STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF THE APPEALS OF THE AIR QUALITY PERMIT NO. 7482-M1 ISSUED TO 3 BEAR DELAWARE OPERATING – NM LLC **EIB No. 20-21(A)**

AND

IN THE MATTER OF THE PETITION FOR A HEARING REGARDING REGISTRATIONS NOS. 8729, 8730, AND 8733 UNDER GENERAL CONSTRUCTION PERMIT FOR OIL AND GAS **EIB No. 20-33(A)**

XTO ENERGY INC.'S STATEMENT OF INTENT TO PRESENT TECHNICAL EVIDENCE

Applicant XTO Energy Inc. ("XTO"), pursuant to 20.1.2.206 NMAC and the Scheduling Order, submits this Statement of Intent to Present Technical Evidence for the Environmental Improvement Board's September 24, 2020 hearing on this matter.

1. **The name of the person filing the statement.**

   XTO Energy Inc.

2. **Indication of whether the person filing the statement supports or opposes the petition at issue.**

   XTO opposes the petition at issue in this matter.

3. **Name of each witness.**

   XTO expects to offer the following technical witness at the hearing:

   Randy Parmley, P.E.
   V.P Business Development, Principal
   DiSorbo Consulting, LLC
   1001 Louisiana Street, Suite 3250
   Houston, TX 77002
   rparmley@disorboconsult.com

In addition, XTO may call other witnesses in response to questions raised during the hearing or as rebuttal witnesses.

4. **An estimate the length of the direct testimony of each witness.**

Mr. Parmley's direct testimony is expected to take approximately 30 minutes.

5. **Identify all exhibits which are part of the Record Proper and, for exhibits not part of the Record Proper, attach a copy.**

Mr. Parmley's direct testimony references the following documents that are not part of the Record Proper. A copy of those documents is attached.

a. Exhibit 1. Resume and List of Publications for Randy Parmley, P.E.;

b. Exhibit 2. NMED Memo – How Ozone Trends at New Mexico's Ozone Monitoring Stations Are Being Addressed – April 1, 2020;

c. Exhibit 3. NMED 2015 Ozone NAAQS Designation Recommendation Report – September 22, 2016;

d. Exhibit 4. EPA Ozone Advance Program Guidance Document – April 2016;

e. Exhibit 5. NMED Ozone Attainment Initiative Air Quality Bureau, Control Strategies, September 26, 2019.

In addition, Mr. Parmley's direct testimony references the following webpages that are not part of the Record Proper:

a. EPA's Technical Support and "Final" Technical Support document at https://www.epa.gov/ozone-designations/ozone-designations-2015-standards-new-mexico-state-recommendations-and-epa;

b. EPA website at https://www.epa.gov/sites/production/files/2016-02/documents/ozone-designations-guidance-2015.pdf;

c. EPA website at https://www.epa.gov/sites/production/files/2018-05/documents/nm_tsd_final.pdf;

d. EPA Advance / Ozone Advance Guidance document at https://www.epa.gov/sites/production/files/2016-04/documents/guidance_update.final_.april_2016.pdf;

e. EPA homepage for exceptional events at https://www.epa.gov/air-quality-analysis/treatment-air-quality-data-influenced-exceptional-events-homepage-exceptional;

f. EPA website at https://www.govinfo.gov/content/pkg/FR-2020-02-14/pdf/2020-02053.pdf#page=1;

g. New Mexico Environment Department Ozone Attainment Initiative Webpage at https://www.env.nm.gov/air-quality/o3-initiative/;

h. New Mexico Environment Department website at https://www.env.nm.gov/new-mexico-methane-strategy/wp-content/uploads/sites/15/2020/07/Draft-Ozone-Precursor-Rule-for-Oil-and-Natural-Gas-Sector-Version-Date-7.20.20.pdf;

6. **Attach the full direct testimony of each technical witness**

A copy of Mr. Parmley's written direct testimony is attached to this statement.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By: _____

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CERTIFICATE OF SERVICE

I hereby certify that on August 3, 2020, a true and correct copy of the foregoing ***XTO Energy Inc.'s Statement of Intent to Present Technical Evidence*** was served via electronic mail to the following:

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STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF THE APPEALS OF THE AIR QUALITY PERMIT NO. 7482-M1 ISSUED TO 3 BEAR DELAWARE OPERATING – NM LLC **EIB No. 20-21(A)**

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IN THE MATTER OF THE PETITION FOR A HEARING REGARDING REGISTRATIONS NOS. 8729, 8730, AND 8733 UNDER GENERAL CONSTRUCTION PERMIT FOR OIL AND GAS **EIB No. 20-33(A)**

DIRECT TESTIMONY OF RANDY PARMLEY, P.E., ON BEHALF OF XTO ENERGY INC., IN SUPPORT OF GENERAL CONSTRUCTION PERMIT, OIL AND GAS REGISTRATION NOS. 8729 AND 8730

AUGUST 3, 2020

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I. INTRODUCTION AND BACKGROUND REGARDING AIR PERMITTING AND AIR QUALITY MATTERS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Randy Parmley, 1001 Louisiana Street, Houston, Texas 77002.

Q. WHAT IS YOUR OCCUPATION?

A I am a Professional Engineer ("P.E.") specializing in air permitting matters and compliance with regulations relating to air permits.

Q. WHAT IS YOUR INVOLVEMENT IN THIS PROCEEDING?

A. I have been retained by Montgomery & Andrews, P.A. to provide expert testimony regarding the establishment of ozone nonattainment areas, State Implementation Plan ("SIP") development considerations for ozone nonattainment areas, and new source review permitting in the context of the New Mexico Environment Department's ("NMED") issuance of General Construction Permit ("GCP") Oil and Gas Registration Nos. 8729 and 8730.

Q. WHAT IS THE SUBJECT MATTER OF YOUR TESTIMONY?

A. I have reviewed the WildEarth Guardians' ("WEG") petition for a hearing, the NMED's Answer to the Petition for Hearing, and the State of New Mexico Environmental Improvement Board Procedural Order filed in this case. I have also reviewed the regulatory provisions for nonattainment areas referenced in the GCP under 20.2.72 NMAC for the non-major rules and 29.2.79 NMAC for the major nonattainment NSR rules, the NMED April 1,202 memorandum "How Ozone Trends at New Mexico's Ozone Monitoring Stations are Being Addressed", the NMED 2015 Ozone NAAQS Designation Recommendation Report dated September 2, 2016, the EPA Ozone Advance Guidance Document dated April, 2016, and the NMED Ozone Attainment Initiative Air Quality Bureau Control Strategies PowerPoint presentation dated September 26, 2019. I will provide testimony about how GCP Oil and Gas Registration Nos. 8729 and 8730 meet the requirements of the NMAC and GCP rules with regard to the prohibition from GCP registration for a facility located in a nonattainment area.

