El Paso, Texas and Doña Ana County, New Mexico

Intended Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document (TSD)

1.0 Summary

This technical support document (TSD) describes the EPA's intent to designate a portion of Doña Ana County, New Mexico, which is located in the El Paso-Las Cruces, TX-NM combined statistical area, as nonattainment for the 2015 ozone National Ambient Air Quality Standards (NAAQS).

On October 1, 2015, the EPA promulgated revised primary and secondary ozone NAAQS (80 FR 65292; October 26, 2015). The EPA strengthened both standards to a level of 0.070 parts per million (ppm). In accordance with Section 107(d) of the Clean Air Act (CAA), whenever the EPA establishes a new or revised NAAQS, the EPA must promulgate designations for all areas of the country for that NAAQS. The EPA must complete this process within 2 years of promulgating the NAAQS, unless the Administrator has insufficient information to make the initial designations decisions in that time frame. In such circumstances, the EPA may take up to 1 additional year to complete the designations.

Under section 107(d), states were required to submit area designation recommendations to the EPA for the 2015 ozone NAAQS no later than 1 year following promulgation of the standards, i.e., by October 1, 2016. Tribes were also invited to submit area designation recommendations. On September 22, 2016 and October 17, 2016, New Mexico submitted its designation recommendations for all areas within New Mexico. For Doña Ana County, New Mexico recommended that the portion of the county identified in column 2 of Table 1 be designated as nonattainment for the 2015 ozone NAAQS based on certified air quality data from 2013-2015, and recommended that the rest of New Mexico be designated as attainment or unclassifiable for the 2015 ozone NAAQS, also based on certified air quality data from 2013-2015. On September 30, 2016, Texas submitted its designation recommendations for all areas within Texas and recommended that El Paso County be designated as nonattainment for the 2015 ozone NAAQS based on certified air quality data from 2013-2015 and recommended that Hudspeth County be designated as attainment for the 2015 ozone NAAQS. On September 27, 2016, however, Texas submitted an Exceptional Event demonstration for air quality data in El Paso. In an updated designation recommendation submitted on August 23, 2017, Texas recommended that El Paso County be designated as attainment, pursuant to the Exceptional Event demonstration submitted in 2016.

The recommendations submitted by Texas and New Mexico requested that the El Paso and Doña Ana Counties be designated as two separate areas. After

considering the States' recommendation and based on EPA's technical analysis as described in this TSD, the EPA intends to designate only the area listed in column 3 of Table 1 as nonattainment for the 2015 ozone NAAQS. The EPA must designate an area nonattainment if it has an air quality monitor that is violating the standard or if it has sources of emissions that are contributing to a violation of the NAAQS in a nearby area. A detailed description of the intended nonattainment boundary for this area is found in the supporting technical analysis in Section 3.

ED_005023_00003759-00001

Table 1. New Mexico's Recommended Nonattainment Areas and the EPA's Intended Nonattainment Areas for the 2015 Ozone NAAQS

Area	States' Recommended Nonattainment Counties	EPA's Intended Nonattainment Counties
Doña Ana County, NM	Doña Ana County (partial)	Doña Ana County(partial)

On November 6, 2017 (82 FR 54232; November 16, 2017), the EPA signed a final rule designating most of the areas the State did not recommend for designation as nonattainment as attainment/unclassifiable.[1] EPA explains in section 2.0 the approach it is now taking to designate the remaining areas in the State.

In its recommendation letter, New Mexico recommended that the EPA designate as "attainment" all other counties in New Mexico, not identified in column 2 of Table 1. The EPA does not intend to modify the State's recommendation and the EPA intends to designate the remainder of New Mexico as attainment/unclassifiable based on the State's recommendation, ambient monitoring data collected during the 2014-2016 period, where available, showing compliance with the 2015 ozone NAAQS, and the EPA's assessment that the area is not contributing to a violation in a nearby area.[2]

On December 15, 2017, the EPA concurred on the Exceptional Event demonstration submitted by Texas for the ozone monitor known as the "UTEP" monitor in El Paso. The documents associated with the demonstration, including the EPA's concurrence letter to Texas, are provided in the docket for this action. Due to the exceptional event determination, the UTEP monitor in El Paso County was found to meet the 2015 ozone NAAQS for the 2014-2016 period. However, because El Paso and Hudspeth Counties are part of the El Paso-Las Cruces, TX-NM that also includes Doña Ana County, we have analyzed below whether El Paso and Hudspeth Counties should be included as part of the nonattainment area based on contribution to the violating monitor in Doña Ana County. With respect to the rest of Texas, the State's recommendations and the EPA's intended designations are provided in a separate TSD, also in the docket for this action.

If any tribal areas are involved, the EPA will designate them in accordance with two guidance documents issued in December 2011 by the EPA Office of Air Quality Planning and Standards titled, "Guidance to Regions for Working with Tribes during the National Ambient Air Quality Standards (NAAQS)) Designations Process,"[3] and "Policy for Establishing Separate Air Quality Designations for Areas of Indian Country."[4]

2.0 Nonattainment Area Analyses and Intended Boundary Determination

---

[1] In previous ozone designations and in the designation guidance for the 2015 ozone NAAQS, the EPA used the designation category label Unclassifiable/Attainment to identify both areas that were monitoring attainment and areas that did not have monitors but for which the EPA had reason to believe were likely attainment and were not contributing to a violation in a nearby area. The EPA is now reversing the order of the label to be Attainment/Unclassifiable so that the category is more clearly distinguished from the separate Unclassifiable category.

[2] While the State recommended "attainment" for certain counties, the EPA uses a designation category of "attainment/unclassifiable" for areas that are monitoring attainment and for areas that do not have monitors but which the EPA believes are likely attainment and do not have emissions sources that are contributing to a violation in a nearby area based on the weight of evidence five factor analysis and other available information.

[3] https://www.epa.gov/sites/production/files/2016-02/documents/ozone-designation-tribes.pdf

[4] https://www.epa.gov/sites/production/files/2016-02/documents/indian-country-separate-area.pdf

ED_005023_00003759-00002

The EPA evaluated and determined the intended boundaries for each nonattainment area on a case-by-case basis, considering the specific facts and circumstances of the area. In accordance with the CAA section 107(d), the EPA intends 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. As described in the EPA's designations guidance for the 2015 NAAQS (hereafter referred to as the "ozone designations guidance"),[5] after identifying each monitor indicating a violation of the ozone NAAQS in an area, the EPA analyzed those nearby areas with emissions potentially contributing to the violating area. The EPA believes that using the Core Based Statistical Area (CBSA) or Combined Statistical Area (CSA)[6] 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. The area-specific analyses may support nonattainment boundaries that are smaller or larger than the CBSA or CSA.

On November 6, 2017, the EPA issued attainment/unclassifiable designations for approximately 85% of the United States and one unclassifiable area designation.[7] At that time, consistent with statements in the designations guidance regarding the scope of the area the EPA would analyze in determining nonattainment boundaries, EPA deferred designation for any counties in the larger of a CSA or CBSA where one or more counties in the CSA or CBSA was violating the standard and any counties with a violating monitor not located in a CSA or CBSA. In addition, the EPA deferred designation for any other counties adjacent to a county with a violating monitor. The EPA also deferred designation for any county that had incomplete monitoring data, any county in the larger of the CSA or CBSA where such a county was located, and any county located adjacent to a county with incomplete monitoring data.

The EPA is proceeding to complete the remaining designations consistent with the designations guidance (and EPA's past practice) regarding the scope of the area EPA would analyze in determining nonattainment boundaries for the ozone NAAQS as outlined above. For those deferred areas where one or more counties violating the ozone NAAQS or with incomplete data are located in a CSA or CBSA, in most cases the technical analysis for the nonattainment area includes any counties in the larger of the relevant CSA or CBSA. For counties with a violating monitor not located in a CSA or CBSA, EPA explains in the 3.0 Technical Analysis section, its decision whether to consider in the five-factor analysis for each area any other adjacent counties for which EPA previously deferred action. We intend to designate all counties not included in five-factor analyses for a specific nonattainment or unclassifiable area analyses, as attainment/unclassifiable. These deferred areas are identified in a separate document entitled "Intended Designations for Deferred Counties and Partial Counties Not Addressed in the Technical Analyses." which is available in the docket. Figures in the remainder of this document used the master legend shown below.

