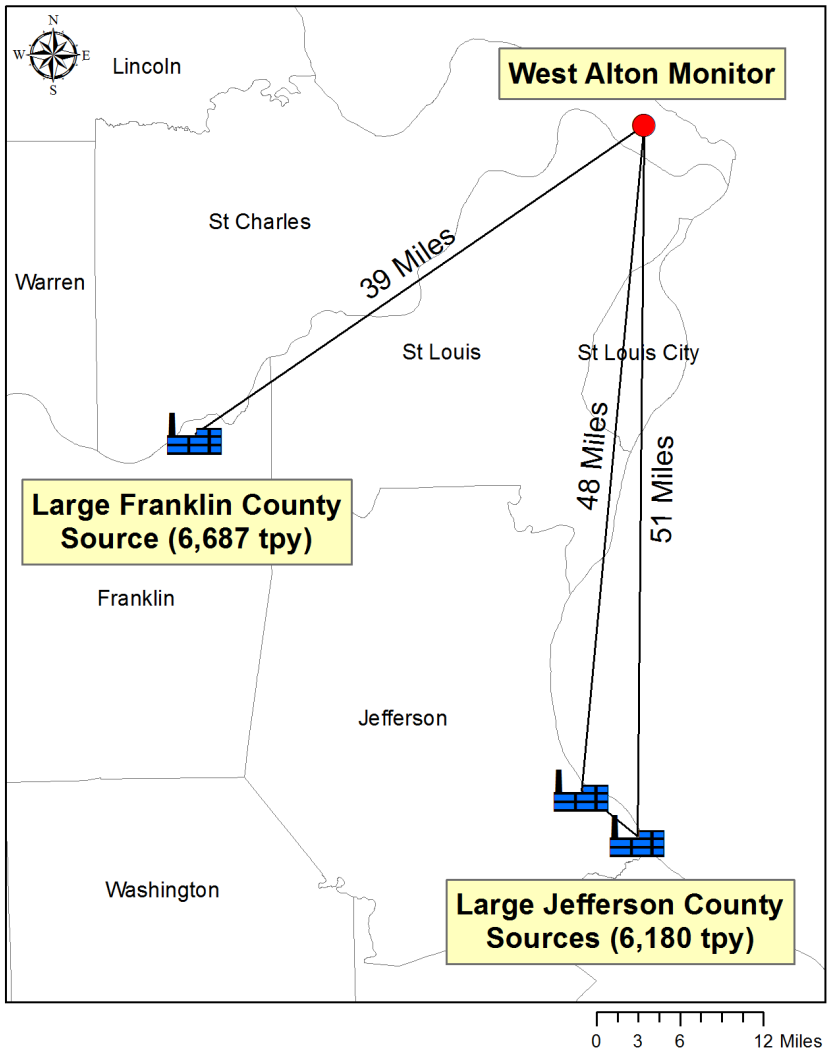

Figure 11. Location of large NOx point sources in Franklin and Jefferson Counties, relative to the West Alton monitor. Source: AR-0435 [National Emissions Inventory data], JA1367-1368.

EPA offered no explanation as to why it considered meteorological data for only three of seventeen violating monitor days for Jefferson County in its final designation, whereas it noted the potential importance of and considered all seventeen violating days for Franklin County. Had EPA treated Jefferson and Franklin Counties consistently, and considered back trajectories on all seventeen

violating monitor days as well as the large NOx sources for both counties, it would have had no choice but to designate Jefferson County nonattainment.

It is also worth noting that for nearly every other factor considered by EPA, Jefferson County was a greater contributor to ozone pollution in the area than Franklin County. It had more NOx emissions, its population is more than twice as large, is growing more than twice as fast and drove more vehicle miles, and more of its residents commuted to St. Charles County, where the violating West Alton monitor is located. AR-0416 at 10, 13, 15, JA1169, JA1172, JA1174. Only in its VOC emissions did Franklin County exceed Jefferson County. *Id.* at 10, JA1169. EPA's unjustified disparate treatment of these two counties is a poster child for arbitrary and capricious decisionmaking. *Cf. Catawba*, 571 F.3d at 52 ("Rockland County's nonattainment designation is troubling because of the apparent inconsistency in EPA's approach to designations in different EPA regions, EPA's varying characterizations of Rockland's statistics, and EPA's treatment of Rockland as compared to Dutchess and Ocean Counties.").

While not addressing its failure to consider fourteen of the seventeen exceedance days for Jefferson County, EPA stated that the three days it did consider justify excluding Jefferson County because on those days, the air was stagnant without much pollution transport from counties not immediately adjacent to St. Charles. AR-0416 at 22, 26, JA1181, JA1185. That argument failed to

account for the other fourteen days, on many of which back trajectories show that air was indeed coming from Jefferson County to the violating monitor in St. Charles. EPA hung its hat on the fact that the three days it considered represented the very highest ozone exceedance days. *Id*. at 22, JA1181. But EPA did not, and cannot, explain why the very highest days obliterate the significance for Jefferson County of the many other exceedance days. Indeed, if the three lowest exceedance days were the only three exceedance days, EPA still would have had to evaluate meteorological conditions to understand what sources were contributing to violations on those days. Having acknowledged the relevance of all violating monitor days for its Franklin County evaluation, EPA cannot cherry-pick just three violating days for its Jefferson County evaluation.