Q. I AM SHOWING YOU WHICH HAS BEEN MARKED AS XTO EXHIBIT 1. WHAT IS THIS DOCUMENT?

A. Exhibit 1 is my resume and list of publications and presentations.

Q. WAS THIS RESUME AND LIST OF PUBLICATIONS AND PRESENTATIONS PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. It was prepared by me.

Q. IS THIS A TRUE AND CORRECT COPY OF YOUR RESUME AND LIST OF PUBLICATIONS AND PRESENTATIONS?

A. Yes.

Q. IS EXHIBIT 1 A FAIR AND ACCURATE REPRESENTATION OF YOUR KNOWLEDGE, SKILL, EXPERIENCE, EDUCATION, AND TRAINING?

A. Yes.

Q. WHERE ARE YOU CURRENTLY EMPLOYED?

A. DiSorbo Consulting, LLC ("DiSorbo").

Q. PLEASE DESCRIBE DISORBO.

A. DiSorbo provides a broad range of specialty environmental services for facilities that need to obtain authorizations and comply with the state and local regulations, as well as the U.S. Environmental Protection Agency (the "EPA") regulations. DiSorbo employs an expert group of environmental engineers, scientists and specialists who focus on air permitting and compliance with regulations relating to air permits.

Q. HOW LONG HAVE YOU BEEN EMPLOYED BY DISORBO?

A. I have been employed by DiSorbo since July 2018.

Q. WHERE WERE YOU EMPLOYED PRIOR TO DISORBO?

A. Sage ATC Environmental Consulting LLC ("Sage").

Q. WHAT WERE YOUR DUTIES AND JOB RESPONSIBILITIES AT SAGE?

A. I opened the Houston office for Sage in 2001 and served as the Executive Vice President of Gulf Coast Marketing until 2016, when I was promoted to President of Sage. I served in this capacity for approximately two years prior to joining DiSorbo in July 2018. My primary duties at Sage were the same as my primary duties at DiSorbo, which are in the areas of New Source Review ("NSR") permitting, compliance with air permitting requirements, air dispersion modeling, and Best Available Control Technology ("BACT") reviews to support clients undergoing expansions or new industrial developments. I taught one-day, two-day, and three-day classes in NSR permitting and modeling several times a year for the last seven years at Sage.

Q. WHAT WAS YOUR PROFESSIONAL EXPERIENCE PRIOR TO JOINING SAGE?

A. I worked for the Center for Energy Studies at the University of Texas at Austin and for a small stack sampling firm while attending school. After graduation from college, I worked for EPA for approximately two years in the SIP section. I worked exclusively with the State of New Mexico with regulation development during my tenure with EPA. I then joined Radian Corporation (which became part of URS Corporation; which is now part of AECOM) for approximately 16 years.

Q. WHAT WERE YOUR JOB RESPONSIBILITIES AT RADIAN AND URS?

A. I advanced from Engineer to Staff Engineer, to Senior Engineer, and finally to Principal Engineer. On the management side, I was a Group Leader in the Permitting and Modeling Section, then a Section Head and finally a Business Manager. I worked exclusively on air-quality projects, mainly in the areas of air permitting and air dispersion modeling.

Q. WHAT IS YOUR FORMAL EDUCATIONAL BACKGROUND?

A. I was awarded a Bachelor of Arts in Natural Science/Chemistry in 1976 and a Bachelor of Science in Environmental Engineering in 1979, both from the University of Texas at Austin.

Q. DO YOU HOLD ANY PROFESSIONAL LICENSES?

A. Yes. I am licensed by the Texas Board of Professional Engineers as a P.E.

Q. WHAT IS THE LICENSING PROCESS FOR BECOMING A REGISTERED P.E. IN THE STATE OF TEXAS?

A. At the time I obtained my P.E. license, I had to have an approved 4-year engineering degree from an approved university and a minimum of a 5-year service record working under other P.E.s in order to demonstrate a fundamental understanding and application of engineering principles. The Board also required a Supplemental Experience Record prepared by other licensed P.E.s, and the Board evaluated these records prior to issuing a P.E. license.

Q. HAVE YOU WRITTEN ANY PUBLISHED ARTICLES OR PREPARED AND DELIVERED ANY PRESENTATIONS RELATING TO YOUR EXPERTISE?

A. Yes. I have conducted regulatory, permitting, and modeling seminars in North America, South America, Europe, and Asia. A list of articles and presentations is included in my resume.

Q. DO YOU KEEP UP WITH REGULATORY AND TECHNICAL CHANGES WHICH ARE RELATED TO YOUR PROFESSION?

A. Yes. Under the Texas Engineers Act, I am required to take at least 15 hours of Professional Development Courses annually. I also regularly read the applicable environmental rules and regulations regarding air quality matters as part of my work with multiple clients. Since a large part of my professional career has focused on the development and permitting of facilities under the federal Clean Air Act and, I have had a continuous opportunity to keep up with the regulatory and technical changes to permitting and regulatory matters.

Q. YOU MENTIONED THAT YOU WILL TESTIFY ABOUT AIR PERMITTING REQUIREMENTS. IN HOW MANY AIR PERMIT APPLICATIONS HAVE YOU BEEN INVOLVED?

A. In my 35 plus years of experience, I have prepared over 200 applications for case by case air quality permits and over 500 General permit registrations that have been filed and issued (mostly in Texas) for the Oil and Gas Industry, Terminals, and other Process industry types.

Q. DOES YOUR WORK WITH DISORBO REQUIRE YOU TO HAVE AN IN-DEPTH UNDERSTANDING OF THE APPLICABLE FEDERAL AND STATE STATUTES, REGULATIONS, AND POLICIES?

A. Yes. As my resume reflects, the responsibilities for my job include preparing, implementing, and providing compliance support for existing and pending permits for a wide variety of clients. I could not perform my responsibilities without having the in-depth understanding that is described in your question.

Q. BASED ON YOUR EXPERIENCE, WHAT IS TYPICALLY INVOLVED IN PREPARING A CASE BY CASE OR A GENERAL AIR PERMIT APPLICATION?

A. For most air permit applications, the applicant or applicant's consultant prepares the documentation to submit to the permitting authority ("Agency") (in this case the NMED), including the technical data and analysis that is required; assists the applicant in responding appropriately and completely to Agency questions or requests for additional information; and prepares any follow-up, supplemental information for submission in relation to the air quality application. For example, preparation of an air quality application typically involves calculating source emissions data, performing the air dispersion modeling, performing the BACT/LAER analysis, performing regulatory reviews, preparing written application documents, and drafting responses to the permit writer's information requests. Preparing an air quality permit application requires an understanding of the attainment status with the National Ambient Air Quality Standards (NAAQS) for the area where the source will be located, and how the permitting authority implements its air quality program.

Q. WHAT IS THE SUBJECT OF THE APPLICATION REGISTRATIONS IN THIS MATTER?

A. The approval of the GCP-Oil and Gas registration authorizes the initial construction, operation, or modification of the facility to treat, process, store and/or transport gases and

liquids associated with the production of oil and gas, and/or inject those substances or their byproducts into the earth. The registration establishes the terms and conditions for facility compliance with the GCP.