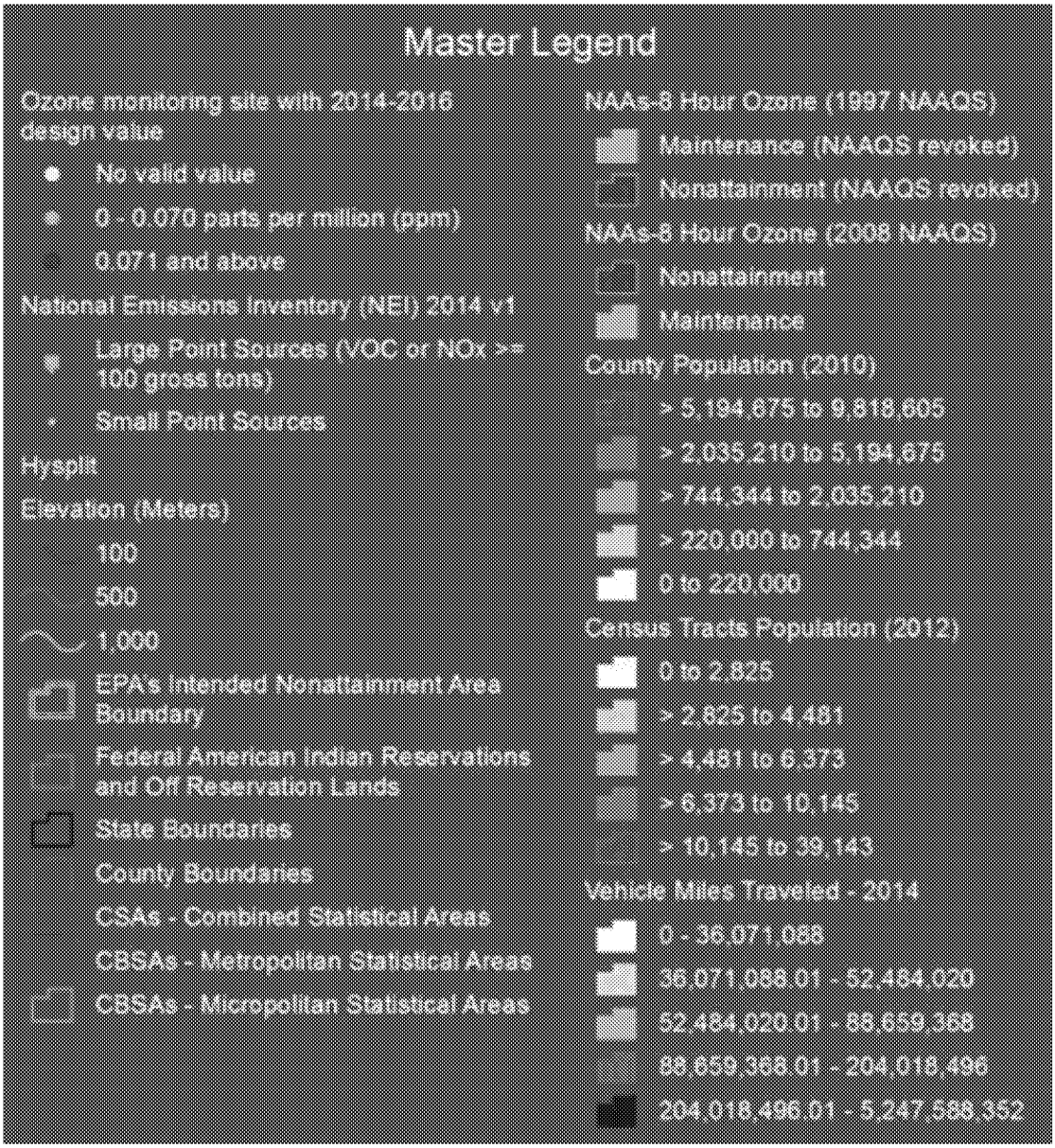
---

[5] The EPA issued guidance on February 25, 2016 that identified important factors that the EPA intends to evaluate in determining appropriate area designations and nonattainment boundaries for the 2015 ozone NAAQS. Available at *https://www.epa.gov/ozone-designations/epa-guidance-area-designations-2015-ozone-naaqs*

[6] Lists of CBSAs and CSAs and their geographic components are provided at www.census.gov/population/www/metroareas/metrodef.html. The Office of Management and Budget (OMB) adopts standards for defining statistical areas. The statistical areas are delineated based on U.S. Census Bureau data. The lists are periodically updated by the OMB. The EPA used the most recent July 2015 update (OMB Bulletin No. 15-01), which is based on application of the 2010 OMB standards to the 2010 Census, 2006-2010 American Community Survey, as well as 2013 Population Estimates Program data.

[7] Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards published on November 16, 2017(82 FR 54232).

ED_005023_00003759-00003



3.0 Technical Analyses for the El Paso-Las Cruces Area TX-NM

This technical analysis identifies the areas with monitors that violate the 2015 ozone NAAQS. It also provides EPA's evaluation of these areas and nearby areas to determine whether those nearby areas have emissions sources that potentially contribute to ambient ozone concentrations at the violating monitors in the area, based on the weight-of-evidence of the five factors recommended in the EPA's ozone designations guidance and any other relevant information. In developing this technical analysis, the EPA used the latest data and information available to the EPA (and to the states and tribes through the Ozone Designations Mapping Tool and the EPA

Ozone Designations Guidance and Data web page).[8] In addition, the EPA considered any additional data or information provided to the EPA by states or tribes.

The Combined Statistical Area (CSA) known as El Paso-Las Cruces, TX-NM is comprised of the Texas counties of El Paso and Hudspeth, and the New Mexico county of Doña Ana. There are two Core Based Statistical Areas (CBSAs) for this area: the El Paso, TX CBSA, which is comprised of El Paso and Hudspeth counties; and the Las Cruces, NM CBSA, which encompasses just Doña Ana County. Doña Ana County has a violating monitor and El Paso County borders the county with a violating monitor. These three counties, which comprise the El Paso-Las Cruces, TX-NM CSA, are shown in Figure 1 below and we refer to these three counties as the area of analysis.

Tribal lands: The Ysleta del Sur Pueblo, a U.S. federally recognized Native American tribe and sovereign nation, has land held in trust in El Paso County. The primary reservation community is located in the cities of El Paso and Socorro, Texas. The community is a mile northeast of the Zaragoza International border between the United States and Mexico, along the Rio Grande. The tribe also has land in the northeast portion of El Paso County. As such, the area of analysis includes tribal lands.

[8] The EPA's Ozone Designations Guidance and Data web page can be found at *https://www.epa.gov/ozone-designations/ozone-designations-guidance-and-data.*

ED_005023_00003759-00005

The five factors recommended in the EPA's ozone designations guidance are:

1. Air Quality Data (including the design value calculated for each Federal Reference Method (FRM) or Federal Equivalent Method (FEM) monitor;
2. Emissions and Emissions-Related Data (including locations of sources, population, amount of emissions, and urban growth patterns);
3. Meteorology (weather/transport patterns);
4. Geography/Topography (including mountain ranges or other physical features that may influence the fate and transport of emissions and ozone concentrations); and
5. Jurisdictional Boundaries (e.g., counties, air districts, existing nonattainment areas, areas of Indian country, Metropolitan Planning Organizations (MPOs)).

Figure 1a below is a map of the EPA's intended nonattainment boundary for the area of analysis. Figure 1a also shows the ambient air quality monitors, the CBSA, CSA, county and other jurisdictional boundaries, and the State of New Mexico's recommended nonattainment area boundaries. Figure 1b below is an enlarged map of the tribal areas within the area of analysis.

Within the area of analysis, El Paso and Southern Doña Ana Counties were separately designated as nonattainment under the 1-hour ozone standard. For purposes of the 1997 and 2008 8-hour ozone NAAQS, the counties within the area of analysis were separately designated as unclassifiable/attainment. The EPA intends to designate a portion of Doña Ana County as nonattainment for the 2015 ozone NAAQS, consistent with New Mexico's recommendation.