Moreover, EPA's stagnant air theory is itself based on cherry-picked data. EPA looked at back trajectories for air travel at three different heights–100, 500, and 1,000 meters above ground level–yet focused on only the 100-meter trajectories in its Jefferson County evaluation without offering any justification for doing so. *Id.* Quoting Missouri, EPA claimed that "the 100-meter back trajectory path [on the three high ozone days considered] is short indicating that the highest concentration readings … are mostly as a result of stagnant air in the area." *Id*. However, the 100-meter trajectories on only two of the three days EPA considered can be described as short; the third extends over 200 kilometers to the southeast.

Further, the 500- and 1000-meter trajectories on all three days traverse multiple counties and are generally much longer than the 100-meter trajectories, further undercutting EPA's theory about stagnant air on high ozone days.

b) EPA Abandoned Its Intended Nonattainment Designation Without Any Change in Emissions and Related Data.

Using the same emissions and related data that supported its intended nonattainment designation for Jefferson County, EPA reached the opposite conclusion in its final designation several months later. *Cf.* AR-0211 at 9, 11-13, JA0700, JA0702-0704 *with* AR-0416 at 10, 13-15, JA1169, JA1172-1174. EPA offered no reasoned basis for that 180-degree change; rather, its comments in the final designation suggest an effort to back-fill a decision made for unstated reasons unrelated to the required statutory criteria. This lack of a "rational connection between the facts found and the choice made" is the "hallmark" of an arbitrary and capricious decision. *Catawba*, 571 F.3d at 41 (quoting *Burlington Truck Lines v. U.S.*, 371 U.S. 156, 168 (1962)), 51.

The intended designation contained the following statement, which EPA omitted from its final designation notwithstanding that all of the cited facts remained unchanged:

> Franklin County, Jefferson County, and the City of St. Louis in Missouri and St. Clair County in Illinois, do not have violating monitors. These counties have, however, among the highest NOx and VOC emissions in the area of analysis and among the highest [vehicle

> miles traveled] in those counties. Franklin County ranked in the top five within the area of analysis in NOx and VOC emissions, and in the top seven for both population and [vehicle miles traveled]. Jefferson County ranked fourth and sixth, respectively, for NOx and VOC emissions; sixth for population; and fifth for total [vehicle miles traveled].

AR-0211 at 23, JA0714. In the final designation, EPA acknowledged Jefferson County's significant NOx and VOC emissions, but then used the same population, population density, and commuting rankings and statistics that supported the intended nonattainment designation to support an attainment conclusion instead.

Whereas the intended designation appropriately included Jefferson County among the contributing counties, the final designation—with no change in data—repackaged much of that data in order to downplay Jefferson County's significance. For example, of the seven Missouri counties it evaluated, EPA labeled only Lincoln and Warren as "distant" in the intended designation, with Jefferson and Franklin discussed alongside the other significant counties. *Id.* at 23-24, JA0714-0715. In the final designation, EPA grouped Jefferson and Franklin with Lincoln and Warren under the "distant" label without explaining the change, and notwithstanding the facts that neither the counties nor their sources had moved any farther from the West Alton monitor and that EPA was using the same emissions, population, and commuting data. AR-0416 at 11, 12, 26, JA1170, JA1171, JA1185.

Similarly, EPA's final designation attempted to dismiss Jefferson County's significance by stating that "it is more rural than the other counties." *Id*. at 27, JA1186. It is not hard to see why EPA failed to identify "the other counties"; its own data showed that Jefferson County is similar in population and population density to St. Clair and Madison, the two Illinois counties within the nonattainment area. *Id*. at 13, JA1172. And while those counties both lost population between 2010 and 2015, Jefferson County's population grew. *Id*. Moreover, when all fifteen Missouri and Illinois counties EPA evaluated are ranked according to population and population density, there is a steep drop after Jefferson County. Franklin County, a portion of which is in the nonattainment area, has less than one-half of Jefferson's population and about one-third of its population density, and the remaining counties have only one-quarter to one-fortieth of Jefferson's population and one-quarter to one-twentieth of its population density. *Id*.

