UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Defense Fund Comments on *EPA Response to the Designation Recommendation from Texas for the San Antonio Area for the 2015 Ozone National Ambient Air Quality Standards*	)	**Docket No. EPA–HQ–OAR–2017–0548** *Submitted via Regulations.gov* *April 30, 2018*

We appreciate the opportunity to submit these comments on behalf of Environmental Defense Fund ("EDF") on EPA's response to the designation recommendation from Texas for the San Antonio Area for the 2015 Ozone National Ambient Air Quality Standards ("NAAQS"). EDF is a nonprofit organization representing over two million members and supporters nationwide, including over 3,000 members in the San Antonio-New Braunfels core-based statistical area ("CBSA"), Texas. Since 1967, EDF has linked science, economics, and law to create innovative, equitable, and cost-effective solutions to urgent environmental problems. EDF and its members are deeply concerned about harmful air pollution, including ground-level ozone pollution in the San Antonio area.

I. Introduction

On October 1, 2015, the Environmental Protection Agency ("EPA") finalized revised ground-level ozone standards at a level of 70 parts per billion (ppb).[1] EPA established standards at the upper end of the range recommended by the agency's independent Clean Air Scientific Advisory Committee based on extensive evidence documenting adverse scientific effects at (and below) the 70 ppb level. The science on the health impacts of ozone pollution is well-established and these health-based standards save lives and protect American families.

After strengthening the ozone NAAQS, EPA was required to move forward with the implementation process by determining those areas that meet or exceed the revised standard. These area designations provide communities impacted by harmful ozone pollution with transparent air quality information and also enable state air quality managers to begin developing approaches to restore healthy air.

[1] EPA, *National Ambient Air Quality Standards for Ozone,* 80 Fed. Reg. 65,292 (October 26, 2015) ("2015 standards").

The Clean Air Act ("CAA") required that the agency promulgate these final area designations for the 2015 standards for all areas of the country by October 1, 2017, two years from the date of EPA's revision.[2] As provided by the statute, most states submitted initial area designation recommendations to EPA in the fall of 2016 "not later than 1 year after promulgation of a . . . revised national ambient air quality standard."[3] EPA, however, failed to "expeditiously" promulgate final designations within one year thereafter, by the statutorily required deadline of October 1, 2017.[4] The agency continues to be in violation of this mandatory duty and each day EPA fails to complete the designations process has significant nationwide public health consequences.

Accordingly, and in line with the agency's statutory obligation to protect public health, we urge EPA to expeditiously finalize nonattainment designations for the entire San Antonio-New Braunfels CBSA ("San Antonio area") including the counties of Atascosa, Bandera, Bexar, Comal, Guadalupe, Kendall, Medina, and Wilson.[5]

II. An Extensive Body of Scientific Evidence Demonstrates that Ozone Pollution Harms Human Health.

Ground-level ozone, a component of urban smog, is a harmful air pollutant that irritates the lungs, exacerbates lung conditions like asthma, and is linked to a wide-array of serious heart and lung diseases. Scientific evidence spanning several decades shows that human exposure to ozone can cause a broad range of respiratory effects, including inflammation of the airways, asthma attacks, chronic obstructive pulmonary disease ("COPD"), and other pathologies that can lead to increased use of medication, school absences, hospital admissions, and emergency room visits.[6]

Ozone pollution is particularly harmful for sensitive populations including children, seniors, people with lung impairments like asthma, COPD, lung cancer, and cardiovascular disease, and anyone active outdoors. Exposure to ozone causes a multitude of short-term and long-term health impacts, ranging from shortness of breath and coughing, to increased risk of premature death. EPA has estimated that the 2015 ozone standard will save hundreds of lives, prevent 230,000 asthma attacks in children, and prevent 160,000 missed school days for children each year.[7]

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[2] 42 U.S.C § 7407(d)(1)(B)(i) ("Upon promulgation or revision of a national ambient air quality standard, the Administrator shall promulgate the designations of all areas . . . as expeditiously as practicable, but in no case later than 2 years from the date of promulgation of the new or revised national ambient air quality standard.").

[3] *Id*. at § 7407(d)(1)(A); *See e.g.*, EPA, Ozone Standards, State Recommendations, *available at* https://www.epa.gov/ozone-designations/2015-ozone-standards-state-recommendations. However, the state of Maryland submitted recommendations in early 2017. *See* https://www.epa.gov/sites/production/files/2017-05/documents/md_recommendations.pdf.

[4] 42 U.S.C § 7407(d)(1)(B)(i).

[5] EPA is required to finalize designations for the eight counties in the San Antonio area by July 17, 2018. Order of U.S. District Court for the Northern District of California. Case 4:17-cv-06936-HSG, March 12, 2018.

[6] EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, Executive Summary (2013), *available at* https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants (last visited Apr. 27, 2018).

[7] EPA, *Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone*, EPA-452/R-15-007, at ES-16, tbl.ES-6 (2015).