ED_005023_00003759-00006

Figure 1a. EPA's Intended Nonattainment Boundary for the Area of Analysis

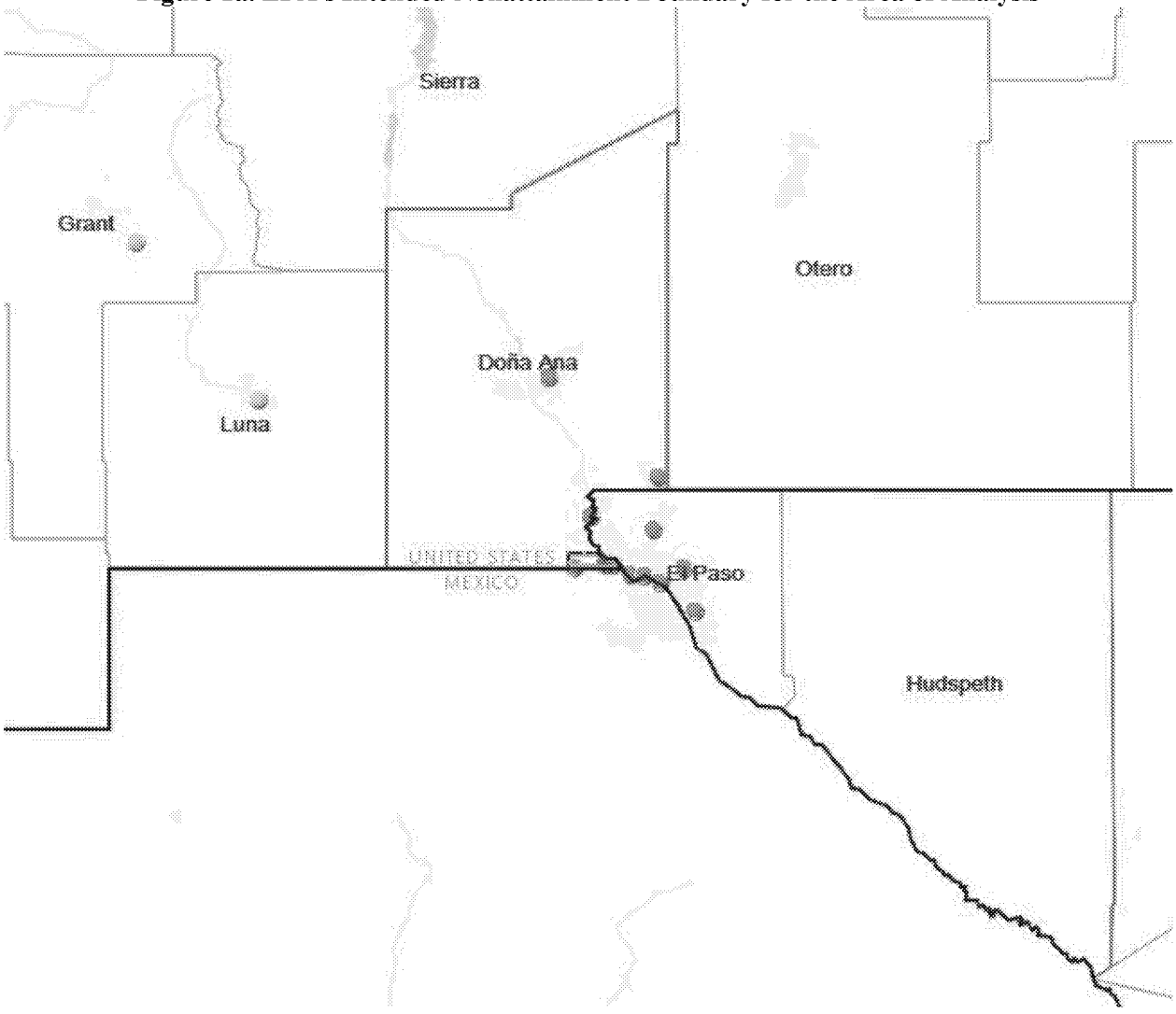
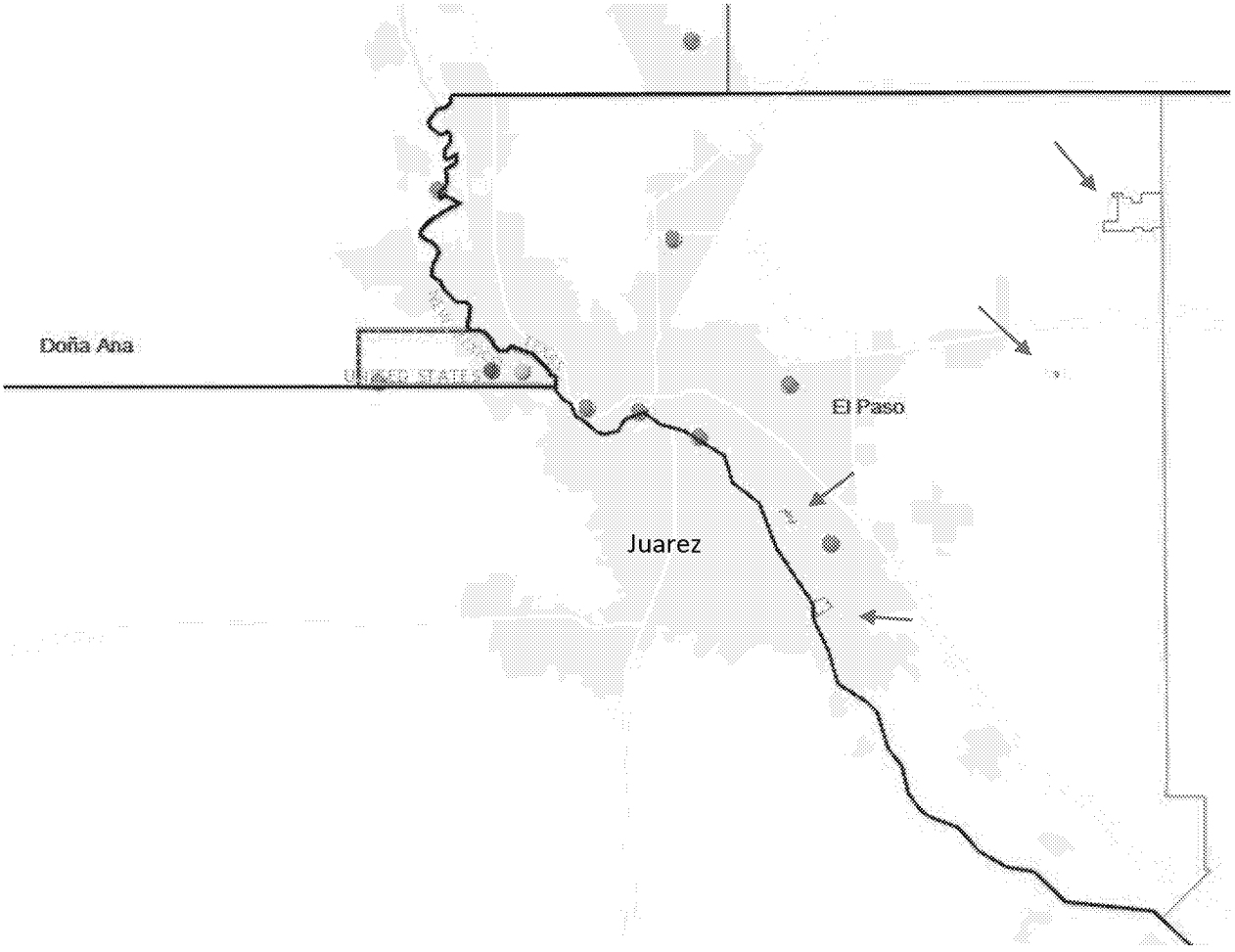


Figure 1b. Enlarged Detail of Figure 1a, Showing Tribal Areas



The EPA must designate as nonattainment any area that violates the NAAQS and any nearby areas that contribute to such violation. Doña Ana County, NM has a monitor in violation of the 2015 ozone NAAQS, therefore Doña Ana County is included in the intended nonattainment area. The following sections describe our five factor weight of evidence analysis. While the factors are presented individually, they are not independent. The five factor analysis process carefully considers the interconnections among the different factors and the dependence of each factor on one or more of the others, such as the interaction between emissions and meteorology for the area being evaluated.

Factor Assessment

Factor 1: Air Quality Data

The EPA considered 8-hour ozone design values in parts per million (ppm) for air quality monitors in the area of analysis based on data for the 2014-2016 period (i.e., the 2016 design value). This is the most recent three-year period with fully-certified air quality data. The design value (DV) is the 3-year average of the annual 4th highest daily maximum 8-hour average ozone concentration.[9] The 2015 NAAQS are met when the DV is 0.070 ppm or

[9] The specific methodology for calculating the ozone design values, including computational formulas and data completeness requirements, is described in 40 CFR part 50, appendix U.

ED_005023_00003759-00008

less. Only ozone measurement data collected in accordance with the quality assurance (QA) requirements using approved (FRM/FEM) monitors are used for NAAQS compliance determinations.[10] The EPA uses FRM/FEM measurement data residing in the EPA's Air Quality System (AQS) database to calculate the ozone DVs. Individual violations of the 2015 ozone NAAQS that the EPA determines have been caused by an exceptional event that meets the administrative and technical criteria in the Exceptional Events Rule[11] are not included in these calculations. When several monitors are located in a county (or designated nonattainment area), the DV for the county or area is determined by the monitor with the highest valid DV. The presence of one or more violating monitors (i.e. monitors with DVs greater than 0.070 ppm) in a county or other geographic area forms the basis for designating that county or area as nonattainment. The remaining four factors are then used as the technical basis for determining the spatial extent of the designated nonattainment area surrounding the violating monitor(s) based on a consideration of what nearby areas are contributing to a violation of the NAAQS.

The EPA identified one monitor where the most recent DV violates the NAAQS, and examined historical ozone air quality measurement data (including previous DVs) to understand the nature of the ozone ambient air quality problem in the area. Eligible monitors for providing DV data generally include State and Local Air Monitoring Stations (SLAMS) that are operated in accordance with 40 CFR part 58, appendix A, C, D and E and operating with an FRM or FEM monitor. These requirements must be met in order to be acceptable for comparison to the 2015 ozone NAAQS for designation purposes. All data from Special Purpose Monitors (SPMs) using an FRM or FEM are eligible for comparison to the NAAQS, subject to the requirements given in the March 28, 2016 Revision to Ambient Monitoring Quality Assurance and Other Requirements Rule (81 FR 17248). There are no SPMs in the area of analysis. The 2014-2016 DVs for the area of analysis is shown in Table 2 below.