The final designation employed a similar tactic, reframing the significance of Jefferson County's emissions, again with no change in the underlying data. Whereas the intended designation noted that Jefferson County's NOx, VOC, and vehicle-related emissions are "among the highest" in the area of analysis, AR-0211 at 23, JA0714, the final designation lumped Jefferson and Franklin with rural Lincoln and Warren to say that the four counties collectively account for 21.8 percent of the VOC and 31.9 percent of the NOx emissions in the Missouri portion

of the area. AR-0416 at 11, JA1170. EPA offered no explanation for that odd grouping. Jefferson and Franklin Counties' NOx emissions represented 10 and 9.7 percent, respectively, of the 15-county area's total, higher than St. Louis City and St. Clair, IL, both of which are in the nonattainment area. *Id*. at 10, JA1169. In contrast, Lincoln and Warren provided merely 1.9 and 1.3 percent, respectively, of the area's total NOx emissions. *Id*. The pattern repeats regarding vehicle miles traveled. Whereas EPA relied on Jefferson County's status "in the top seven" counties for vehicle miles traveled to support the intended nonattainment designation, AR-0211 at 23, JA0714, EPA made no mention of Jefferson County's vehicle miles traveled in discussing its final decision. AR-0416 at 27, JA1186.

This Court has already rejected such tactics involving particulate matter NAAQS designations, where "EPA's rationale for designating Rockland County changed between the initial designation and the final designation, with no apparent change in data." *Catawba*, 571 F.3d at 51.

In sum, EPA's decision to exclude Jefferson County from the St. Louis MO-IL nonattainment area was arbitrary and capricious. It was based on cherry-picked back trajectories that represent only three out of seventeen days when the West Alton monitor measured ozone violations, whereas Jefferson County contributed to nine of the seventeen violating days. Furthermore, it unreasonably reframed Jefferson County's role in contributing to ozone pollution in the area in a manner

that, without rational basis, was markedly different from the intended designation and misleading. The designation of Jefferson County as attainment/unclassifiable should be vacated and remanded.

E. EPA's Designation of Metro-Denver Was Contrary to the Clean Air Act and Arbitrary and Capricious.

1. EPA's Exclusion of Northern Weld County From the Metro-Denver Nonattainment Area Was Contrary to Clean Air Act Section 107(d).

a) EPA's Analysis Must Respect the Plain Language of Section 107(d) By Reflecting the Act's Distinction Between "Contribute" and "Significantly Contribute."

The Clean Air Act provides that a nonattainment area must include any area "that contributes to ambient air quality in a nearby area that does not meet" a NAAQS. 42 U.S.C. § 7407(d)(1)(A)(i). In crafting this provision, Congress purposefully declined to use the modifier "significantly," which appears in related provisions of the Act. *See id.*, §§ 7410(a)(2)(D)(i)(I) (state implementation plan must prohibit emissions that will "contribute *significantly* to nonattainment in . . . any other State") (emphasis added); 7426(a)(1)(B) (providing for notification of nearby states if a source is being constructed that "may *significantly* contribute" to violation of the NAAQS in such other state) (emphasis added); 7511a(h)(2) (providing that an area may be treated as a rural transport area if its emission sources "do not make a *significant* contribution" to ozone concentrations in that area or any other area) (emphasis added). This indicates that a "contribution" for

purposes of Section 107(d) may be something *less than* a "significant contribution." *Cf. EPA v. EME Homer City Generation, LP*, 134 S. Ct. 1584, 1601 (2014) ("We do not lightly assume that Congress has omitted from its adopted text requirements that it nonetheless intends to apply, and our reluctance is even greater when Congress has shown elsewhere in the same statute that it knows how to make such a requirement manifest." (quotation marks omitted)).

EPA recognized this common-sensical point in a previous designation case. See *Catawba*, D.C. Cir. No. 05-1064 (and consolidated cases), Final Brief of Respondent at 37 ("a "'significant' contribution is presumably larger than what would constitute 'contribution.'"), JA1437. Consistent with the plain language of the statute, this Court has recognized that "a 'contributing' county need not be the but-for cause" in order for its emissions to "contribute" to a violation. *Miss. Comm'n,* 790 F.3d at 163; *see also Catawba,* 571 F.3d at 39 (such an interpretation would do "violence to section 107(d)'s very purpose."). While EPA need not set a bright-line test for how much pollution constitutes a contribution or consider any non-zero contribution to mandate a nonattainment designation, *Catawba*, 571 F.3d at 39, EPA must at a minimum honor Congress' choice in 42 U.S.C. § 7407(d)(1)(A)(i) not to modify the term "contribution" with the term "significant." *Russello v. United States*, 464 U.S. 16, 23 (1983) (negative pregnant

rule of statutory interpretation); *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837, 842-843 (1984) (plain language controls).

b) There Is No Indication that EPA Respected the Statutory Text With Regard to Excluding Northern Weld.

For EPA's decision to be lawful, the Court must be able to discern from EPA's analysis of potentially contributing counties that EPA honored Congress' choice to not modify "contribute" with "significant" in section 7407(d)(1)(A)(i). The record for EPA's decision to exclude northern Weld from the Metro-Denver nonattainment area is completely devoid of any indication that EPA has honored Congress's choice to omit a significance requirement from section 7407 (d)(1)(A)(i).