Q. ARE YOU TESTIFYING TO ALL ASPECTS OF THE REGISTRATION ISSUED BY MNED?

A. No. As outlined in the EIB Procedural Order, the Parties have agreed that the specific emission limits and emission calculations of the GCP-Oil and Gas registrations are not at issue in this appeal. The Order notes that WEG "contends that, irrespective of the formal attainment designation, the greater Carlsbad region where the facilities at issue are located is in a state of actual nonattainment with the National Ambient Air Quality Standard (NAAQS) for ozone, as defined by the applicable regulations . . . [and] that the Department was required to deny the Registrations under A100 of the GCP-Oil & Gas." My testimony will be limited to issues involving the attainment status with the NAAQS for ozone, at the facility locations in this appeal.

Q. HOW DOES YOUR EXPERIENCE QUALIFY YOU TO OFFER AN EXPERT OPINION ON THESE ISSUES?

A. As my resume reflects, I have worked over 35 years on projects encompassing almost every aspect of air quality in the petroleum industry. Early in my career, I worked in the SIP Plan section of EPA Region VI, with rule development responsibilities in New Mexico. The majority of my current permitting expertise is serving clients in the Houston-Galveston-Brazoria ("HGB") ozone nonattainment area. I have worked on numerous projects investigating potentially applicable VOC and NOx control strategies to support SIP development aimed at getting nonattainment areas back to compliance with the NAAQS. I have conducted ozone modeling and published in this area. In addition to managing and conducting quality assurance for monitoring activities in the United States, I have helped design air quality monitoring networks in Mexico, Chile, Venezuela, Romania, and Thailand. I have worked with the Oil and Gas industry on many occasions in the areas or securing or establishing emission reduction credits necessary for establishing offsets for Nonattainment New Source Review permitting. I have conducted permitting

and modeling seminars across the country and internationally. The combination of working in an ozone nonattainment area for decades, tracking issues associated with nonattainment designations and how these designations affect permit authorization, broad knowledge of the role of monitoring data in the nonattainment process, ozone modeling experience and rule development experience put me in a good position to provide an expert opinion in this matter.

II. NONATTAINMENT ISSUES – BACKGROUND

A. NONATTAINMENT AND UNCLASSIFIABLE/ATTAINMENT AREAS

Q: WHAT IS A NONATTAINMENT AREA?

A: Under the Clean Air Act, a nonattainment area is an area that EPA designates as not meeting (i.e., not attaining) a pollutant-specific NAAQS, in this case ground level ozone. A designation is the formal process EPA uses to assign an attainment, unclassified, or nonattainment status for a given area for any of the six common air pollutants (criteria pollutants – SO_2, Particulate matter - $PM_{2.5}$ and PM_{10}, NO_2, CO, ground level ozone, and lead) .

Q: WHY ARE NAAQS SET FOR THESE SIX POLLUTANTS?

A: The provisions of the Clean Air Act require EPA to set NAAQS for these six common air pollutants. EPA sets primary standards for these pollutants based on protection of public health. Secondary standards are set to prevent environmental and property damage. After EPA establishes or revises a primary and/or secondary NAAQS, the Clean Air Act requires EPA to designate areas as "attainment" (meeting), "nonattainment" (not meeting), or "unclassifiable" (insufficient data) after assessment of monitoring data collected by state, local and tribal governments.

Q: WHAT IS GROUND-LEVEL OZONE?

A: Ozone is the main component in what is commonly referred to as smog. It is formed largely from a chemical reaction of nitrogen oxides (NOx) and volatile organic compounds (VOC)

in the presence of sunlight. Ground-level ozone is regulated by EPA due to health effects on humans, while stratospheric ozone, which occurs naturally in the upper atmosphere, provides protection from exposure to ultraviolet rays from the sun.

Q: HAS EPA REVISED THE GROUND-LEVEL OZONE STANDARD?

A: Yes, most recently, EPA lowered the NAAQS for ground-level ozone from 0.075 parts per million (ppm) to 0.070 ppm in October 2015.

Q: DID NMED EVALUATE MONITORING DATA IN RESPONSE TO THIS REVISION OF THE OZONE NAAQS?

A: Yes, NMED reviewed monitoring data and based on their review, the State of New Mexico submitted nonattainment designation recommendations to EPA in 2016 for portions of Doña Ana County in southern New Mexico. At the time, the Desert View and Santa Teresa monitors in Doña Ana County, both near El Paso, Texas and Ciudad Juarez, Mexico, had monitoring values greater than the NAAQS.[1] The State nonattainment designation recommendation included a recommended nonattainment area boundary including both of these monitor locations, as well as an alternate, smaller, boundary recommendation which included only the area of the county in proximity to Sunland Park.

Q: DID EPA DESIGNATE A PORTION OF DOÑA ANA COUNTY AS NONATTAINMENT CONSISTENT WITH NEW MEXICO'S RECOMMENDATION, OR ALTERNATE RECOMMENDATION?

A: Yes, EPA evaluated 2016 monitoring data in addition to the 2013-2015 data submitted in the State's initial recommendation and determined that the Santa Teresa monitoring data demonstrated attainment of the standard. I will discuss the "design value" basis later in my testimony. In addition, EPA concurred with New Mexico's alternate recommendation for a smaller nonattainment area boundary that encompassed only the area of the county in proximity to the Sunland Park location.[2]

[1] NMED 2015 Ozone NAAQS Designation Recommendation Report – September 22, 2016

[2] EPA's Technical Support and "Final" Technical Support documents at the following link: https://www.epa.gov/ozone-designations/ozone-designations-2015-standards-new-mexico-state-recommendations-and-epa

Q: WHY DID EPA DESIGNATE ONLY THE AREA IN THE VICINITY OF SUNLAND PARK AS NONATTAINMENT?

A: To determine the nonattainment area boundary EPA evaluated five factors, including air quality data; emissions and emissions-related data; meteorological data; geography/ topography; and jurisdictional boundaries consistent as with their area designation guidance for the 2015 ozone NAAQS.[3] This analysis concluded that "the majority of emissions impacting the violating monitor at Desert View can be attributed to nearby areas in Mexico."[4] Accordingly, EPA designated the Sunland Park area as a marginal ozone nonattainment area and designated the remaining part of Dona Ana County, as well as El Paso and Hudspeth Counties in Texas as attainment/unclassifiable.[5]

Q: DOES EPA OR NEW MEXICO MAKE THE NONATTAINMENT DESIGNATION?

A: Nonattainment designations are made solely by EPA. New Mexico can make recommendations, but each designation for attainment, unclassifiable, or nonattainment is made by EPA.

Q: WHAT IS A MARGINAL NONATTAINMENT AREA DESIGNATION?