Between 2008 and 2015, there were more than 1,000 new studies that demonstrate the health and environmental harms of ozone.[8] In particular, EPA concluded:

> Scientific evidence shows that ozone can cause a number of harmful effects on the respiratory system, including difficulty breathing and inflammation of the airways. For people with lung diseases such as asthma and COPD (chronic obstructive pulmonary disease), these effects can aggravate their diseases, leading to increased medication use, emergency room visits and hospital admissions.
>
> Evidence also indicates that long-term exposure to ozone is likely to be one of many causes of asthma development. In addition, studies show that ozone exposure is likely to cause premature death.[9]

More recent evidence from studies published within the last year further solidifies the link between ozone exposure and an increased risk of death. The studies assessed ozone impacts in 61 million Medicare beneficiaries across 13 years in the United States and found that the associated risk of death continued below the current 8-hour NAAQS standard of 70ppb.[10] The authors of this landmark study concluded that there was no threshold of the effect seen and that it would be hard to justify any level of exposure as safe.[11] Another study found that long-term seasonal ozone was also associated with premature mortality and that reduction of just 5ppb of summertime average ozone across the country would save 9,537 lives per year.[12]

The scientific and technical analyses reflected in EPA's 2015 ozone standards also underscore that the risk of these harmful health effects is even more pronounced for people with asthma and other respiratory diseases, children, older adults, people who work or are active outdoors. An estimated 23 million people have asthma in the U.S., including almost 6.1 million children.[13] Asthma disproportionately impacts communities of color and lower-income communities.[14] Implementing the strengthened ozone health standards will help improve air quality in these and all communities across the country.

Children, in particular, are considered the most at-risk group because they breathe more air per unit of body weight, are more active outdoors, are more likely to have asthma than adults, and are still developing their lungs and other organs. In fact, EPA's Children's Health Protection Advisory Committee—a body of external experts that provide the Administrator with recommendations

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[8] EPA, Fact Sheet, *Overview of EPA's Updates to the Air Quality Standards for Ground-Level Ozone* ("2015 Ozone Standard Fact Sheet"), *available at* https://www.epa.gov/sites/production/files/2015-10/documents/overview_of_2015_rule.pdf; *see also* EPA, Integrated Science Assessment for Ozone and Related Photochemical Oxidants, Final Report (Feb. 2013), *available at* http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=247492#Download.

[9] 2015 Ozone Standard Fact Sheet.

[10] Di Q, Dai L, Wang Y, Zanobetti A, Choirat C, Schwartz JD, Dominici F., *Association of Short-term Exposure to Air Pollution With Mortality in Older Adults*, 318 JAMA 2446–2456 (2017), doi:10.1001/jama.2017.17923

[11] *Id.*

[12] Di, Q., Wang, Y., Zanobetti, A., Wang, Y., Koutrakis, P., Choirat, C., Dominici, F. and Schwartz, J.D., *Air pollution and mortality in the Medicare population*. 376 NEW ENGLAND J. OF MED., 2513-2522 (2017), *available at* http://www.nejm.org/doi/full/10.1056/NEJMoa1702747.

[13] 2015 Ozone Standard Fact Sheet.

[14] *Id.*

concerning children's health—recommended a substantially stronger standard to protect the health of children. CHPAC found that "[c]hildren suffer a disproportionate burden of ozone-related health impacts due to critical developmental periods of lung growth in childhood and adolescence that can result in permanent disability."[15]

A recent report by the American Lung Association, State of the Air 2018, detailed the number of individuals from these sensitive populations living in the San Antonio area. Among other sensitive groups, the report estimated that over 58,767 children suffering from pediatric asthma and 168,266 adults suffering from asthma live in the eight counties in the San Antonio Area.[16] Over 109,113 individuals suffering from COPD, 171,929 individuals suffering from cardiovascular disease and 1,524 suffering from lung cancer also live within those eight countries. The report ranked the San Antonio-New Braunfels area number 27 for high ozone days out of 227 metropolitan areas.[17]

County	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Children Under 18	Adults 65 & Over	Poverty Estimate
Atascosa, TX	1,064	2,733	1,832	25	2,927	4,245	13,455	7,039	7,867
Bandera, TX	288	1,448	1,173	11	1,970	2,841	3,641	5,667	3,138
Bexar, TX	49,195	138,729	88,399	1,283	138,629	202,153	621,691	308,781	359,234
Comal, TX	2,431	8,134	5,907	71	9,581	14,010	30,725	24,440	11,496
Guadalupe, TX	3,152	8,888	5,871	82	9,253	13,599	39,836	21,054	15,051
Kendall, TX	784	2,565	1,905	22	3,131	4,526	9,915	8,388	3,119
Medina, TX	919	2,924	2,029	26	3,253	4,755	11,619	7,946	6,746
Wilson, TX	934	2,845	1,997	25	3,185	4,713	11,807	7,612	4,958
totals	**58,767**	**168,266**	**109,113**	**1,545**	**171,929**	**250,842**	**742,689**	**390,927**	**411,609**

Source: *American Lung Association State of the Air 2018*, (April, 2018) *available at* http://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2018-full.pdf.

III. EPA Must Designate Bexar County as a Nonattainment Area.

Section 107(d)(1) of the Clean Air Act requires EPA to designate as nonattainment "any area that does not meet" the NAAQS along with any area that "contributes to ambient air quality in a nearby area that does not meet" the NAAQS.[18] Bexar County monitors demonstrate that the area does not meet the 2015 ozone NAAQS and so must be designated as nonattainment.

A violating area is one that contains a regulatory monitor that shows a violation of the NAAQS.[19] Bexar County contains two regulatory monitors that violate the 2015 ozone NAAQS of 70 ppb. The Camp Bullis monitor, which has a design value of 73 ppb, and the Northwest monitor, which

[15] Letter from Sheela Sathyanarayana MD MPH, Chair, Children's Health Protection Advisory Committee to Christopher Frey PhD, CASAC Review of the Health Risk and Exposure Assessment for Ozone and Policy Assessment for the Review of the Ozone NAAQS: Second External Review Drafts, (May 19, 2014), *available at* https://www.epa.gov/sites/production/files/2014-12/documents/2014.05.19_chpac_ozone_naaqs.pdf.