EPA repeatedly says that it used a weight of the evidence test which considers five factors to determine if an area "contributes" to a violating monitor. *See e.g.* 83 Fed. Reg. at 25,778, SA008. In response to Petitioners' comment that 42 U.S.C. § 7407(d)(1)(A)(i) does not require a contribution to be significant for an area to be designated nonattainment, all EPA offered was repetition of its "talisman" that EPA evaluates the five factors on a case-by-case basis. AR-0417 at 45, JA1231. EPA did not even acknowledge that the contribution does not have to be significant, much less articulate how it applied the lower standard of simply contribute to exclude northern Weld.

What is in the record demonstrates that EPA did not honor Congress' decision to leave "significant" out of 42 U.S.C. § 7407(d)(1)(A)(i). For example, EPA has previously determined that Wyoming significantly contributes to the Metro-Denver ozone nonattainment area violating monitors. AR-0273 at 4, JA0736 (*citing* 82 Fed. Reg. 9,142, 9,143 (Feb. 3, 2017)). Wyoming is further north, and thus further away from the violating monitors than northern Weld. But EPA offered no explanation of how Wyoming significantly contributed to violating monitors but northern Weld did not even contribute.

Furthermore, in the section on qualifying to be considered a rural transport area, 42 U.S.C. § 7511a(h)(2), Congress set that standard as the area does not make a "significant contribution" to ozone in that area or other areas. Yet EPA used the same basic test for rural transport areas and for contributing areas under 42 U.S.C. § 7407(d)(1)(A)(i). *See* AR-0061 at 14, JA0532 ("we recommend that the state or tribe consider the effects of local emissions on the nearest potential nonattainment areas, in a qualitative sense using some of the data analyses described above"); *Cf*. AR-0007 at 33, JA0089 ("[t]he factors are similar in nature to the ones described above to guide development of nonattainment designation boundaries: air quality data, emissions estimates. meteorological transport patterns, and geography/topography.").

This case is similar to *North Carolina v. EPA*, 531 F.3d 896, 909-911 (D.C. Cir. 2008), where the Court held that EPA's discretion to implement the Act's Good Neighbor provision was limited by Congress's choice to use "contribute significantly to nonattainment" in one section and "contribute to interfere with maintenance" in another section. This Court required EPA to honor this difference in the statutory language even though 42 U.S.C. § 7410(a)(2)(D)(i)(I) is a provision that the Court has held EPA has discretion to interpret. *North Carolina*, 531 F.3d at 909-911.

So too here. In 42 U.S.C. § 7407(d)(1)(A)(i), Congress chose not to use the term "significant" but in 42 U.S.C. §§ 7410(a)(2)(D)(i)(I) and 7511a(h)(2), Congress did use the term significant. There is no indication that EPA honored that difference in Congress' plain language in its consideration of northern Weld's contribution to Metro-Denver nonattainment. Therefore, EPA's designation of northern Weld is contrary to law and must be vacated.

2. EPA's Decision To Exclude Northern Weld From The Metro-Denver Nonattainment Area Was Arbitrary.

a) EPA's Use Of A Straight Line Boundary To Exclude Northern Weld Was Arbitrary.

EPA refused to designate northern Weld County nonattainment, instead setting a straight east-west non-attainment boundary line at 40 degrees, 42 minutes,

47.1 seconds north latitude. 83 Fed. Reg. at 25,792, SA022. This line divided up a Combined Statistical Area.

EPA originally tried to graphically claim that the Cheyenne Ridge, which EPA claimed is the northern boundary of the Denver Basin, is in the middle of northern Weld County. AR-0069 at 32, JA0549. However, in its narrative in its initial technical support document, EPA acknowledged that the Cheyenne Ridge was "along Colorado's border with Wyoming." *Id.* at 27, JA0544. EPA also said the Cheyenne Ridge "roughly" coincides with the north boundary of the nonattainment area. *Id.* at 31, JA0548.

In its final technical support document, EPA once again said that the Cheyenne Ridge was "along Colorado's border with Wyoming." AR-0408 at 27, JA1071. EPA also "moved" the Cheyenne Ridge further north in the final graphical representation to be along the border with Wyoming. *Id.* at 34, JA1078.

But then EPA appeared to contradict itself, saying the northern sections of Weld County "include in [sic] the elevated terrain which forms the norther [sic] boundary of the Denver Basin, as shown in Figure 16; the southern aspect [sic] Cheyenne Ridge is the elevated terrain along the right (north) edge of that figure." *Id.* at 36, JA1080. But EPA's Figure 16, which is reproduced *infra* at 116 (Fig.12), shows that most of the excluded part of Weld County, designated with a blue oval, is not, in fact elevated.