[10] The QA requirements for ozone monitoring data are specified in 40 CFR part 58, appendix A. The performance test requirements for candidate FEMs are provided in 40 CFR part 53, subpart B.

[11] The EPA finalized the rule on the Treatment of Data Influenced by Exceptional Events (81 FR 68216, October 3, 2016) and the guidance on the Preparation of Exceptional Events Demonstrations for Wildfire Events in September of 2016. For more information, see *https://www.epa.gov/air-quality-analysis/exceptional-events-rule-and-guidance*. The Texas submittal was prepared and submitted under the under the 2007 Exceptional Events Rule (72 FR 13560, March 22, 2007) and reviewed under both rules.

Table 2. Air Quality Data (all values in ppm)

County, State	State Recommended Nonattainment?	AQS Site ID	2014-2016 DV	2014 4th highest daily max value	2015 4th highest daily max value	2016 4th highest daily max value
Doña Ana, NM	Yes (partial)	350130008 "La Union"	0.066	0.065	0.070	0.063
		350130017	N/A	0.067	0.057	N/A
		350130020 "Chaparral"	0.066	0.067	0.065	0.068
		350130021 "Desert View"	**0.072**	0.072	0.074	0.070
		350130022 "Santa Teresa"	0.068	0.066	0.070	0.069
		350130023 "Las Cruces"	0.065	0.066	0.066	0.064
El Paso, TX	No	481410029 "Ivanhoe"	0.062	0.062	0.065	0.061
		481410037 "UTEP"	**0.070**	0.070	0.070	0.071
		481410044 "Chamizal"	0.067	0.066	0.070	0.065
		481410055 "Ascarate Park"	0.064	0.062	0.064	0.066
		481410057 "Socorro"	0.066	0.066	0.069	0.064
		481410058 "Skyline"	0.068	0.070	0.069	0.066
Hudspeth, TX	No	No monitor	N/A			

The highest design value in each county is indicated in bold type.
N/A means that the monitor did not meet the completeness criteria described in 40 CFR, part 50, Appendix U, or no data exists for the county.

Doña Ana County shows a violation of the 2015 ozone NAAQS and therefore, is included in full or part in the intended nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county in the area of analysis has been evaluated, as discussed below, based on the five factors and other relevant information to determine whether it contributes to the nearby violation. EPA also notes that, in addition to the violating monitor in Doña Ana County, El Paso County has six ambient monitors that are meeting the 2015 ozone NAAQS. Hudspeth County does not have ozone monitoring sites.

Figure 1, shown previously, identifies the intended nonattainment area, the CBSA and CSA boundaries and the violating monitor. Table 2 above identifies the DVs for all monitors in the area of analysis and Figure 2 below shows the trend of DVs for the current violating monitor, from 2006 to 2016. The violating monitor in Doña Ana County has a DV of 72 ppb and is known as the "Desert View" monitor - it is located about 0.85 miles north of the border with Mexico and slightly less than 3 miles west of the border with Texas. There are four other monitors within the area of analysis located in Doña Ana County that are meeting the 2015 ozone NAAQS: the Santa Teresa monitor, which has a DV of 68 ppb is approximately 0.25 miles north of the international border with Mexico and about 5.9 miles west-southwest of the Desert View monitor; the La Union monitor, which has a DV of 66 ppb is approximately 10 miles north of the international border and about 0.4 miles west of the Texas border; the Chaparral monitor, which has a DV of 66 ppb is approximately 2.7 miles

ED_005023_00003759-00010

north of the Texas border and about 1.9 miles west of the Otero County (NM) border; and the Las Cruces monitor, which has a DV of 65 ppb is located in Las Cruces, approximately 37 miles north of the international border and about 24 miles north-northwest of El Paso County).

There are six monitors in El Paso County that are meeting the 2015 ozone standard.[12] One of these monitors is located in the western-most portion of the county, within the southeastern quadrant of the University of Texas, El Paso (UTEP) campus, approximately half a mile from the border with Mexico; this monitor is known as the "UTEP" monitor and has a DV of 70 ppb.[13] Two of the other monitors in El Paso County are also located along the international border: one near the Chamizal National Memorial, which has a DV of 67 ppb and one near Ascarate Park, which has a DV of 64 ppb. There is also a monitor in the City of Socorro, which has a DV of 66 ppb and is approximately 2.5 miles east of the international border; the "Ivanhoe" monitor, which has a DV of 62 ppb and is located south of the Fort Bliss military reservation, and the northern-most monitor ("Skyline"), which has a DV of 68 ppb and is located approximately 9.5 miles north-northeast of the UTEP monitor.

Figure 2 illustrates the trend in ozone design values since 2006 at the single monitor currently violating the 2015 ozone NAAQS in the area of analysis. The overall trend is a gradual decrease in ozone levels, with the violating monitor in Doña Ana County decreasing by an average of 0.3 ppb per year. We note that the monitor had a DV of 69 ppb for the 2009-2011 period, but thereafter increased to 72 ppb and has remained at 72 ppb since the 2010-2012 period.

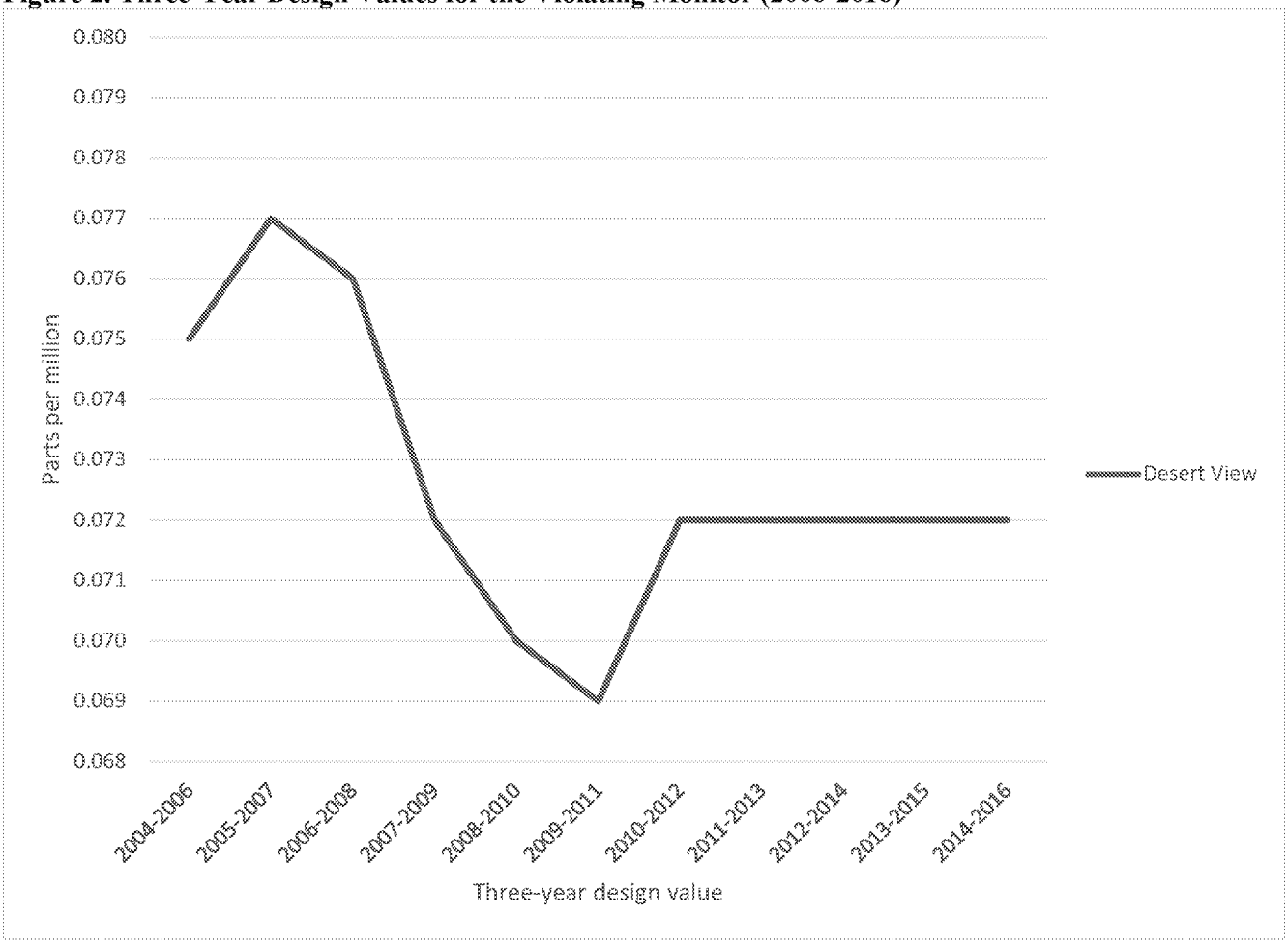
---

[12] As stated above, due to the Exceptional Event determination, El Paso is attaining the 2015 standard.