A: EPA classifies nonattainment areas based on the severity of the ozone value. The classification ranges from marginal, moderate, serious, severe, to extreme. The EPA nonattainment classification determines the amount of time a SIP has to implement the strategies and emission control measures to bring the nonattainment area back to attainment with the NAAQS. States are allowed from 3 years with a marginal classification up to 20 years for an extreme classification to demonstrate compliance with the NAAQS. The classification also sets the definition of the Major Source threshold, the significant emission rate threshold for a modification, the contemporaneous netting threshold, and the emission offset ratio for permitting in these areas.

[3] EPA website at https://www.epa.gov/sites/production/files/2016-02/documents/ozone-designations-guidance-2015.pdf; Attachment 3 of this document describes the five factor evaluation used by EPA.
[4] EPA website at https://www.epa.gov/sites/production/files/2018-05/documents/nm_tsd_final.pdf
[5] EPA website at https://www.epa.gov/sites/production/files/2018-05/documents/nm_tsd_final.pdf

Q: ARE THERE OTHER REQUIRMENTS THAT THE EIB MUST TAKE TO MITIGATE OZONE LEVELS?

A: Yes, the EIB is required by State Statute to adopt a plan for ozone mitigation for areas where monitors indicate ozone levels within 95% of the ozone NAAQS.[6] The NMED prepares the plan for consideration by the EIB. This study plan includes areas in Eddy and Lea Counties.

Q: IS THE NMED INITIATING A PLAN FOR COMPREHENSIVE OZONE MITIGATION?

A: Yes, based on my review of the NMED's Answer to the Petition for Hearing Regarding Registrations Nos. 8729, 8730, and 8733 Under General Construction Permit for Oil and Gas Facilities, the NMED is currently conducting modeling in connection with its Ozone Attainment Initiative (OAI) that is expected to be completed in the fall of 2020. The modeling will provide the basis for future rulemaking and perhaps other efforts aimed at preventing these areas from being designated as nonattainment by EPA.

Q: IS IT NORMAL FOR A STATE TO INITIATE A PLAN FOR OZONE MITIGATION PRIOR TO EPA DESIGNATING AN AREA OR COUNTY AS NONATTAINMENT?

A: Yes, based on my experience, States will initiate an ozone mitigation plan to provide a scientific basis for plan development and rulemaking aimed at preventing areas of the State near or above NAAQS from being designated as nonattainment by EPA. EPA encourages this activity as illustrated by the EPA Ozone Advance Program (OAP).[7] The OAP is a collaborative effort by EPA to encourage early emission reductions. The OAP currently consists of 38 areas operating in 21 States aimed at taking near term steps to improve local air quality. With this approach, an action plan based on implementing the most effective

[6]Pursuant to Section 74-2-5.3, "If the environmental improvement board . . . determines that emissions from sources within its jurisdiction cause or contribute to ozone concentrations in excess of ninety-five percent of a national ambient air quality standard for ozone, it shall adopt a plan, including regulations, to control emissions of oxides of nitrogen and volatile organic compounds to provide for attainment and maintenance of the standard. Regulations adopted pursuant to this section shall be limited to sources of emissions within the area of the state where the ozone concentrations exceed ninety-five percent of the national ambient air quality standard."

[7] EPA Advance / Ozone Advance Guidance document at https://www.epa.gov/sites/production/files/2016-04/documents/guidance_update.final_.april_2016.pdf

measures for reducing ambient concentrations can be achieved while potentially avoiding the economic consequences associated with a nonattainment designation.

B. NONATTAINMENT AREAS AND THE GCP OIL AND GAS REGISTRATION

Q: WHY IS THE DEFINTION OF A NONATTAINMENT AREA IMPORTANT WITH REGARD TO THE NMED GCP OIL AND GAS REGISTRATION?

A: The GCP Oil and Gas Registration Requirements specifies in A100 Paragraph H conditions under which the NMED must deny a Registration Form. Item (6) under paragraph H states: "*The Facility is located in a nonattainment area (defined by 20.2.72.216 and 20.2.79 NMAC), Bernalillo County, or tribal lands*." Therefore, the definition of a nonattainment areas becomes important regarding the applicability for using this GCP.

Q: CAN YOU EXPLAIN THE REFERENCE TO 20.2.72.216 NMAC AND 20.2.79 NMAC?

A: Yes. 20.2.72 NMAC are the New Mexico's non-major New Source Review (NSR) rules. The specific nonattainment reference in the GCP of 20.2.72.216 NMAC refers to Nonattainment Area Requirements, which are applicable to sources that "*would exceed the ambient concentration in Table 1*". These ambient concentrations are listed as Significant Ambient Concentrations. Since ozone is not included in Table 1, the EIB clearly intended these non-major rules and the non-major GCP registration to be applicable to the pollutants listed on Table 1, which does not include ozone.

20.2.79 NMAC are the major source nonattainment area permitting rules. 20.2.79.7.AA NMAC defines "*Nonattainment area***"** as "*for any air pollutant an area which is shown by monitored data or which is calculated by air quality modeling (or other methods determined by the administrator to be reliable) to exceed any national ambient air quality standard for such pollutant. Such term includes any area identified under Subparagraphs (A) through (C) of Section 107(d)(1) of the federal Clean Air Act*."

This nonattainment definition in 20.2.79.7.AA NMAC is identical to the Federal nonattainment definition found is Section 171(2) of the Clean Air Act, 42 U.S.C. §7501(2),

as it existed prior to 1990.[8] It is important to note that the New Mexico Air Quality Control Act, section 74-2-5.C, provides that "rules adopted by the environmental improvement board or the local board may: (1) include rules . . . to achieve national ambient air quality standards in nonattainment areas; provided that such regulations: (a) shall be no more stringent than but at least as stringent as required by the federal act and federal regulations . . . pertaining to nonattainment areas." In my opinion, the inclusion of areas of modeled or monitored exceedance of a NAAQS that were not formally designated as nonattainment areas under the CAA would be more stringent than the current federal rules "pertaining to nonattainment areas," and thus, inconsistent with the New Mexico Air Quality Control Act.

Based on my reading of the Act, it is clear that the intent of the New Mexico Legislature to follow EPA's use of the term, even though the state's regulatory definition has not been updated to conform to the current federal definition. In my opinion, the 1990 Clean Air Act Amendments change, deleting that portion of the pre-1990 FCAA nonattainment definition referring to "*an area which is shown by monitored data or which is calculated by air quality modeling… to exceed any national ambient air quality standard for such pollutant,*" was done to remove any ambiguity so that nonattainment areas are defined solely on the basis of a designation of the nonattainment area.