EPA's analysis was arbitrary and capricious—it switched back and forth between claiming the Cheyenne Ridge is along the Colorado-Wyoming border and claiming it is not, an issue that clearly can be established from the facts on the ground. Indeed, EPA had to move mountains to find support for its idea that there are geographic and meteorological factors isolating northern Weld sources from Metro-Denver. EPA's claims were also contradicted by its own topographic map which showed that much of northern Weld, represented by the light green and darker green, is the same elevation as Greeley, Ft. Collins, and Loveland, which are all in the nonattainment area. The below topographic illustration of physical barriers that define the Denver Basin, shows there is no physical barrier at all between the nonattainment area and northeast part of Weld County which Colorado recommended be excluded. We have added a blue oval, which was not in the original, to show the area to which we refer.

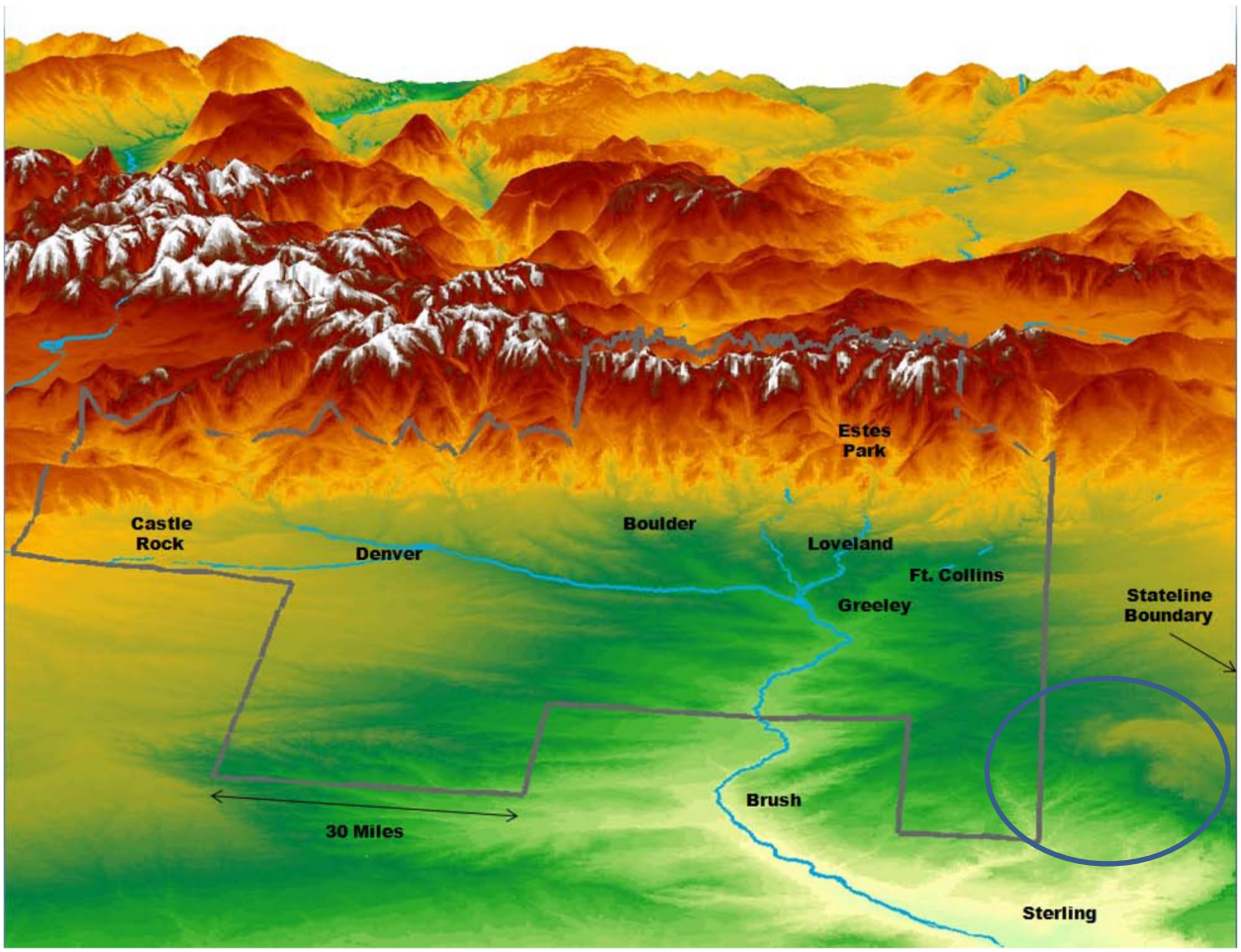

Figure 12. Source: AR-0408 at 37, JA1081.

The elevation map in Colorado's recommendation also shows the crest of the ridge is north of the town of Cheyenne, Wyoming. AR-0007 at 81, Fig. 1-32, JA0137.