[13] On September 27, 2016, Texas submitted an Exceptional Event demonstration for the June 21, 2015 exceedance of the 2015 ozone standard at the UTEP monitor. The EPA agreed that an Exceptional Event occurred at the UTEP monitor on June 21, 2015. Individual violations of the 2015 ozone NAAQS that the EPA determines have been caused by an exceptional event that meet the administrative and technical criteria in the Exceptional Events Rule are not included in the air quality data calculations. Thus, the monitoring data for June 21, 2015 are not included in the calculation of the 2014-2016 DV at the UTEP monitor. Documentation regarding the Exceptional Event is provided in the docket for this action.

ED_005023_00003759-00011

Figure 2. Three-Year Design Values for the Violating Monitor (2006-2016)



EPA intends to designate as nonattainment the areas with monitors that are violating the 2015 ozone NAAQS: Doña Ana County is included in whole or in part in EPA's intended nonattainment area for the 2015 ozone NAAQS.

Factor 2: Emissions and Emissions-Related Data

The EPA evaluated ozone precursor emissions of nitrogen oxides (NOx) and volatile organic compounds (VOC) and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions Data

The EPA reviewed data from the 2014 National Emissions Inventory (NEI).[14] For each county in the area of analysis, the EPA examined the magnitude of large sources (NOx or VOC emissions greater than 100 tons per year or tpy) and small point sources and the magnitude of county-level emissions reported in the NEI. These county-level emissions represent the sum of emissions from the following general source categories: point sources, non-point (i.e., area) sources, non-road mobile, on-road mobile, and fires. Emissions levels from

[14] Please see https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei. The data reported in this TSD do not include biogenic emissions (vegetation is the predominant biogenic source of VOC; microbial activity is responsible for the emission of NOx and soil microbial activity is responsible for NOx and N_2O emissions from agricultural lands and grasslands).

sources in a nearby area indicate the potential for the area to contribute to monitored violations. Table 3 below provides a county-level emissions summary of NOx and VOC emissions (tpy) for the area of analysis considered for inclusion in the intended El Paso nonattainment area.

Table 3. Total County-Level NOx and VOC Emissions

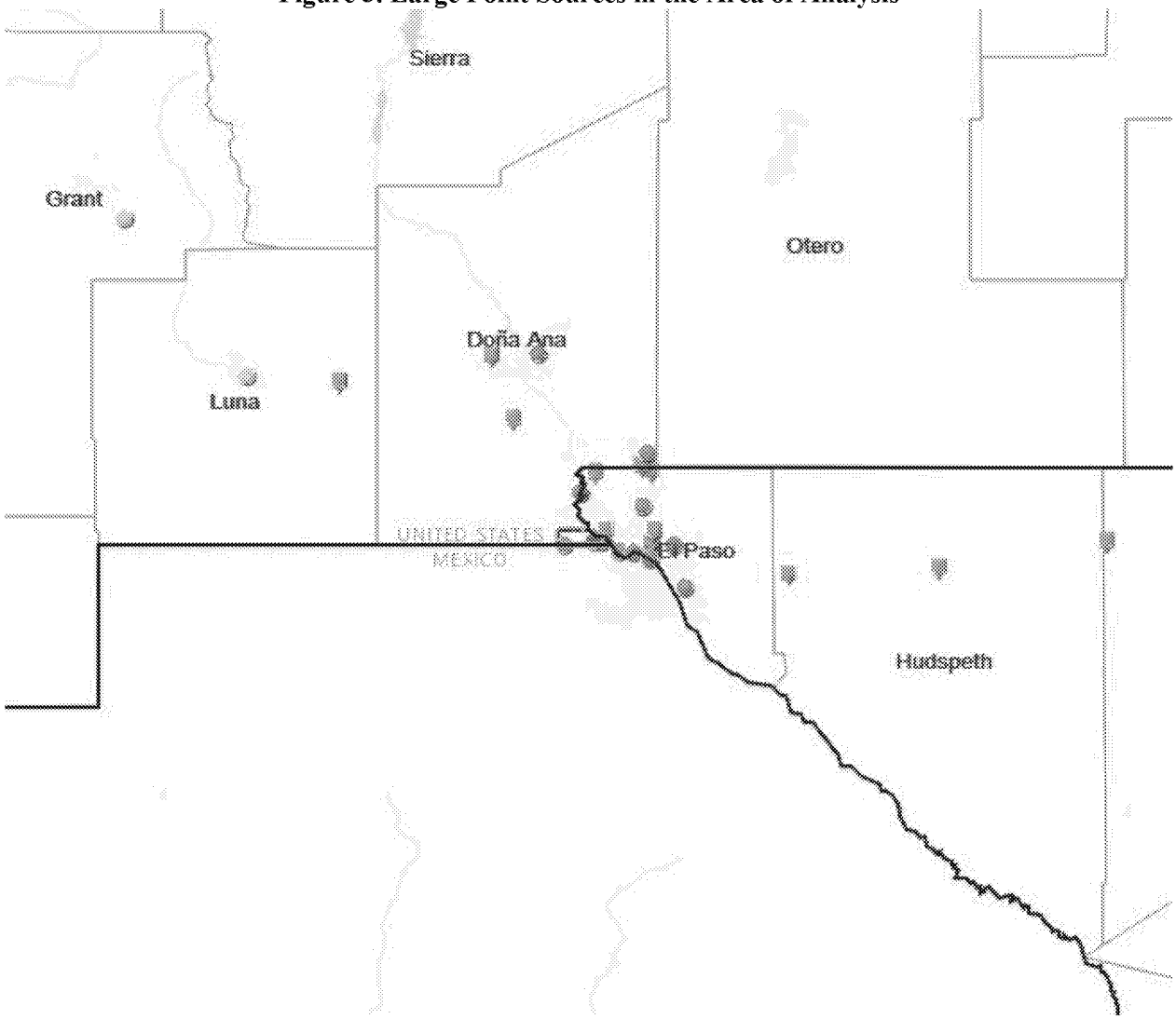
County, State	State Recommended Nonattainment?	Total NOx (tpy)	Total VOC (tpy)
El Paso, TX	No	18,391	13,912
Doña Ana, NM	Yes (partial)*	10,729	6,096
Hudspeth, TX	No	2,776	446
	Area wide:	31,896	20,454

* For state recommended partial counties, the emissions shown are for the entire county.

In addition to reviewing county-wide emissions of NOx and VOC in the area of analysis, the EPA also reviewed emissions from large point sources. The location of these sources, together with the other factors, can help inform nonattainment boundaries. The locations of the large point sources are shown in Figure 3 below. The intended nonattainment boundary is also shown.

ED_005023_00003759-00013

Figure 3. Large Point Sources in the Area of Analysis



Within the area of analysis, El Paso County has the highest emissions of NOx (18,391 tpy or about 58% of the NOx emissions within the area of analysis) and VOC (13,912 tpy or about 68%); Doña Ana County has the second highest emissions of NOx (10,729 or about 34%) and VOC (6,096 or about 30%); and Hudspeth County has the lowest emissions, with 2,776 tpy of NOx (about 9%) and less than 446 tpy of VOC (about 2%).

With regard to total emissions, the EPA's pollution transport modeling indicates that man-made sources in New Mexico contribute approximately 4% to the projected 2017 design value for Doña Ana County.[15] Emissions sources in Mexico also likely contribute to violations of the ozone NAAQS in Yuma County.

---

[15] See Table 2c., Implementation of the 2015 Primary Ozone NAAQS: Issues Associated with Background Ozone White Paper for Discussion, December 30, 2015. A copy of the White Paper is available at https://www.epa.gov/sites/production/files/2016-03/documents/whitepaper-bgo3-final.pdf. The results are based on 2017 CAMx source apportionment modeling that was released publicly on January 22, 2015 as part of the memo: Information on

Population density and degree of urbanization

In this part of the factor analysis, the EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include emissions of NOx and VOC from on-road and non-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NOx and VOC emissions that may contribute to violations of the NAAQS. Table 4 shows the population, population density, and population growth information for each county in the area of analysis. Figure 4 below contains a county-level density map of the area of analysis.

Table 4. Population and Growth

County, State	State Recommended Nonattainment?	2010 Population	2015 Population	2015 Population Density (per sq. mi.)	Absolute change in population (2010-2015)	Population % change (2010-2015)
Doña Ana, NM	Yes (partial)*	209,233	214,295	56	5,062	2
El Paso, TX	No	800,647	835,593	825	34,946	4
Hudspeth, TX	No	3,476	3,379	1	-97	-3
	TX Area total:	1,013,356	1,053,267		39,911	4

* For state recommended partial counties, the emissions shown are for the entire county.
Source: U.S. Census Bureau population estimates for 2010 and 2015. www.census.gov/data.html

Within the area of analysis, El Paso County has the highest population with 835,593 and a population density of 825 people per square mile. Doña Ana County has a population of 209,233 and a population density of 56 people per square mile. The population in Hudspeth County is much lower with a total of only 3,379 people and with a population density of 1. Within the area of analysis, approximately 79 percent of the population live in El Paso County, 20 percent reside in Doña Ana County, and one percent live in Hudspeth County.