Section 107(d) outlines the framework for these nonattainment designations resulting from a new or revised NAAQS or redesignation under an existing NAAQS. It is important to note the distinction in the Clean Air Act between initial designations under a new or revised NAAQS (CAA section 107(d)(1)(A)) and redesignation under an existing NAAQS (CAA section 107(d)(3)(A)). Since all portions of Lea and Eddy county were initially designated as attainment and continued to be designated as attainment for the 2015 revision of the ozone NAAQS, any change would be fall under the 107(d)(3)(A) as a redesignation. It is clear that EPA Administrator (and not New Mexico) determines the nonattainment status as evidenced by the wording in 107(d)(3)(A) which states: "*…on the basis of air quality*

[8] In 1990, Congress amended the definition to read as follows: "*The term 'nonattainment area' means for any pollutant, an area which is designated 'nonattainment' with respect to that pollutant within the meaning of Section 7470(d) of [Title 42].*"

data, planning and control considerations, or any other air quality-related considerations the Administrator deems appropriate, the Administrator may at any time notify the Governor of any State *that available information indicates that the designation of any area or portion of an area within the* State *or interstate area should be revised. In issuing such notification, which shall be public, to the Governor,* the *Administrator shall provide such information as the Administrator may have available explaining the basis for the notice.*"

Clearly, the EPA Administrator has not provided these notifications that would initiate the nonattainment designation process, but is working with New Mexico to initiate data to develop air control measures as mandated in the Air Quality Control Act, § 74-2-5.3, mentioned previously.

Q: DOES PARTICIPATION IN A PROGRAM TO REDUCE OZONE POLLUTION SUCH AS THOSE REQUIRED IN THE NEW MEXICO AIR QUALITY CONTROL ACT OR OTHER EPA VOLUNTARY PROGRAM, SUCH AS THE EPA ADVANCE PROGRAM, DEFER A NONATTAINMENT DESIGNATION?

A: According to the EPA Website,[9] participation in the Advance program does not defer nonattainment designations under a new or revised NAAQS. However, the measures being implemented by an area to reduce ozone may be a factor (among others) that EPA considers when making a decision as to whether an attainment area that is violating an existing ozone NAAQS should be redesignated as nonattainment.

C. PROCESS FOR ESTABLISHING A NONATTAINMENT AREA

Q: BASED ON YOUR EXPERIENCE, WHAT OTHER INFORMATION WOULD THE EPA ADMINISTER RELY ON BEFORE INITIATING A REDESIGNATION OF AN ATTAINMENT AREA AS A NONATTAINMENT AREA?

A: EPA uses numerous rigorous steps in evaluating monitoring data for a design value determination, including quality assurance, exceptional events evaluation, and other procedures to ensure the reliability of a designation. Quality-assured monitoring data is a large part of a data validation effort, but other factors are also important. In order to designate a nonattainment area, there needs to be determination of boundaries for the nonattainment area. A monitoring data value design value above 0.070 ppm does not establish a nonattainment area boundary. Therefore, the Administrator would need to rely

[9] https://www.epa.gov/sites/production/files/2016-04/documents/guidance_update.final_.april_2016.pdf

on an analysis using the EPA "5-factor" guidance for establishing a boundary for the nonattainment area, similar to the analysis discussed in my testimony earlier for limiting the existing ozone nonattainment area to Sunland Park.

1. EXCEPTIONAL EVENT CONSIDERATIONS

Q: WHAT IS AN EXCEPTIONAL EVENTS EVALUATION?

A: Exceptional events are defined as unusual or naturally occurring events that can affect air quality, but are not reasonably controllable using techniques that tribal, state or local air agencies may implement in order to attain and maintain the National Ambient Air Quality Standards (NAAQS). Exceptional events influencing monitored ozone concentrations include wildfires, prescribed fires, stratospheric ozone intrusions, and volcanic and seismic activities.[10]

EPA finalized revisions to the Exceptional Events Rule in September 2016 to establish criteria and procedures for evaluating if air quality monitoring data has been influenced by exceptional events. These rules are applicable to all NAAQS, including the 2015 ozone NAAQS. The rule is designed to ensure that air quality measurements are evaluated consistent with the conditions that caused the measurement. EPA has developed guidance documents for evaluating each type of exceptional event and for making determinations and analyses to exclude these exceptional events from consideration in design value determinations.

Q: HAVE YOU REVIEWED ANY DATA QUALITY ASSURANCE OR EXCEPTIONAL EVENTS DOCUMENTATION FOR THE EDDY AND LEA COUNTY MONITORING SITES?

A: No, I have not, nor do I know if these analyses have been completed. I am making these statements to illustrate that there are numerous steps and procedures necessary to validate monitoring data. EPA recognizes the importance of how these factors influence monitor design values and provides guidance for conducting scientific validation steps for any monitoring data. The CAA and EPA specifically designed a process, involving public

[10] EPA homepage for exceptional events at - https://www.epa.gov/air-quality-analysis/treatment-air-quality-data-influenced-exceptional-events-homepage-exceptional

participation, that has to be followed to assess whether an area is in attainment or not—otherwise, the statute and regulations could have simply required that any monitoring result or even design value exceeding a standard causes an area to immediately be nonattainment. Clearly, that is not the case.

2. OZONE NAAQS DESIGN VALUE

Q: WHAT IS A DESIGN VALUE WITH REGARD TO THE 2015 OZONE NAAQS?

A: The design value for ozone is a numeric indicator that describes the ozone air quality status of a given location in terms consistent with the form of the ozone NAAQS. Since the form of the ozone NAAQS is the annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years, the design value for ozone is comprised of the average of the past 3 years fourth-highest daily 8-hour concentrations. This average is compared to the NAAQS value of 0.070 ppm. Therefore, the design value for the area changes each year, as the most recent year's fourth-highest value is incorporated in the 3-year average.

Design values are computed and published annually by EPA's Office of Air Quality Planning and Standards (OAQPS) and reviewed jointly with EPA's Regional office (EPA Region VI for New Mexico). The design values can change after the date of publication for a variety of reasons, including errors in data entry, issues with a particular monitoring station, or adjustments for an exceptional event as described above. Therefore, the information in these reports is intended for informational purposes only and does not constitute a regulatory determination, such as a determination of nonattainment in this matter.

3. EPA ESTABLISHMENT OF AN OZONE NONATTAINMENT AREA

Q: WHAT IS THE PROCEDURE FOR EPA REDESIGNATING AN ATTAINMENT AREA TO NONATTAINMENT?

A: The procedure for redesignating is outlined in Section 107(d)(3) of the Clean Air Act, 42 U.S.C. §7407(d)(3). The Clean Air Act states that the Administrator may at any time after

consideration of the air quality data, planning and control considerations, or any other air quality-related considerations, notify the Governor of any State that available information indicates that the designation of any area or portion of an area within the State or interstate area should be revised.

It is important to understand that: 1) the Administrator retains the sole authority to approve or deny nonattainment area designation, not the State; 2) the Administrator considers not only air quality data, but also planning and control considerations or any other air quality-related consideration (like ozone transport from Texas or Mexico); and 3) the Administrator has the discretion to initiate this process "at any time" after the consideration of these factors.[11] As discussed previously, the NMED is currently engaged in an Ozone Attainment Initiative (OAI) that is scheduled for completion in the fall of 2020 that will provide additional information for the EPA Administrator to consider prior to initiating a nonattainment designation process.