EPA did not consider setting the nonattainment boundary based on elevation, such as it did for the Uinta Basin in Utah. *See* 40 C.F.R. § 81.345. Like Weld County, the Uinta Basin is a rural area where precursor emissions from the oil and gas industry are primarily responsible for the ozone problem. Rather, EPA proposed to exclude the part of Weld County north of 40 degrees, 42 minutes, 47.1 seconds north latitude, even though a large part of it was at the same or lower

elevation than southern Weld County, AR-0408 at 37, Fig. 16, JA1081, and of Greeley, Loveland and Ft. Collins, which are all included in the nonattainment area.

The bottom line is that the east-west straight line EPA chose for the border is not rationally related to the Cheyenne Ridge or elevated terrain. EPA had other options to rationally achieve its objective. It could have set the boundary based on elevation as it did for the Uintah basin in Utah. Or, EPA could have chosen the Colorado-Wyoming border, which would have been consistent with EPA's statements that the Cheyenne Ridge is along the Colorado-Wyoming border and would have ensured that all of the parts of Weld County which are at the same elevation are all included in the nonattainment area.

b) EPA's Ignoring the Boulder Monitor Is Arbitrary.

EPA claimed that it was "basing the designations on the most recent 3 years of certified ozone air quality monitoring data[.]" 83 Fed. Reg. at 25,777, SA007. However, rather than rely on the most recent monitoring data available for Boulder County, that is the 2013-2015 data which showed the Boulder monitor to be violating the NAAQS, EPA chose to ignore Boulder County's ozone levels. EPA did not consider back trajectory analysis for the violating Boulder monitor. AR-0069 at 9, JA0536; *see also* AR-0408, JA1045-1081.

c) EPA's Failure to Consider Northern Weld's Emissions Relative To All The Other Counties In The Nonattainment Area Except Weld County Was Arbitrary.

Finally, EPA's analysis is arbitrary because it only considered northern Weld County's emissions in relation to the whole of Weld County, and not in relation to the other counties EPA chose to include in the nonattainment area. Weld County's emissions are massive. Weld County's VOC emissions are more than all the other counties in the nonattainment area combined. AR-0007 at 46-47, JA0103-0104. A graphic representation which makes clear the contribution of Weld County to the ozone problem is below.

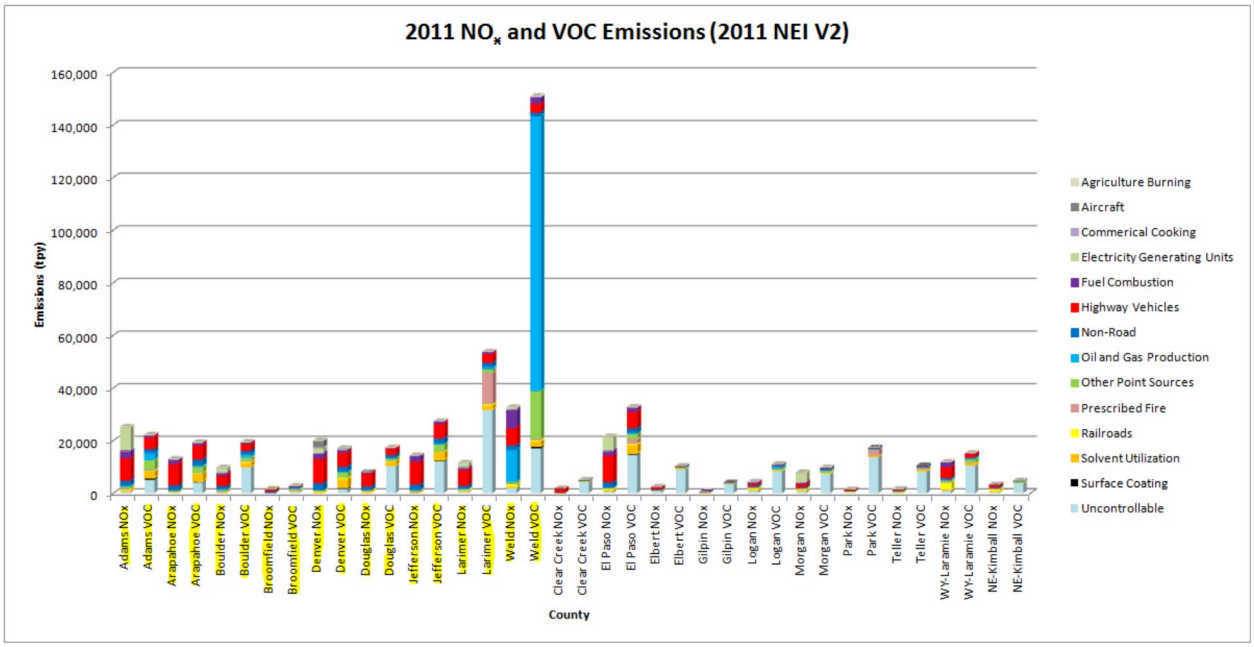

Figure 13. Source: AR-0007 at 48, JA0105.