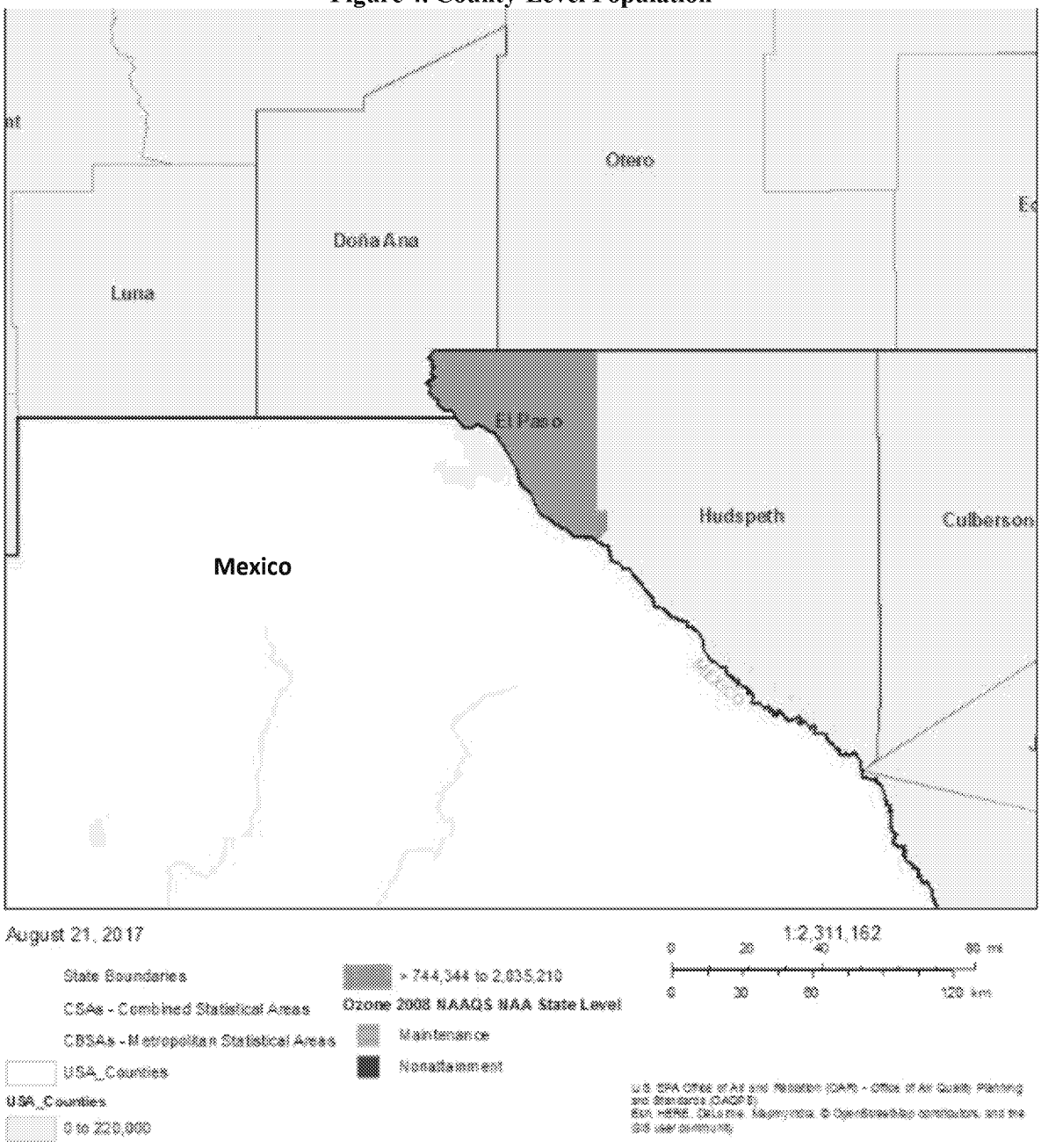
From 2010 to 2015, El Paso County experienced the highest absolute and percentage population change with an increase in population of nearly 35,000, which is about a 4% change. Doña Ana County experienced growth of over 5,000, a change of about 2%. Hudspeth County experienced negative population growth over the same period.

Figure 4 below shows the county-level population density in the area of analysis.

---

the Interstate Transport "Good Neighbor" Provisions for the 2008 O3 National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I). A copy of that memo and related documents can be found at the following website: http://www.epa.gov/airtransport/ozonetransportNAAQS.html.

Figure 4. County-Level Population



Traffic and Vehicle Miles Travelled (VMT)

The EPA evaluated the commuting patterns of residents, as well as the total vehicle miles traveled (VMT) for each county in the area of analysis. [16] In combination with the population/population density data and the location of main transportation arteries, this information helps identify the probable location of non-point source emissions. A county with high VMT and/or a high number of commuters is generally an integral part of an urban area and high VMT and/or high number of commuters indicates the presence of motor vehicle emissions

[16] The VMT data are available from the NEI (see https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei). See also https://www.epa.gov/ozone-designations/ozone-designations-guidance-and-data.

that may contribute to violations of the NAAQS. Rapid population or VMT growth in a county on the urban perimeter may signify increasing integration with the core urban area, and thus could indicate that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. In addition to VMT, the EPA evaluated worker data collected by the U.S. Census Bureau for the area of analysis.[17] Table 5 shows the traffic and commuting pattern data, including total VMT for each county, number of residents who work in each county, number of residents that commute to or within counties with violating monitor(s), and the percent of residents commuting to or within counties with violating monitor(s). Unless otherwise noted, the data in Table 5 are 2014 data.

Table 5. Traffic and Commuting Patterns

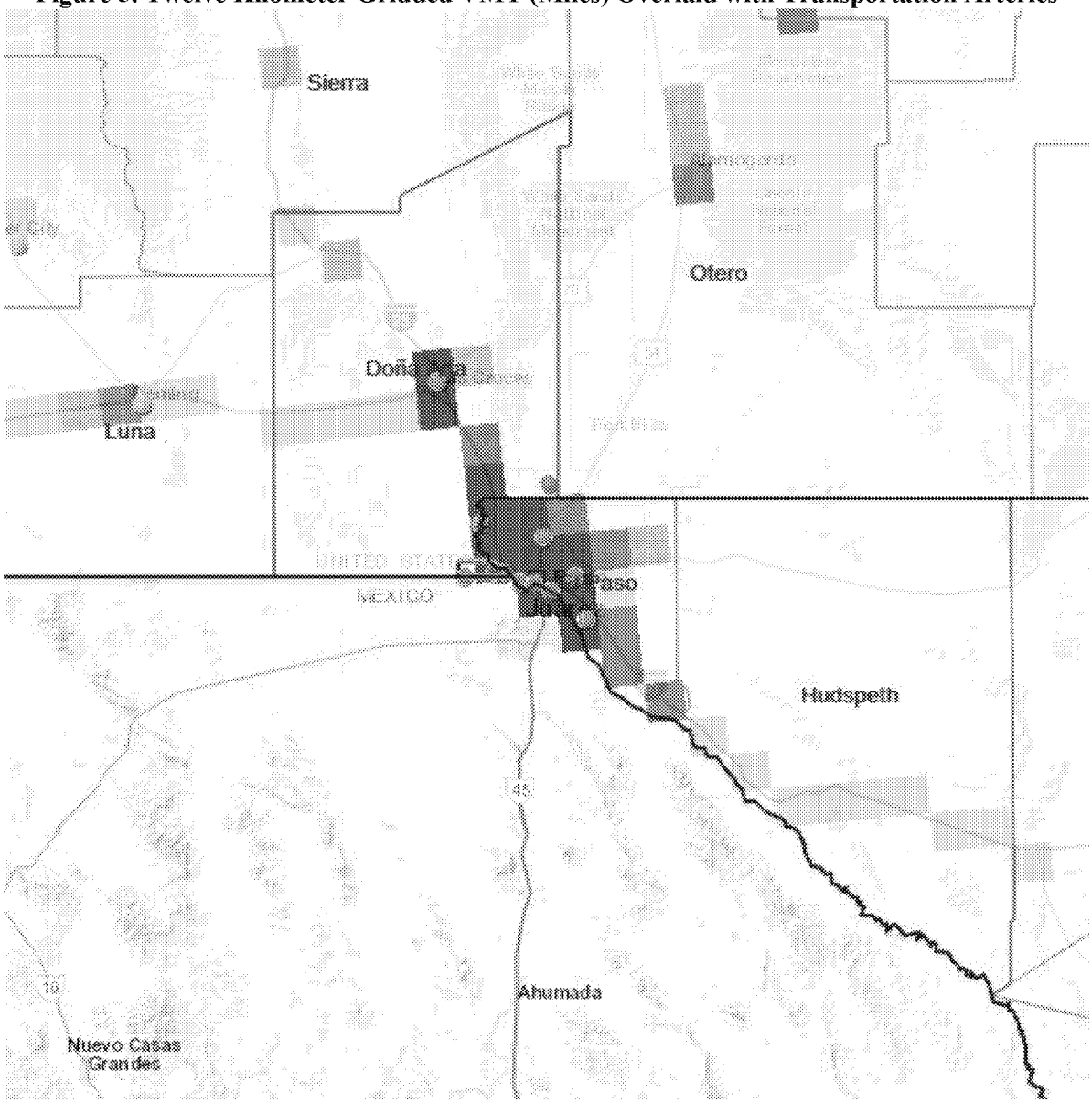
County, State	State Recommended Nonattainment?	2008 Total VMT (Million Miles)	2014 Total VMT (Million Miles)	VMT Growth 2008 to 2014 (percent)	Number of County Residents Who Work	Number (Percent) Commuting to or Within El Paso County	Number (Percent) Commuting to or Within Doña Ana County
Doña Ana, NM	Yes (partial)*	2,568	2,024	-21	72,179	12,827 (18%)	47,369 (66%)
El Paso, TX	No	5,599	5,956	6	308,236	274,910 (89%)	5,692 (2%)
Hudspeth, TX	No	461	441	-4	1,208	466 (39%)	4 (less than 1%)
	Total:	8,628	8,421	-2	381,623	288,203	53,065

* For state recommended partial counties, the data provided are for the entire county.
Counties with a monitor violating the NAAQS are indicated in bold.