Within 120 days after receiving the notification from the Administrator, the Governor is required to submit an area that the Governor considers appropriate for redesignation. Within 120 days after receiving this information from the Governor, the Administrator, after making modifications that the Administrator deems necessary, is required to promulgate the redesignation.

Q: DO OTHER STATES HAVE PERMITTING PROVISIONS SPECIFIC TO NONATTAINMENT AREAS?

A: Yes, all States have rules similar to the major PSD and Nonattainment NSR rules in 20.2.74 and 20.2.79 NMAC, respectively. Several States and numerous Tribal areas have

[11] Although the nonattainment process has historically been initiated by the Administrator, the Governor can submit a designation request under Section 107(d)(3)(D) which states: "(D) The Governor of any State may, on the Governor's own motion, submit to the Administrator a revised designation of any area or portion thereof within the State. Within 18 months of receipt of a complete State redesignation submittal, the Administrator shall approve or deny such redesignation. The submission of a redesignation by a Governor shall not affect the effectiveness or enforceability of the applicable implementation plan for the State."

delegated authority or Federal Implementation Plans (FIPs) that adopt Federal rules directly rather than adopt a SIP. However, SIPs must be approved by EPA and are required to be at least as stringent as the Federal rules. As a result, most states rules are very similar with regard to permitting requirements in designated nonattainment areas.

Q: HOW HAVE OZONE NONATTAINMENT CLASSIFICATION CHANGES BEEN HANDLED IN OTHER STATES?

A: The majority of my time is spent on permitting issues in the HGB ozone nonattainment area. Since the ozone NAAQS has been established in its current form, the area has been subject to nonattainment designations for the 1997 ozone NAAQS, the 2008 ozone NAAQS and most recently, the 2015 ozone NAAQS. The HGB was originally designed as moderate for the 1997 ozone standard, but upon request of the Texas Governor, bumped up to severe in 2008. In December 2018, the Texas Commission on Environmental Quality submitted a redesignation request to attainment for the 1997 standard and maintenance plan SIP revision to EPA, which was approved by EPA in February 2020.[12] The HGB is classified as serious under the 2008 ozone standard, and as marginal under the 2015 ozone standard.

At each of these classification designations, different permitting requirements were triggered with regard to major source threshold definitions, major modification definitions, contemporaneous netting thresholds, and emission offset ratios. It is important to note that each of these transitions in the permitting rule requirements were enacted at the time of Final Action by EPA published in the Federal Register. In short, permits are issued under the attainment or nonattainment designation in place at the time of permit issuance. Without a date certain for the transition of permit requirements based on a formal designation date, State permitting authorities would be forced to operate in an arbitrary manner when reviewing permit applications.

[12] EPA website at https://www.govinfo.gov/content/pkg/FR-2020-02-14/pdf/2020-02053.pdf#page=1

I am not aware of any State regulating an EPA designated attainment area, as if it were a nonattainment area, either before or after the nonattainment area definition revision in the 1990 CAA, based on monitoring data which shows a NAAQS exceedance.

D. OZONE-SPECIFIC NONATTAINMENT ISSUES

Q: WHAT ARE SOME OF THE CHALLENGES WITH OZONE NONATTAINMENT DESIGNATION COMPARED TO OTHER CRITERIA POLLUTANTS?

A: There are unique challenges with ozone pollution. Unlike the other criteria pollutants, ozone is not emitted directly from a source, but is created by chemical reactions involving NOx and VOCs in the presence of sunlight. The photochemistry of ozone formation is complex. Some VOC compounds like ethylene, propylene, 1,3-butadiene, and butenes are more highly reactive than other VOCs in the ozone formation chemistry. Ozone formation in certain areas is better managed by controlling NOx emissions, and in other areas ozone formation is best controlled by limiting highly reactive VOCs. It depends on whether a particular location is in a NOx or VOC limited airshed with regard to ozone formation.

The NOx and VOC precursor emissions to ozone formation comes from a combination of biogenic, mobile, off-road, commercial, and industry sources, making the implementation of effective emission reduction control measures complicated.

The photochemical formation of ozone also takes time to complete. Therefore, the highest concentrations are typically not where the precursor pollutants are generated, but rather at downwind locations. Transport of ozone across State and International borders complicates effective emission reduction even more.

Q: HOW DO STATES TYPICALLY ADDRESS THESE COMPLEXITIES?

A: Performing area-specific comprehensive studies is the established way to develop scientifically based ozone reduction strategies. Ultimately, ozone modeling using a complex photochemical grid model like the Comprehensive Air Quality Model with Extensions (CAMx) will be needed to evaluate potential ozone control strategies. These models are very data intensive and will require speciated and gridded emissions inventory

data to determine the amounts of specific VOCs entering the airshed, as well as the NOx emissions and many other variables. A study of high ozone episode days is important to determine both the meteorology and the possibility of ozone transport from outside the study area. With these model inputs, model predictions can be "calibrated" to actual monitored data during the episode days selected. After the model is calibrated to local data, a series of "what if" ozone control strategies can be evaluated to test the effectiveness of potential control measures.

Q: HAS THE NMED INIATED PLANS OR STUDIES TO CONDUCT THESE KIND OF COMPREHENSIVE STUDIES FOR EDDY AND LEA COUNTIES?

A: Yes, the NMED initiated an Ozone Attainment Initiative (OAI) in 2018 that includes Eddy and Lea Counties in the study area.[13] The OAI measures include the enhancement of emission inventories, continued monitoring and modeling (including transport), as well as developing rulemaking packages and participating in voluntary measures like EPA's Ozone Advance Program.

Q: HAS THE NMED INITIATED ANY OTHER ACTIONS TOWARD IMPLEMENTING OZONE PRECURSOR EMISSION CONTROLS?

A: Yes, in addition to the measures outlined above, the NMED has very recently (July 20, 2020) developed a draft regulation to "*establish emissions standards for volatile organic compounds (VOC) and nitrogen oxides (NOx) for oil and gas production and processing sources located in areas of the State within the Environmental Improvement Board's jurisdiction where ozone concentrations are exceeding 95% of the national ambient air quality standard.*"[14] The preliminary draft was released for public input prior to moving forward with a formal rulemaking petition with the EIB.

[13] New Mexico Environment Department Ozone Attainment Initiative Webpage at https://www.env.nm.gov/air-quality/o3-initiative/

[14] New Mexico Environment Department website at https://www.env.nm.gov/new-mexico-methane-strategy/wp-content/uploads/sites/15/2020/07/Draft-Ozone-Precursor-Rule-for-Oil-and-Natural-Gas-Sector-Version-Date-7.20.20.pdf

E. CONCLUSIONS REGARDING PETITION FOR RESCISSION OF GENERAL PERMITS IN QUESTION

Q: DO YOU HAVE AN OPINION REGARDING THE WILDEARTH GUARDIAN'S REQUEST FOR RESCISSION OF GENERAL CONSTRUCTION PERMIT (GCP) OIL AND GAS REGISTRATION NOS. 8729 AND 8730?