To compare northern Weld's emissions to the massive emissions of Weld County gives a skewed, arbitrary view of northern Weld's contribution to the

nonattainment area. In other words, EPA failed to consider the important part of the problem, which is northern Weld's emissions relative to all the other counties in the nonattainment area except Weld County.

If, instead, one were to compare northern Weld to the other counties, one would see that northern Weld County's VOC emissions are greater than every other county in the nonattainment area (excluding the included portions of Weld and Larimer Counties). *See id.* at 46-47, JA0103-1014. Northern Weld County's VOC emissions were almost twice as much as Boulder County, almost three times as much as Douglas County and almost nine times as much as Broomfield County. *Id.*

F. EPA's Failure to Designate El Paso County, Texas as Nonattainment was arbitrary, capricious and an abuse of discretion.

1. El Paso County Contributes to Nonattainment in Sunland Park.

Clean Air Act section 107(d) requires EPA to designate nonattainment not only those areas that are themselves violating the NAAQS, but also those areas that "*contribute*[] to" nonattainment in a "nearby area." 42 U.S.C. § 7407(d)(1)(A)(i) (emphasis added). As explained *supra* at 109-110, the language of the statute makes clear that the contribution does not have to be "significant."

The facts found by EPA established, beyond reasonable debate, that El Paso County, Texas contributed to nonattainment in Sunland Park, New Mexico. EPA

found that El Paso County was responsible for *58 percent* of the domestic NOx and *68 percent* of the domestic VOC emissions affecting Sunland Park. AR-0405 at 9, JA1037 (emphasis added). In other words, El Paso County was responsible for a *majority* of domestic emissions reaching the violating monitor. Even when foreign emissions were considered, El Paso was responsible for roughly a quarter of the emissions reaching Sunland Park. *See id.* at 16, JA1044 (El Paso emits 28 percent of regional NOx and 22 percent of regional VOCs). The violating monitor is located just over a mile from the El Paso border,[12] and EPA found that wind patterns are generally consistent with transport from El Paso to the violating monitor on days when that monitor exceeded the NAAQS. *See id.* at 14, JA1042 ("the back trajectories for each exceedance day are predominantly from the south and east"). To look at these facts and conclude that El Paso does not "contribute" to nonattainment in Sunland Park is to do violence to the English language—and the requirements of the Clean Air Act.

Notably, EPA never purported to find that El Paso was *not* a contributor to nonattainment in Sunland Park. Instead, EPA cited Mexico's contribution to Sunland Park's nonattainment as a basis for discounting El Paso's contribution. *See id.* at 16, JA1044. This argument is unavailing for three reasons. First, "a

[12] A Google Map illustrating the location of the Desert View monitor in relation to El Paso's border is included in Baake Decl. ¶ 2.

'contributing' county need not be the but-for cause of a violation in order to warrant a nonattainment designation." *Miss. Comm'n*, 790 F.3d at 163. It follows that a county may "contribute" to nonattainment even though another jurisdiction's contribution is larger.

Second, relying on foreign emissions at the designation stage is inconsistent with Section 179B of the Clean Air Act, which states:

> Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if—
>
> (1) such plan or revision meets all the requirements applicable to it under the chapter other than a requirement that such plan or revision demonstrate attainment and maintenance of the relevant [NAAQS] … and
>
> (2) the submitting State establishes to the satisfaction of the Administrator that the implementation plan of such State would be adequate to attain and maintain the relevant [NAAQS] … but for emissions emanating from outside of the United States.

42 U.S.C. § 7509a(a). This provision demonstrates that Congress intended EPA to consider foreign emissions *during its review of state implementation plans—i.e.*, after EPA has designated nonattainment areas. It upsets Congress's plan for dealing with foreign air pollution to excuse a county's contribution to nonattainment in a nearby area simply because a foreign country also contributes to such nonattainment.

Third, EPA's analysis of Mexico's contribution to Sunland Park's nonattainment rests on manifest errors. EPA argued that, since "[m]any of the back trajectories from the east flow across monitors in El Paso, all of which are meeting the 2015 ozone standard[,]" Mexico must be "primarily" responsible for the exceedance in Sunland Park. AR-0405 at 14, JA1042. That does not follow at all. It is not true that all of the El Paso monitors were meeting the 2015 ozone standard. Texas originally recommended that El Paso County be listed as nonattainment, because the University of Texas El Paso monitor (which is closest geographically to Sunland Park) had a design value that exceeded the 2015 ozone NAAQS. Only by massaging the raw data (i.e., treating one of the exceedances at the monitor as an "exceptional event") was Texas able to argue that El Paso County should be designated in attainment. And even after excluding the exceptional event data, the University of Texas El Paso monitor has a design value of 70 parts per billion—only 2 parts per billion less than the design value for Sunland Park. *Id.* at 7, JA1035. Even assuming Mexico was responsible for the 2 parts per billion that pushed Sunland Park over the limit, it does not follow that Mexico is "primarily" responsible for Sunland Park's exceedance. In any case, the notion that a contributing county can be designated as attainment so long as it is not the "primary" contributor to a NAAQS violation is inconsistent with the Clean Air Act. *See Miss. Comm'n*, 790 F.3d at 163; *Catawba*, 571 F.3d at 39.