To show traffic and commuting patterns, Figure 5 below overlays 12-kilometer gridded VMT from the 2014 NEI with a map of the transportation arteries. The data for Figure 5 are the 12-kilometer gridded 2014 VMT in the Ozone Mapping Tool.

[17] The worker data can be accessed at: http://onthemap.ces.census.gov/.

Figure 5. Twelve Kilometer Gridded VMT (Miles) Overlaid with Transportation Arteries



Commuters in the area of analysis traveled approximately 8.6 billion miles during calendar year 2014: El Paso and Doña Ana counties each have VMT for calendar year 2014 in excess of 2 billion miles (about 5.6 billion for El Paso and about 2.6 billion for Doña Ana), and Hudspeth County had less than 500 million VMT. Only El Paso County had VMT growth from 2008 to 2014 (+6%). VMT in Doña Ana and Hudspeth Counties decreased by about 21% and 4%, respectively, over the same period.

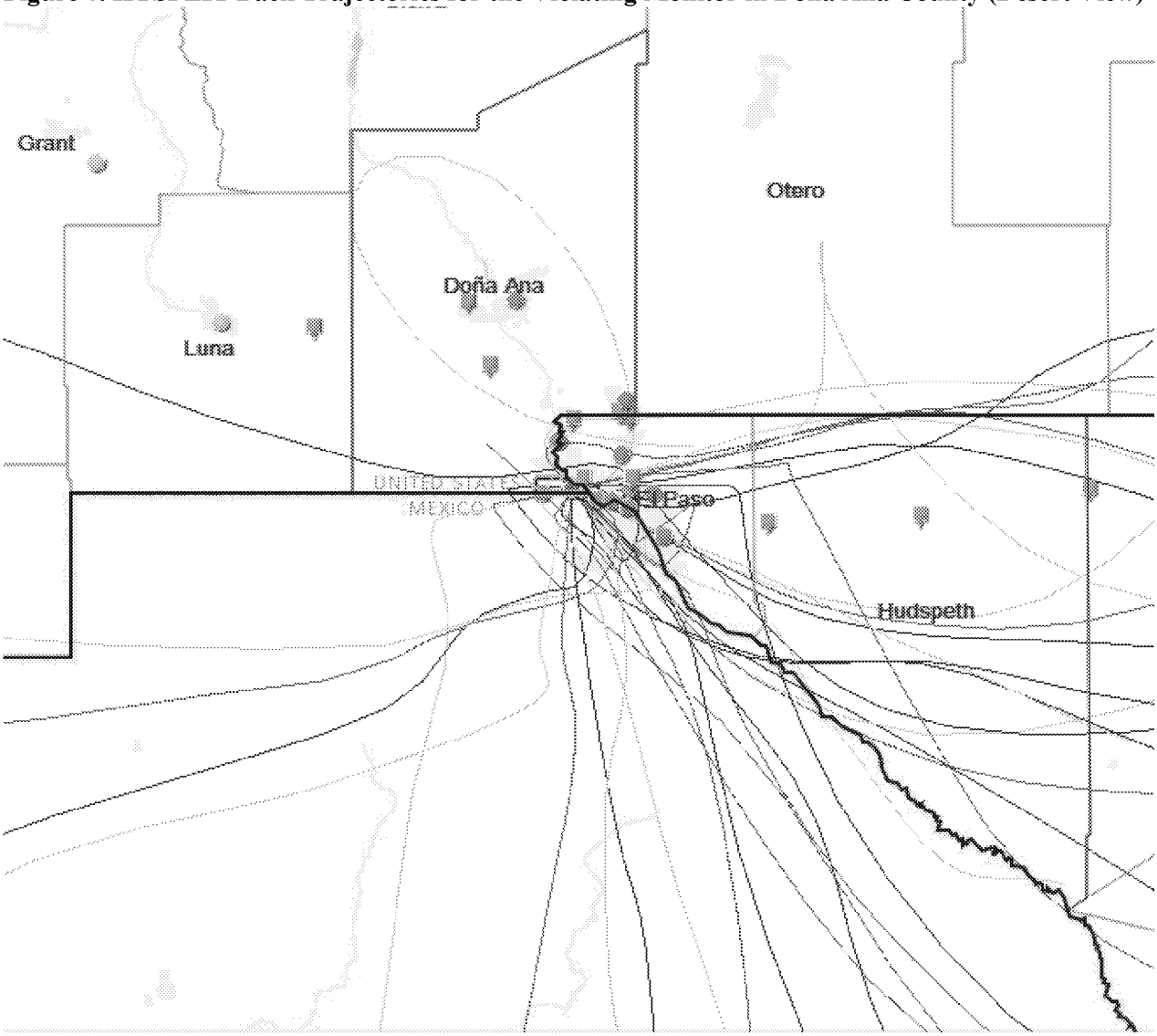
Within the area of analysis, about 89% of workers living in El Paso County commute within El Paso County and about 66% of workers living in Doña Ana County commute within Doña Ana County. About 2% of workers living in El Paso County commute to Doña Ana County and about 18% of workers living in Doña Ana County commute to El Paso County. About 39% of the workers living in Hudspeth County commute to El Paso County and less than 1% commute to Doña Ana County. These data indicate that most of the citizens in each county in the area of analysis do not travel outside of their respective counties for work.

Factor 3: Meteorology

Evaluation of meteorological data helps to assess the fate and transport of emissions contributing to ozone concentrations and to identify areas potentially contributing to the monitored violations. Results of meteorological data analysis may inform the determination of nonattainment area boundaries. In order to determine how meteorological conditions, including, but not limited to, weather, transport patterns, and stagnation conditions, could affect the fate and transport of ozone and precursor emissions from sources in the area. EPA conducted analyses to better understand the area's meteorological transport conditions using the National Oceanic and Atmospheric Administration Hybrid Single Particle Lagrangian Integrated Trajectory Model (NOAA HYSPLIT or HYSPLIT). The HYSPLIT model yields an estimate of the path an air mass has traveled before reaching a monitor at a specific location and time. Specifically, the model provides the centerline of the probable path. By evaluating these estimates of where an air mass has traveled before reaching a monitor where an exceedance has occurred, one can consider what potential areas and emission sources could have contributed to the exceedance. The EPA evaluated 2014-2016 HYSPLIT trajectories at 100, 500, and 1000 meters above ground level (AGL) that illustrate the three dimensional paths traveled by air parcels to a violating monitor. Figure 6 shows the 24-hour HYSPLIT back trajectories for each exceedance day (i.e., daily maximum 8 hour values that exceed the 2015 ozone NAAQS) for the violating monitor.