A: Yes. My conclusions are:

1) The areas where the sources authorized by General Construction Permit (GCP) Oil and Gas Registration Nos. 8729, 8730, and 8733 are currently designated by EPA as being in attainment with the 2015 Ozone NAAQS. All requirements for use of the GCP are otherwise met with these registrations and it would improper to rescind a registration on the nonattainment allegation under consideration in this hearing.

2) Until such time as the EPA Administrator changes the current designations, the NMED should not deny or rescind a GCP based on anything less than a final nonattainment redesignation by EPA.

3) Ozone formation photochemistry is a complex process and ozone mitigation strategies leading to ozone reduction rulemaking needs to be based on the best available analyses possible. Without a robust ozone model, it is not known if the NOx and VOC precursors authorized by these oil and gas sources will have any impact on the days for which highest ozone monitoring values occurred. As such, it is not reasonable to conclude that these sources will be unable to comply with the GCP on the basis of these sources being located in a county where monitors are registering design values over the NAAQS.

4) Ozone modeling must be done on a regional basis in order to address source-specific mitigation from industry sources, mobile sources, nonanthropogenic sources (fires,

lightning, stratospheric intrusion), and ozone transport issues. Only through these complex studies can a regulator implement measures that will maintain ambient concentrations below the NAAQS. It appears that the NMED is already implementing studies aimed at developing a comprehensive and meaningful regulatory framework. In my opinion, this established process should be allowed to continue, rather than making arbitrary decisions aimed at specific GCPs in the absence of sound scientific investigation.

RANDY PARMLEY EXHIBIT/REFERENCE LIST

Exhibit 1	Resume and List of Publications for Randy Parmley
Exhibit 2	NMED Memo – How Ozone Trends at New Mexico's Ozone Monitoring Stations Are Being Addressed – April 1, 2020
Exhibit 3	NMED 2015 Ozone NAAQS Designation Recommendation Report – September 2, 2016
Exhibit 4	EPA Ozone Advance Program Guidance Document – April 2016
Exhibit 5	NMED Ozone Attainment Initiative Air Quality Bureau, Control Strategies, September 26, 2019

STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF THE APPEALS OF THE AIR QUALITY PERMIT NO. 7482-M1 ISSUED TO 3 BEAR DELAWARE OPERATING – NM LLC **EIB No. 20-21(A)**

AND

IN THE MATTER OF THE PETITION FOR A HEARING REGARDING REGISTRATIONS NOS. 8729, 8730, AND 8733 UNDER GENERAL CONSTRUCTION PERMIT FOR OIL AND GAS **EIB No. 20-33(A)**

AFFIDAVIT OF RANDY PARMLEY

STATE OF TEXAS)
) **ss.**
COUNTY OF HARRIS)

Randy Parmley, being first duly sworn, deposes and states that the foregoing Direct Testimony o Randy Parmley constitutes my prepared direct testimony in this proceeding, my answers to th questions posed therein are true and correct to the best of my knowledge, information, and belief and the exhibits attached thereto were prepared or compiled by me or under my direction an supervision.

Randy Parmley

SWORN TO AND SUBSCRIBED before me on the 31st day of July, 2020.

Notary Public

KYLE PARRILLA
Notary Public, State of Texas
Comm. Expires 02-01-2021
Notary ID 129274998

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AFFIDAVIT OF RANDY PARMLEY

STATE OF TEXAS)
) **ss.**
COUNTY OF HARRIS)

Randy Parmley, being first duly sworn, deposes and states that the foregoing Direct Testimony o Randy Parmley constitutes my prepared direct testimony in this proceeding, my answers to th questions posed therein are true and correct to the best of my knowledge, information, and belief and the exhibits attached thereto were prepared or compiled by me or under my direction an supervision.

Randy Parmley

SWORN TO AND SUBSCRIBED before me on the 31st day of July, 2020.

Notary Public

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Notary Public, State of Texas
Comm. Expires 02-01-2021
Notary ID 129274998

DiSorbo
Environmental Consulting Firm

Randy D. Parmley, P.E.
Vice President of Business Development
Principal

Experience

Randy Parmley has over 35 years experience in air quality consulting. His experience encompasses almost every aspect of air quality in the petroleum industry. Randy has worked extensively with the refining, petrochemical, and terminals industries and has a strong reputation preparing and negotiating large and complex Flexible, PAL, PSD, Maintenance Startup and Shutdown (MSS) and Title V Permitting Projects as well as providing Consent Decree support. He has conducted regulatory, permitting, and modeling seminars in North America, South America, Europe and Asia. Randy's expert witness experience includes contested permit hearings, serving as a neutral mediation expert in merger and acquisition disputes, disaster/event modeling evaluations and testimony, and a variety of health-effect related toxic tort support efforts. He has provided deposition support to numerous legal clients, been disposed on several occasions, and testified in court for several industrial clients. His engineering and air quality background enable Randy to evaluate and communicate complex emission release and modeling concepts in an understandable and credible manner. As a result, he has been used by such firms as Winstead, Fulbright & Jaworski, Baker –Botts, Jones-Day, McGinnis Lochridge, Morgan-Lewis, and numerous other firms for expert witness support.

Randy's experience in working with capital project design teams to develop environmental analyses, NO_X SIP evaluations, air regulatory compliance assessments, toxic risk evaluations, control strategy applications, and a variety of air-related and interdisciplinary environmental consulting applications complete his professional profile. Randy has served as the lead permitting and modeling consultant for over a dozen multi-billion-dollar industrial expansions.

Areas of Expertise

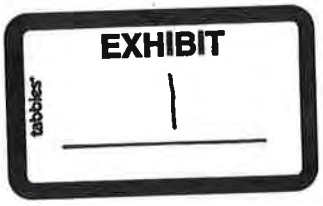
Air Permitting – Large Facility PSD Expansion Projects, Complex Bubble (i.e. PAL and Flexible) Permitting, MSS Permitting

Dispersion Modeling

Air Control Strategy Applications

Air Monitoring and Sampling

- President, Sage ATC Environmental Consulting, 2016 through July 2018
- Executive Vice President, Gulf Coast Marketing Leader, Sage Environmental Consulting, August, 2001 through 2016
- Manager, On-Site Business Services, URS Corporation Houston, 1999-2001
- Principle Engineer, URS Corporation, 1998 – 2001



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- Senior Consultant, McCulley, Frick, and Gilman, April,1998 - September, 1998
- Senior Staff Project Director, Radian Corporation, 1994- April, 1998.
- Section Head, Air Regulatory Analysis, Radian Corporation, 1993-1994.
- Group Leader, Atmospheric Sciences, Radian Corporation, 1991-1993.
- Senior Engineer, Radian Corporation, 1989-1994.
- Consultant/Environmental Engineer, Austin, TX, 1984-1988.
- Staff Engineer, Radian Corporation, Austin, TX, 1983.
- Environmental Engineer, Radian Corporation, 1981-1982
- Environmental Engineer, U.S. EPA, Region 6, 1980-1981.
- Environmental Engineer, LACE Engineering, Austin, TX, 1979.
- Environmental Engineer, University of Texas Center for Energy Studies, 1978.