[16] American Lung Association, *State of the Air 2018* (April, 2018) *available at* http://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2018-full.pdf.

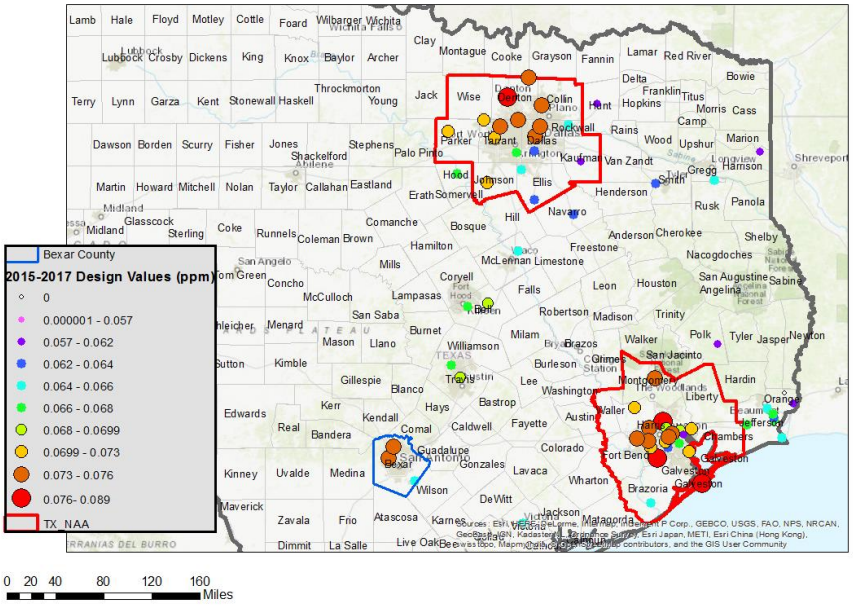
[17] *Id.*, San Antonio-New Braunfels, TX page *available at* http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/texas/bexar.html.

[18] 42 U.S.C. § 7407(d)(1)(A); *See also* EPA, *Texas: San Antonio Intended Area Designations for the 2015 Ozone National Ambient Air Quality Standards (NAAQS) Technical Support Document* (hereinafter "EPA TSD") at 2.

[19] Memorandum from Janet G. McCabe to Regional Administrators re: "Area Designations for the 2015 Ozone National Ambient Air Quality Standards," (Feb. 25, 2015) (hereinafter "2015 Guidance"), *available at* https://www.epa.gov/ozone-designations/epa-guidance-area-designations-2015-ozone-naaqs.

also has a design value of 73 ppb, based on data from 2014-2016. Monitored data from 2015-2017 also demonstrates violations at these two monitors, as depicted below.[20]

2015-2017 design values TX



Accordingly, under the plain language of the CAA, EPA must designate Bexar County in as nonattainment with the 2015 standard.

Despite the clear and reliable data demonstrating that Bexar County is in violation of the 2015 standard, Texas has recommended that EPA designate the county as in attainment.[21] EPA's response to Texas on March 19, 2018, indicates that the agency plans to "modify" the state's recommended designation, but does not state precisely how.[22] While EPA is not clear about whether it plans to finalize a nonattainment or unclassifiable designation, the only permissible pathway is for the agency is to designate Bexar County as in nonattainment.

Indeed, there is no basis for an unclassifiable designation for Bexar County. As EPA points out in its TSD, Bexar has 2 violating monitors.[23] Texas has failed to provide any monitored data to the contrary. Rather, Texas submitted information from non-regulatory monitors in the San Antonio Metropolitan Area showing design values below the 2015 standard and results of modeling predicting that under certain scenarios, Bexar County may attain the standard in the future. Neither of these sources of information in any way alters the Clean Air Act requirement that areas with

[20] Figure based on EPA design values from 2015-2016, *available at*: https://www.epa.gov/air-trends/air-quality-design-values, and monitor data from which 2017 design values were calculated, *available at* https://www.epa.gov/outdoor-air-quality-data/download-daily-data.
[21] TX Gov. Greg Abbott, Letter to EPA re: Ozone Designation for the San Antonio Metropolitan Area, EPA-HQ-OAR-2017-0548 (Feb. 28, 2018) (hereinafter TX Designation Letter") at 1.
[22] EPA Regional Adm. Anne L. Idsal, Letter to TX Gov. Greg Abbott re: recommendations for the 2015 ozone NAAQS for the San Antonio area (Mar. 19, 2018) (hereinafter "EPA Response to TX").
[23] EPA TSD at 6.

violating regulatory monitors must be designated as nonattainment, nor in any way supports a designation other than nonattainment for Bexar County.

First, as EPA acknowledges in its TSD, it must consider data from monitors that meet EPA quality assurance criteria when making area designations (i.e., regulatory monitors).[24] Texas has only provided information from non-regulatory monitors. EPA cannot rely on such information as a basis for an attainment or unclassifiable designation for Bexar County when data from regulatory monitors unequivocally demonstrates that the county is in violation of the 2015 ozone NAAQS. Even assuming the rigor of values produced by non-regulatory monitors (which EPA has, in the past, declined to recognize), it is often the case that nonattainment areas have some monitors that show violations of the standards and others that do not.