On any reasonable reading of the Clean Air Act, a county that emits a quarter of the emissions affecting a nonattainment area "contributes to ambient air quality" in that area. Based on its factual findings, EPA was required to designate El Paso County as nonattainment.

2. EPA's Failure to Include El Paso in the Nonattainment Area Undermines a Core Purpose of the Clean Air Act and Leaves Sunland Park Powerless to Protect its Residents from Pollution.

A core purpose of the Clean Air Act is to extend federal protection to areas like Sunland Park, which do not themselves contribute significantly to air pollution, but which experience dangerous air pollution as a result of dispersion from a nearby urban center. The Act plainly states its purpose as protecting the many Americans who live in "urban areas, which … extend into two or more states," and that "Federal … leadership is essential … to prevent and control air pollution" in these areas. 42 U.S.C. §§ 7401(a)(1), (4). Consistent with this purpose, the Act provides several mechanisms to protect Americans from out-of-state emissions which they would otherwise be powerless to prevent. The most basic mechanism for protecting downwind communities is Section 107(d), which requires states to submit to EPA for inclusion in a nonattainment area any area "that contributes to" nonattainment "in a nearby area." §§ 7407(d)(1)(A)(i), 7407(d)(1)(B)(i). This ensures that small downwind communities like Sunland

Park, which have been injured by emissions from a neighboring jurisdiction, are not subsequently insulted by the impossible task of attaining the NAAQS single-handedly.

EPA has flouted its statutory obligations in this case. By designating Sunland Park but not El Paso as non-attainment, it has ordered Sunland Park to reduce its emissions, even though EPA's own record shows that sources in Sunland Park do not meaningfully contribute to its monitored violation of the NAAQS. El Paso is home to about 835,000 people, has several major point sources, and experiences nearly six billion vehicle-miles-traveled per year. *See* AR-0405 at 8-12, JA1036-1040. It has far higher population density and absolute population growth than Sunland Park. *Id.* at 10, JA1038. Overall, it is responsible for about 58 percent of the domestic NOx and 68 percent of the domestic VOC emissions within the region. *See id.* at 9, JA1037.

By contrast, Sunland Park's contribution to regional air pollution is so small that EPA did not even attempt to quantify it. The City has a single NOx point source and an estimated population of just over 20,000 people. AR-0035 at 12, 17, SA002, JA0394. There is no realistic possibility that it can attain the NAAQS by itself. By excluding El Paso from the nonattainment area, EPA has condemned Sunland Park to the worst of both worlds: stringent Clean Air Act regulation, which will put the City's businesses at an unfair disadvantage, *and* continued

exposure to unhealthy air, which will harm the City's residents. The Clean Air Act requires EPA to do better. The El Paso Designation must be vacated.

REMEDY

Vacatur is the proper remedy here, because EPA acted in an arbitrary and capricious manner. *See S. Coast Air Quality Mgmt. Dist. v. EPA*, 882 F.3d 1138, 1152-53, 1156-57 (D.C. Cir. 2018). Petitioners actively seek vacatur in this case to avoid adverse environmental effects from EPA's attainment designations for the counties or portions of counties at issue. A remand without vacatur would amount to an indefinite stay of the effectiveness of the Court's decision. *See NRDC v. EPA*, 489 F.3d 1250, 1264 (D.C. Cir. 2007) (Randolph, J., concurring). *See also In re Core Commc'ns, Inc.*, 531 F.3d 849, 862 (D.C. Cir. 2008) (Griffith, J., concurring) (remand without vacatur "sometimes invites agency indifference.").

CONCLUSION

For the foregoing reasons, Petitioners respectfully request that this Court vacate EPA's attainment designations for the challenged counties or portions of counties, and remand to EPA with instructions to designate these areas nonattainment, consistent with this Court's opinion.

Respectfully submitted this 7th day of August, 2019.

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CERTIFICATE REGARDING WORD LIMITATION

I hereby certify that, in accordance with Federal Rule of Appellate Procedure 32(g), the foregoing Petitioners' Joint Final Opening Brief contains 25,661 words, as counted by counsel's word processing system.

DATED: August 7, 2019

SIGNED: */s/ Ann Brewster Weeks*
Ann Brewster Weeks

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Petitioners' Joint Final Opening Brief was electronically filed with the Clerk of the Court using the CM/ECF system, which will send notification of said filing to the attorneys of record who have registered with the Court's CM/ECF system. Additionally, I have caused to be mailed to the Court, by first-class mail, eight paper copies of this brief and the Addendum to this brief.

DATED: August 7, 2019

SIGNED: */s/ Ann Brewster Weeks*
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