ED_005023_00003759-00019

Figure 6. HYSPLIT Back Trajectories for the Violating Monitor in Doña Ana County (Desert View)



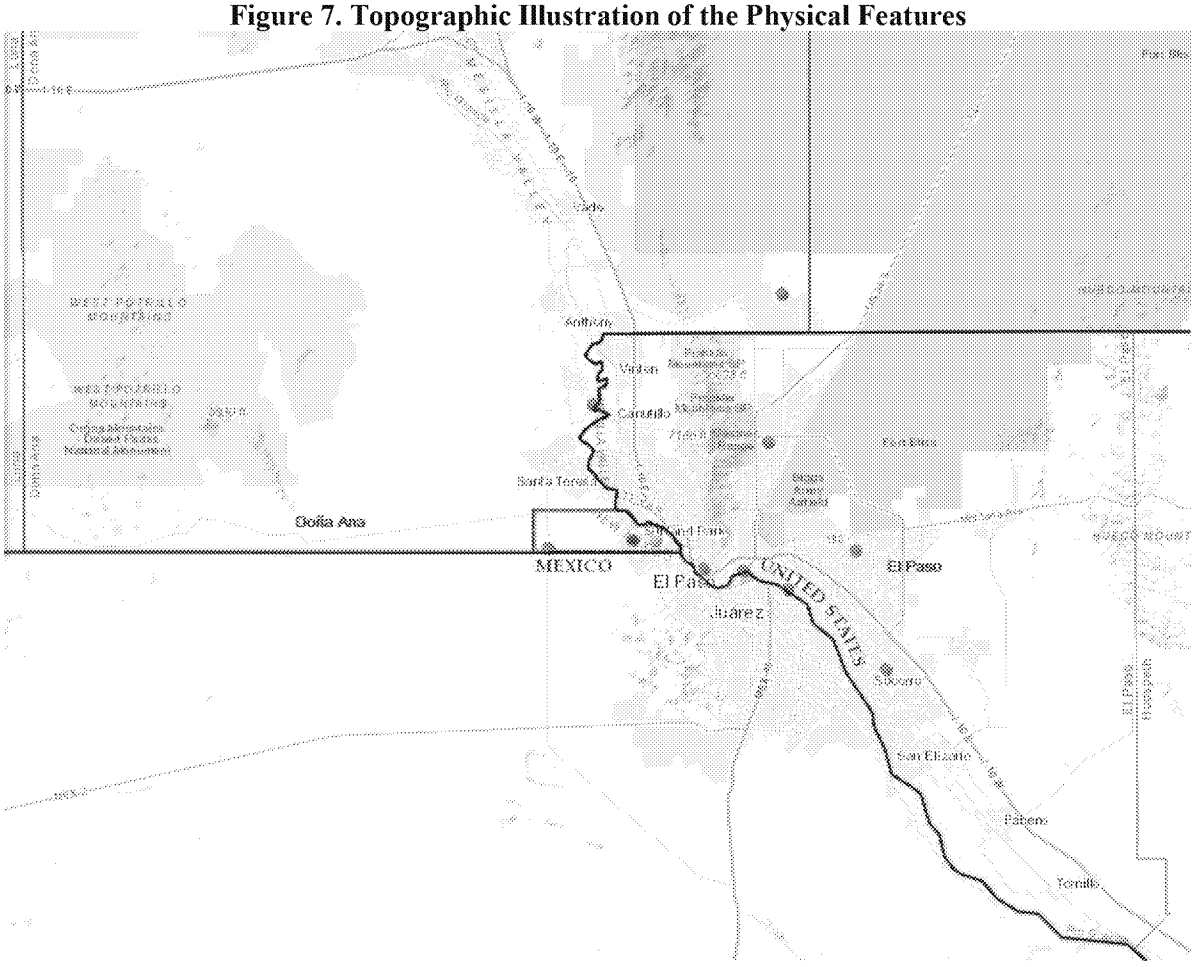
The HYSPLIT model shows that the majority of the back trajectories which influenced the violating monitor indicated transport from Mexico into Doña Ana County. Most of these trajectories originate outside the area of analysis and many of the trajectories change direction as indicated by the circular, arching and looping lines in nearly all directions around the violating monitor. In addition, most of the back trajectories that originate in or flow through New Mexico also flow through Mexico and/or El Paso before reaching the violating monitor.

Factor 4: Geography/topography

Consideration of geography or topography can provide additional information relevant to defining nonattainment area boundaries. Analyses should examine the physical features of the land that might define the airshed. Mountains or other physical features may influence the fate and transport of emissions as well as the formation and distribution of ozone concentrations. The absence of any such geographic or topographic features may also be a relevant consideration in selecting boundaries for a given area.

The EPA used geography/topography analysis to evaluate the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area. Figure 7 below illustrates the physical features in the area of analysis.

Figure 7. Topographic Illustration of the Physical Features



The Rio Grande River runs from the NW quadrant of the map, diagonally into the El Paso area, flowing southeast along the Texas-Mexico border. The Franklin Mountains stretch north from the City of El Paso. There is also a valley to the north-northeast of El Paso County. Comparing the HYSPLIT models to the topographic map, the Franklin Mountains appear to influence the flow of air by potentially limiting air pollution transport, further supporting the States' recommendations to designate Doña Ana and El Paso Counties as separate areas.

Factor 5: Jurisdictional boundaries

Once the geographic extent of the violating area is determined, the EPA considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary to carry out the air quality planning and enforcement functions for nonattainment areas. In defining the boundaries of the intended nonattainment area, the EPA considered existing jurisdictional boundaries, which can provide easily identifiable and recognized boundaries for purposes of implementing the NAAQS. Examples of jurisdictional boundaries include, but are not limited to: counties, air districts, areas of Indian country, metropolitan planning organizations, and existing nonattainment areas. If an existing jurisdictional boundary is used to help define the nonattainment area, it must encompass all of the area that has been identified as meeting the nonattainment definition. Where existing jurisdictional boundaries are not adequate or appropriate to describe the nonattainment area, EPA considered other clearly defined and permanent landmarks or geographic coordinates for purposes of identifying the boundaries of the intended designated areas.

The CSA is a multi-state area comprised of three counties: El Paso and Hudspeth (Texas), which comprise the El Paso CBSA and Doña Ana (New Mexico), which is the Las Cruces CBSA.

As described above, El Paso County includes portions of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." The EPA recognizes the sovereignty of tribal governments and intends to designate tribal areas separately from state areas, so jurisdictional authorities are maintained.

The area of analysis also includes a previously established nonattainment boundary associated with the 1-hour ozone NAAQS, which included just El Paso County.

Conclusion for the Area of Analysis

Based on the assessment of factors described above, the EPA does not intend to modify the States' recommendations. We intend to designate a portion of the following New Mexico county as part of the nonattainment area because the air quality monitor in this section of the county indicates a violation of the 2015 ozone NAAQS: the southeastern portion of Doña Ana County known as Sunland Park - bounded on the north by latitude N31°49'30" and on the south by the border between New Mexico and Mexico, on the east by the border between New Mexico and Texas, and on the west by longitude W106°36'36".

The air quality monitor in southeastern Doña Ana County is violating the 2015 ozone NAAQS based on the 2014-2016 DV and thus, this portion of the County, as specifically identified above, is included in the nonattainment area.

The EPA does not intend to modify Texas' recommendation that El Paso County be designated as attainment/unclassifiable for the 2015 ozone NAAQS. El Paso County has six regulatory ozone monitors, all of which are meeting the 2015 ozone NAAQS, including the UTEP monitor, based on monitored ambient air quality data collected between 2014 to 2016 and the EPA's December 15, 2017, concurrence on Texas' Exceptional Event demonstration regarding an exceedance of the 2015 ozone NAAQS at the UTEP monitor on June 21, 2015. Although El Paso County ranks higher than Dona Ana County for both NOx and VOC

emissions, the majority of emissions impacting the violating monitor at Desert View can be attributed to nearby areas in Mexico. Examination of HYSPLIT data shows that 26 of the 39 back trajectories – about 67% - originate or flow through nearby areas in Juarez or further south before reaching the violating monitor. We also note that in considering overall emissions in the area, as shown in Table 6, Juarez emits 52% of the total NOx (compared to 28% from El Paso), 67% of the total VOC emissions (compared to 22% from El Paso), has 61% of the population (compared to 38% in El Paso), and is more densely populated area with approximately 18,380 people per square mile, compared to 813 people per square mile in El Paso County.[18]

Table 6. Total County-Level NOx and VOC Emissions including Juarez Mexico

County, State or Municipality	Total NOx (tpy)	Total VOC (tpy)
El Paso, TX	18,391	13,912
Dona Ana, NM	10,729	6,096
Hudspeth, TX	2,776	446
Juarez, Mexico	33,876	42,270
Total	**65,772**	**62,724**

The EPA does not intend to modify Texas' recommendation to designate Hudspeth County as attainment/unclassifiable for the 2015 ozone NAAQS. Within the area of analysis, Hudspeth County ranks the lowest in all emissions data: NOx emissions are less than 2,800 tpy, which is less than 9% of the total NOx in the area of analysis and VOC emissions are less than 450 tpy, which is about 2% of the total VOC in the area of analysis; it's the only county in the area of analysis to experience negative population growth from 2010 to 2015 and its population is less than 3,500, which is less than one percent of the total population in the area of analysis; and its VMT is 461 million, which is about 5% of the total VMT in the area of analysis and less than 1% of workers living in Hudspeth County commute to the county with the violating monitor. Examination of the HYSPLIT data show back trajectories pass through Hudspeth County but do not pass near either of the two large point sources in Hudspeth County prior to reaching the violating monitor in Doña Ana County. In addition, Hudspeth County does not have an air quality monitor and El Paso County separates Hudspeth County from the violating monitor in Doña Ana County.

[18] See the analysis provided by New Mexico in the recommendation they submitted on September 22, 2016. All of the state and tribal recommendations received by EPA are posted on EPA's Ozone Designations web page at https://www.epa.gov/ozone-designations/2015-ozone-standards-state-recommendations

ED_005023_00003759-00023