Second, there is no legal basis for Texas's request that EPA rely on estimates of when Bexar County will come into compliance with the 2015 ozone standard rather than relying on monitored data that shows current nonattainment. EPA regulations and guidance specify the criteria EPA must rely on when making NAAQS area designations; modeling to demonstrate future attainment is not one of them. Indeed, the Clean Air Act makes plain that the consideration of future attainment is not a permissible consideration in making initial area designations as the Act sets forth a separate, detailed process by which states can request that the Administrator reclassify an area based on improved air quality.[25] Texas's speculative predictions about future attainment provide no legal basis for removing protections that the Clean Air Act guarantees for communities facing unhealthy levels of smog pollution.

Moreover, even if modeling could supersede data from regulatory air monitors showing nonattainment, which it plainly cannot, Texas's modeling does not support an unclassifiable or attainment designation for any part of Bexar County. The model predicts that Bexar County *will violate* the 2015 standard in 2020 using one set of inputs: ambient data from 2010-2014 and a 2012 base modeling year.[26] The model also notes that Bexar County contributes 8-9 ppb of ozone on high ozone days which accounts for 83% of the San Antonio area contribution to predicted peak ozone values.[27] Even Texas's own model demonstrates that Bexar County currently violates the 2015 standard, that the county is likely to continue violating the 2015 ozone NAAQS in future years, and that the county is responsible for a significant amount of the ozone pollution in the greater metro area.

Additionally, EPA's suggestion that Bexar County, or portions of the county, could be classified as "at best, Unclassifiable" has no basis in the law.[28] Unclassifiable determinations are only appropriate where an area "cannot be classified on the basis of available information as meeting

[24] EPA TSD at 7.
[25] CAA Section 107(d)(3) lays out the requirements for redesignation. 42 U.S.C. § 7407(d)(3). The EPA may not approve such a request unless 1) the Administrator determines that the area has attained the NAAQS; 2) the Administrator has fully approved the applicable state implementation plan; 3) the Administrator determines that the improvement in air quality is due to *permanent and enforceable reductions in emissions*; 4) the Administrator has fully approved a maintenance plan for the area; and 5) the state has meet all of the applicable requirements under CAA section 110. *Id.* at § 7407(d)(3)(E).
[26] TX Designation Letter at 4-5.
[27] EPA TSD, at 21.
[28] EPA Response to TX at 2.

or not meeting" the NAAQS.[29] EPA has ample available data plainly showing that Bexar County is not meeting 2015 standard, therefore an unclassifiable designation is unlawful.[30] Accordingly, EPA must designate Bexar County as in nonattainment with the 2015 ozone NAAQS as the area is home to two violating monitors.

IV. EPA Must Designate the Entire San Antonio-New Braunfels CBSA as in Nonattainment Because All Seven Surrounding Counties Contribute to Nonattainment in Bexar County.

EPA's intended "attainment/unclassifiable" designation for the seven counties surrounding Bexar County runs contrary to evidence in the San Antonio TSD which demonstrates that the other counties within the CBSA contribute to nonattainment in Bexar County. Section 107(d)(1) of the Clean Air Act requires EPA to designate as in nonattainment areas that contribute to a violation of the NAAQS in a nearby area,[31] and EPA acknowledges this clear requirement in the TSD.[32] EPA has consistently interpreted "contribute" to mean those areas and sources that "sufficiently contribute" to nonattainment.[33] "Because ozone and its precursor emissions are pervasive and readily transported," EPA has previously determined that it is appropriate to "examine ozone-contributing emissions across a relatively broad geographic area associated with the monitored violation."[34]

EPA relies on a five-factor, weight of the evidence analysis to determine whether areas are contributing to a violation in a nearby area. Specifically, EPA analyzes the following factors when determining whether an area contributes to a violation of the NAAQS in a nearby area:

(1) Air quality data at monitors
(2) Emissions and emissions-related data, including location of sources, population, amounts of emissions, and urban growth patterns
(3) Meteorology
(4) Geography/topography
(5) Jurisdictional boundaries.

Under this approach, EPA may designate as in nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations.[35]

Information in the TSD regarding emissions data and jurisdictional boundaries demonstrate that all other counties within the San Antonio-New Braunfels CBSA—Atascosa, Bandera, Comal,

[29] 42 U.S.C. § 7407(d)(1)(A)(iii).
[30] In addition to violating the plain terms of CAA section 107(d), disregarding available monitoring data in order to find the area "unclassifiable" would be arbitrary and capricious.
[31] 42 U.S.C. § 7407(d)(1).
[32] EPA TSD at 2 ("EPA required to designate as nonattainment the areas with the monitors that are violating the 2015 ozone NAAQS and nearby areas with emissions sources (i.e., stationary, mobile, and/or area sources) that contribute to the violations.")
[33] *Catawba County v. EPA*, 571 F.3d 20, 38-39, 41 (D.C. Cir. 2009).
[34] 2015 Guidance at 5.
[35] *See Catawba Cnty.*, 571 F.3d at 39.

Guadalupe, Kendall, Medina, and Wilson—contribute to violations of the ozone NAAQS in Bexar County. EPA must rely on this data to expand the nonattainment boundary to include the entire San Antonio CBSA.

A. Emissions Data

The available emissions data weigh in favor of using the CBSA as the nonattainment area boundary and demonstrate that a considerable amount of ozone-forming emissions come from sources outside Bexar County. Significant emissions of oxides of nitrogen (NOx) and volatile organic compounds ("VOC") are emitted from counties in the CBSA other than Bexar. As demonstrated in EPA's TSD, total NOx emissions in the San Antonio-New Braunfels CBSA equal 64,021 tpy and total VOC emissions equal 62,750 tpy.[36] The seven counties other than Bexar within the CBSA are responsible for over one-third of the total VOC emissions (27,639 tpy) in the CBSA. These counties are also responsible for over one-third of the total NOx emissions in the CBSA (25,927 tpy).

While EPA is not required to match nonattainment boundaries to jurisdictional boundaries, in the past EPA has determined that it is reasonable to use the CBSA boundary as the starting point for the nonattainment boundary and then apply other factors. As EPA stated in its 2016 guidance for the 2015 standard and in its December 2017 TSD for the area designations for the rest of the state of Texas, "using the Core Based Statistical Area (CBSA) or Combined Statistical Area (CSA) as a starting point for the contribution analysis is a reasonable approach to ensure that the nearby areas most likely to contribute to a violating area are evaluated."[37] Likewise, EPA has consistently applied this approach in examining contributions for nonattainment area boundaries in other areas of the state.[38] In the Dallas/Fort Worth area, EPA used the CBSA boundaries as a starting point for application of the relevant factors, and ultimately included almost every county in the CBSA boundaries in the nonattainment area, finding most counties to be an "integral part" of the core urban area or to be "contributing area and mobile source NOx and VOC emissions to nearby violating monitors."[39] It would be arbitrary for EPA to inconsistently apply these factors across regions of the country or to areas within the same state.[40]

B. Population growth patterns and mobile source data

Population density and the degree of urbanization is also an element of the available emissions data and a factor that weighs in favor of designating the entire CBSA as in nonattainment. As EPA recognizes, "[T]he presence of large populations and high population density is an indicator of high area and mobile source emissions of ozone precursors that may contribute to observed

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[36] EPA TSD at 10, Table 2.

[37] EPA, State of Texas Intended Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document, 1 (Dec 22, 2017) ("EPA TX TSD"), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/tx_120d_tsd_12_22_17final.pdf.

[38] *Id.* at 32 (examining contributions within the CBSA in the Dallas Fort Worth area).

[39] *Id*. (The "following counties be included as part of the Dallas/Fort Worth nonattainment area because they have air quality monitors that indicate a violation of the 2015 ozone NAAQS and/or because they are contributing to a violation in a nearby area: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties. These are the same counties that were designated as nonattainment for the 2008 ozone NAAQS.") (emphasis added).

[40] *See e.g., Catawba Cty. v. EPA*, 571 F.3d 20, 52 (remanding EPA's nonattainment designation for Rockland County for "apparent inconsistency in EPA's approach" across regions).

violations of the 2015 ozone NAAQS in this area."[41] Three counties in the CBSA are growing at a rate higher than Bexar, and higher than the entire CBSA. Kendall County experienced the largest growth in population between 2010 and 2015, experiencing a 21% increase in population. Comal County experienced the second highest growth in population over that time period with a 19% increase. Guadalupe County's population rose by 15%.[42] In comparison, Bexar County's population only increased by 11%—the same amount as Wilson's population.[43] The degree of urbanization in counties other than Bexar and within the CBSA weigh in favor of including the entire CBSA in the nonattainment designation.

Similarly, traffic and commuting patterns in the CBSA indicate that motor vehicle emissions from counties other than Bexar are contributing to violations in Bexar. Over 40% of workers in three counties (Wilson, Kendall and Medina) commute to Bexar, thereby contributing mobile ozone precursor emissions to the regional airshed. Over 30% of workers in Comal, Guadalupe, Atascosa and Bandera, the remaining other four counties in the CBSA, also commute to Bexar, contributing significant mobile emissions that likely contribute to the degraded air quality recorded at monitors in Bexar County.[44] Further, five counties in the CBSA—Comal, Guadalupe, Atascosa, Medina, and Wilson experienced a higher percentage of growth in vehicle miles traveled between 2008 and 2014 than Bexar County. The percent increase of vehicle miles traveled in Comal and Guadalupe counties was approximately twice as much as in Bexar County, while Atascosa and Wilson experienced a growth rate in vehicle miles traveled that was nearly four times as high as that experienced in Bexar.[45] These data further demonstrate the likelihood that ozone-contributing emissions from areas outside Bexar contribute to violations of the 2015 standard at Bexar County monitors.

EPA typically examines population growth and "commuter traffic contribution" in setting proposed nonattainment area boundaries, and the agency applied this standard practice to the rest of the state of Texas in its December 2017 TSD.[46] For example, in setting nonattainment boundaries for the Dallas/Fort Worth area, EPA examined the contribution from counties without violating monitors where a large percentage of the population commuted into a country in the same CBSA with a violating monitor.[47] Likewise, here, an examination of "population growth and commuter traffic contribution" demonstrates that the seven other counties in the San Antonio area are an "integral part of the urban area" of Bexar County and are contributing to nonattainment violations.[48]

C. Jurisdictional boundaries

Jurisdictional data also weighs in favor of expanding the nonattainment boundary beyond just Bexar County. As EPA recognizes, Bexar, Comal, Wilson, and Guadalupe were the subject of an Early Action Compact in 2002.[49] Additionally, the Air Improvement Resources Executive

[41] EPA TSD at 13.
[42] *Id*. at 12.
[43] *Id*.
[44] *Id*. at 14, Table 4.
[45] EPA TSD at 14, Table 4.
[46] EPA TX TSD.
[47] *Id*. at 32.
[48] *Id*.
[49] EPA TSD at 20.

Committee recently recognized that "the influence of transported pollution from beyond the San Antonio-New Braunfels region which current analysis shows to be responsible on average for 68% of the peak 1-hour high ozone on high ozone days recorded at local regulatory monitors in Bexar County."[50] The Air Improvement Resources Executive Committee is tasked with ensuring that the San Antonio-New Braunfels MSA attains the ozone NAAQS including determining what emission reductions are necessary to do so.

Accordingly, upon consideration of the factors mentioned above, we urge EPA to expand the nonattainment boundary to include, at least, the entire San Antonio-New Braunfels CBSA. Such a boundary would be consistent with EPA's longstanding practice of using CBSA's as the starting point for analyzing potential contributions to NAAQS violations.[51] It would also ensure that all residents of the CBSA, including those that live outside Bexar, but within the same regional airshed, receive the same vital Clean Air Act protections as those that reside in Bexar.

V. The San Antonio Nonattainment Area Boundaries Should Extend Beyond the Eight Counties in the CBSA to Include Sources in the Eagle Ford Shale, Where Oil and Gas Operations Contribute to Nonattainment in the San Antonio Area.

EPA should expand the nonattainment area boundary beyond the CBSA because nearby sources in the Eagle Ford shale are "sufficiently" contributing to nonattainment in the San Antonio Area. EPA has long recognized that sources beyond the jurisdictional boundaries of nonattainment areas may be designated as nonattainment based on sufficient contribution.[52] Using the same contribution factors described above, oil and gas development in the Eagle Ford shale is likely contributing to nonattainment in the San Antonio area. Existing emissions data, including data from the over 28,000 oil and gas facilities located in the nearby Eagle Ford shale,[53] as well as meteorological data, shows that areas of the Eagle Ford shale outside of Bexar are contributing to deteriorated air quality in the San Antonio area, and therefore must be designated as part of the nonattainment area. In 2016, EDF submitted much of this data to the TCEQ, and we have re-attached this information to these comments for EPA's consideration.[54]

Specifically, 2012 inventory data prepared by the Alamo Area Council of Governments ("AACOG") demonstrates that oil and gas facilities in the Eagle Ford shale contributed 121 tons of NOx and 223 tons of VOCs per ozone season day in 2012.[55] The magnitude of ozone precursor emissions from the Eagle Ford shale are likely much larger today as significant development

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[50] Air Improvement Resources Mission Statement for Developing Air Quality Control Strategies, December 9, 2015.
[51] 2015 Guidance at 5; Dec. 4, 2008 Guidance from Robert J. Meyers to Regional Administrators re: "Area Designations for the 2008 Ozone National Ambient Air Quality Standards," (hereinafter "2008 Guidance"), available at https://www.mwcog.org/uploads/committee-documents/al5cX1ZY20090210140249.pdf.
[52] *Catawba Cty*, 571 F.3d at 41-43.
[53] EDF data obtained from *Drilling Info* in January 2018.
[54] Letter from Colin Leyden, Envt'l Defense Fund, to Kristin Patton, Tex. Comm'n on Envt'l Quality, 6 (Apr. 15, 2016) (hereinafter "EDF Letter"), *available at* https://www.tceq.texas.gov/assets/public/implementation/air/sip/ozone/2015Designations/2015OzoneDesignationRec_PublicComments%20Received.pdf (citing Alamo Area Council of Gov'ts, *Technical Report, Oil & Gas Emission Inventory Update, Eagle Ford Shale* (Oct. 20, 2015) (*available at* http://www.aacog.com/DocumentCenter/View/34710)).
[55] *Id.*

continues, with minimal state or federal controls applied to these sources. Indeed, modeling prepared by AACOG in 2015 predicted that in 2018 "emissions could grow to as much as 689 tons of VOCs per ozone season day under the low development scenario" while NOx emissions were also predicted to increase to 219 tons per day under the low development scenario.[56] AACOG predicted even greater emissions increases under a moderate or high development scenario.[57] It is worth noting that inventories consistently underestimate actual emissions.[58]

More recent analysis performed by the University of Texas at Austin (commissioned by TCEQ) found elevated hydrocarbon concentrations at a non-regulatory monitor in Karnes County indicating a high likelihood of oil and gas emissions. Per this analysis, hydrocarbon concentrations in this part of the Eagle Ford shale were twice as high as any other monitor in the state.[59] As described above, EPA must consider the impact of emissions from sources located outside of Bexar County in determining the bounds of the San Antonio nonattainment area—this includes consideration of contributions from more than 28,000 oil and gas facilities in the Eagle Ford shale.

Meteorological data also strongly suggests emissions from oil and gas development in the Eagle Ford shale contribute to unhealthy air quality in the San Antonio area. Modeling conducted by AACOG and the University of Texas demonstrates that oil and gas emissions from the Eagle Ford shale have the potential to contribute to elevated ozone concentrations at regulatory monitors in Bexar County. Specifically, 2013 modeling prepared by AACOG predicted that emissions from projected 2018 oil and gas activities could result in maximum changes in 8-hour average ozone concentrations in Bexar County ranging from 1.8ppb to 7.8 ppb, or as much as 10% of ozone levels in San Antonio, depending on the anticipated level of activity in the Eagle Ford: low, medium or high.[60]

EPA has consistently taken the approach that modeled impacts greater than 1% of the standard should be considered the threshold for significance in determining whether an area "contributes" to nonattainment.[61] For example, EPA has applied the 1% threshold across NAAQS for ozone and PM and pointed to the importance of this threshold in the Cross State Air Pollution Rule.[62] Importantly, EPA also relied on this contribution threshold elsewhere in the proposed nonattainment designations for the 2015 ozone NAAQS.[63] As the U.S. Court of Appeals for the D.C. Circuit recognized in *Catawba County*, it would be arbitrary and capricious for EPA to

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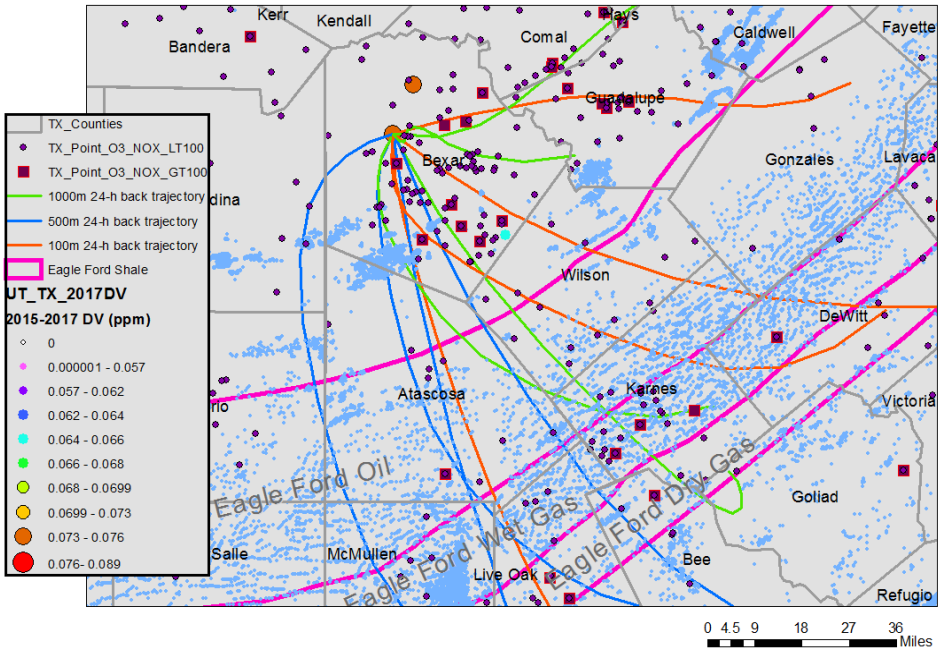
[56] EDF Letter, at 6.
[57] *Id.*
[58] Robert Harriss, et al., *Using Multi-Scale Measurements to Improve Methane Emissions Estimates from Oil and Gas Operations in the Barnett Shale Region, Tex.*, ENVIRON. SCI. TECHNOL. 49, 7524-7526 (July 7, 2015) *available at* http://pubs.acs.org/doi/10.1021/acs.est.5b02305.
[59] *Id.* at 7.
[60] *Id.* at 8.
[61] 42 U.S.C. § 7407(d)(1)(A)(i).
[62] *See* EPA, Cross State Air Pollution Rule, 76 Fed. Reg. 80,760 (Dec. 27, 2011).
[63] *See e.g.*, EPA, State of Texas Intended Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document, 1 (2015) ("EPA TX TSD"), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/tx_120d_tsd_12_22_17final.pdf. *See also*., EPA, Dallas-Fort Worth, Texas Final Area Designations for the 2008 Ozone National Ambient Air Quality Standards, 23 (2008) ("2008 TX TSD"), *available at* https://archive.epa.gov/ozonedesignations/web/pdf/r6_dfw_tsd_final.pdf. EPA also likely applied this threshold in other regions for the 2015 ozone area designations.

unevenly apply contribution thresholds across area designations, resulting in "apparent inconsistency in EPA's approach to designations in different EPA regions."[64]

Modeling prepared by the University of Texas is in accord, finding that 2012 levels of Eagle Ford shale emissions accounted for up to 2.5 ppb ozone in Bexar County.[65]

Likewise, in February, EDF ran HYSPLIT back trajectories to determine the paths an air parcel would have travelled before reaching the violating monitors in Bexar County. The results of this analysis also suggest that high emitting point sources in Guadalupe and Comal counties in the Eagle-Ford Shale may be contributing to the violations in Bexar County.

Spatial distribution of oil and gas wells (blue dots) – Eagle Ford



VI. EPA Should Expand Monitoring Networks and Require Ozone Monitors Near Oil and Gas Development, Including in the Eagle Ford Shale and in the Counties Surrounding Bexar County.

The oil and natural gas sector is a significant source of pollutants that contribute to unhealthy air pollution and ground-level ozone formation in many areas around the country, including the San Antonio area and the Eagle Ford shale, described above.

The oil and gas sector emits significant amounts of VOC and NOx emissions, and those emissions are linked to harmful levels of ozone pollution. Studies have confirmed that the oil and gas sector

[64] *Catawba Cty. v. EPA*, 571 F.3d at 52 (remanding EPA's nonattainment designation for Rockland County to "give EPA another opportunity to provide a coherent explanation for its designation.")
[65] *Supra* n. 58, Robert Harriss, et al., at 9.

is a significant (and often underestimated) contributor to VOC emissions and contributes significantly to ozone formation. A 2018 analysis by EDF estimated over 50,000 tons of annual VOC emissions from the upstream oil and natural gas sector in Pennsylvania—more than nine times greater than reflected in the state inventory of unconventional wells.[66] And a recent peer-reviewed publication from the Cooperative Institute for Research in Environmental Sciences examined the oil and gas sector's contribution to ozone formation on Colorado's Front Range, focusing specifically on days that exceeded the ozone NAAQS. The study found that, on individual days, oil and gas ozone precursors could contribute in excess of 30 ppb of ozone growth and could be the primary driver of exceedances of the ozone NAAQS in that region.[67] Another study of the Colorado Front Range found that oil and gas VOC emissions contributed approximately 20% to regional ozone production.[68]

Despite the strong link between oil and gas emissions and ozone air quality problems, many areas surrounded by this development lack ozone monitors. While, as is the case for the San Antonio area, contributing areas can often be designated on the basis of other available information, actual data from air quality monitors would provide citizens with clear, transparent and real-time information about the impacts of oil and gas development on air quality in their communities. EPA's ozone monitoring network requirements ensure air quality in large urban areas meets federal NAAQS. As EPA has previously noted, however, that the network design leaves "significant gaps" in ozone monitoring, especially in rural areas in the West and Midwest[69] and additional monitoring would provide an "assessment of population exposure due to elevated ambient O_3 levels in smaller communities located outside of the larger urban [Metropolitan Statistical Areas]."[70] Given the disconnect between oil and gas development and monitoring in rural areas with growing oil and gas operations, on December 19, 2012, EDF and a coalition of other groups, petitioned EPA to require oil and gas owners and operators top monitor for ozone.[71]

Section 114 of the Clean Air Act provides EPA with manifest authority to require owners and operators of oil and gas activities to install and operate ozone monitors, arising from its

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[66] EDF.org, *Pennsylvania Oil and Gas Emissions Data: Air Toxics and Smog-Forming Pollution available at* https://www.edf.org/pa-oil-gas/#/inventory (last visited Apr. 27, 2018). The EDF analysis estimated emissions from Pennsylvania conventional and unconventional oil and gas wells based on active well counts and production data from Drillinginfo and average site emission rates and loss rates reported in Omara et al. 2016, which was based on site-level measurements at 35 well pads in southwestern Pennsylvania and northern West Virginia. EDF.org, *Methodology of Estimating Untracked Emissions available at* https://www.edf.org/energy/methodology-estimating-untracked-emissions (last visited Apr. 27, 2018).

[67] Cheadle, L.C., et al., (2017) "Surface Ozone in the Colorado Northern Front Range and the Influence of Oil and Gas Development During FRAPPE/DISCOVER-AQ in Summer 2014," Elem. Dci. Anth. 5:61. doi:10.1525/elementa.254, *available at* https://www.elementascience.org/articles/10.1525/elementa.254/.

[68] McDuffie, E., et al., (2016) "Influence of Oil and Gas Emissions on Summertime Ozone in the Colorado Northern Front Range," J. Geophys. Res. Atmos., 121, doi:10.1002/2016JD025265, *available at* http://eprints.whiterose.ac.uk/103000/.

[69] EPA, Ambient Ozone Monitoring Regulations: Revisions to Network Design Requirements, 74 Fed. Reg. 34,525, 34,528-530 (July 16, 2009) (proposed rule).

[70] *Id*. at 34,530.

[71] California Kids IAQ et al., Petition For The U.S Environmental Protection Agency To 1) Promptly Require Oil And Gas Owners And Operators To Monitor For Ozone And 2) To Issue Control Techniques Guidelines For Oil And Natural Gas Operations In Non-Attainment Areas (Dec. 19, 2012).

responsibilities under the Clean Air Act to protect air quality, public health, and welfare.[72] Requiring the necessary air monitors would also provide Americans with clear, transparent information about ozone pollution from oil and natural gas operations in their communities to guide their own actions in protecting the environment and their health.

The scarcity of regulatory monitors in the Eagle Ford shale and in the counties in the San Antonio area surrounding Bexar County epitomizes this pressing problem and compelling evidence demonstrates that emissions sources in these areas, including numerous oil and gas facilities, contribute to unhealthy air quality in the San Antonio area. While existing emissions data demonstrates that the counties in the San Antonio CBSA and the Eagle Ford shale should be designated as in nonattainment due to their contribution to air quality in Bexar County, more monitors would reveal the degree to which these counties also suffer from harmful air quality levels locally. We urge EPA to require owners and operators of oil and gas activities to install and operate ozone monitors to better assess emissions from the Eagle Ford shale and to expand the network of emissions monitors in the counties around Bexar.

VII. Conclusion

Thank you for the opportunity to provide comments on EPA's *Response to the Designation Recommendation from Texas for the San Antonio Area for the 2015 Ozone National Ambient Air Quality Standards, ID:* EPA-HQ-OAR-2017-0548-0312. If you have any questions about our submission, please reach out to Rachel Fullmer at rfullmer@edf.org.

Sincerely,

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[72] *See* 42 U.S.C. § 7414(a)(i), (iii), and (1)(C) (EPA can require owners and operators to "install, use, and maintain such monitoring equipment…" as is necessary to assess the impact of oil and gas development on ozone concentrations.).