Project Experience

Air Permitting, Emission Inventory, and Modeling

Randy's recent technical responsibilities include preparing, negotiating, implementing and providing compliance support for existing permits and pending permits for numerous large Gulf Coast refineries and chemical manufacturers. Randy has served as principal in-house consultant for large capital projects involving refinery coker units, fluid catalytic cracking units, low sulfur motor gasoline units, sulfur conversion units, ethylene production, and numerous types of plastics units. Randy has also developed and implemented complex bubble concept permitting, and Title V permitting. His responsibilities during these assignments included working closely with refinery and chemical plant economic planners and field operation managers as well as with environmental staff. Through these multi-year efforts, he gained a detailed and working knowledge of refinery and chemical plant operations and applicable regulations.

Randy was the Project Manager and Lead Negotiator for Federal Plant-wide Applicability Limit (PAL) permits in the Refining and Chemical industries Randy served as Project Director of some of the largest permitting projects in EPA Region 6 history. He has led the permitting and modeling efforts for over a dozen multibillion-dollar expansions manufacturing complexes on the Gulf Coast. Randy has served as an expert witness in dispersion modeling for contested permit hearings, event simulations, toxic risk evaluations, and a variety of toxic tort cases. He has used his modeling experience and biological background to perform toxic risk assessment for the refining, synthetic organic chemical metallurgical, pharmaceutical, and refining industries for both regulatory and legal purposes.

Randy has served as Project Director for several international modeling application projects involving neural net technology for predicting next day ozone pollution episodes.

Randy has served as Project Director and key modeling contact on several Department of Energy RCRA permit projects involving open burning/open detonation activities.

Randy served as Project Director for a Clean Air Act Amendment Title V permitting effort for one of the largest refineries in the United States. For this effort, he utilized his Title V expertise to direct the permit strategy, emission inventory development, air audit, compliance demonstration, and permit application tasks for this extensive permitting project. He has also completed other Title V strategy manual projects addressing site-specific considerations for SOCMI and refining clients. Randy has directed numerous Title V permit applications for various petroleum marketing and pipeline clients.

Randy has played a key role in assisting clients with Section 114 issues and has developed numerous alternative monitoring procedures (AMPs) for submittal to EPA.

Air Control Strategy Applications

Randy served as a key engineer in the development of a streamlined permitting approach for selective catalytic reduction technology as part of a joint refinery/TNRCC task force.

Randy has extensive knowledge of air pollution abatement technology and engineering principles to evaluate air pollution controls strategies for Lowest Achievable Emission Rate (LAER), Best Available Control Technology (BACT) and Reasonably Available Control Technology (RACT) for permitting and process modification studies.

Consulting services to the Texas Air Control Board (predecessor agency to TCEQ) involving the characterization, control options, and costs of controlling VOC sources in the Harris County area as part of the Texas SIP development process.

Randy served as an EPA Region 6 Control Technology Specialist for State Implementation Plan applications.

Randy has prior experience with Flue Gas Desulfurization (FGD). Randy has published technology reviews for both United States and Japanese Processes and analyzed and presented papers on market resource recovery potential for various FGD processes.

Air Monitoring and Sampling

Randy has experience with the establishment and management of local and regional ambient air monitoring networks. He designed the air monitoring network in Monterrey, Mexico and Alba Iulia, Romania. He served as data editor and coordinator for Houston Regional Monitoring (HRM) and PSD monitoring Networks. Randy prepared Radian's in-house PSD Ambient Air Monitoring Operator's Manual.

Randy has experience with the design of field measurement studies to quantify emission factors for the open burning of explosives.

Randy was assigned Project Director for several efforts to define and establish continuous emission monitoring and reporting requirements for industrial sources in Thailand and Chile.

Randy served on a TNRCC working group to define and develop appropriate continuous monitoring and parametric monitoring protocols for a wide range of industry types.

Education

B.S. Environmental Engineering, University of Texas, Austin 1979

B.S. Natural Science/ Chemistry, 1976

Professional Licenses

Registered Professional Engineers – Texas, Registration No. 75280

Professional Affiliations

Awardee U.S. EPA Pollution Fellowship, 1978-1979

Air and Waste Management Association

Publications

Parmley, R.D., I. Shnayder, and S. Dillard, "Strategies for Modeling Facility Maintenance Emissions," presented at the National Air and Waste Management Association Conference, June 2004

Parmley, R.D., "An Evaluation of the Flexible Permit/PAL Program in Texas", Presented at the National Petrochemicals and Refiners Association Annual Environmental Conference in New Orleans, Louisiana, April 2003.

Parmley, R. D. "Recommendations for a Continuous and Parametric Monitoring and Reporting Program for Chile", May 1998.

Parmley, R.D., T. DeFries, "Development of a Neural Net Model to Predict Next Day Ozone Concentrations in Bangkok, Thailand." Presented at the Pollution Control '97 International Conference in Bangkok, Thailand.

Parmley, R.D., G. Baker, "Feasibility Study for the Modernization of the Air Quality Monitoring Network in Venezuela", Presented at the Pollution Control '97 International Conference in Bangkok, Thailand.

Parmley, R. D. "Recommendations for an Industrial Monitoring and Reporting Program to Comply with Section 80 of the National Environmental Quality Act", March 1996.

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Parmley, R.D., Radian's PSD Operating Manual. Austin, TX, 1982.

Parmley, R.D. and P. Murin, "Characterization of VOC Emission Sources and Potentially Applicable Emission Control Technologies," Radian Corporation, Austin, TX, 1981.

Parmley, R.D., "Cost of Controlling Previously Uncontrolled Sources of VOC Emissions in Harris County," Radian Corporation, Austin, TX, 1981.

Parmley, R.D. and H.R. Parish, "Resource Recovery Cost for the Electric Power Industry," presented at the Electric Power Industry Conference and at the American Chemical Society Conference, 1980.

Parmley, R.D. and H.R. Parish, "Present Status of Development of Flue Gas Desulfurization in the United States," Center for Energy Studies Press, 280 pages, 1979.

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Deputy Secretary

Date: April 1, 2020

From: New Mexico Environment Department Air Quality Bureau

Subject: How Ozone Trends at New Mexico's Ozone Monitoring Stations are Being Addressed

This document discusses how ozone is regulated, the recent trends in monitored ozone values in New Mexico, and the steps that the New Mexico Environment Department (NMED or Department) is taking to address this issue.

How does the Department regulate ozone?

The Department's Air Quality Bureau operates a network of ambient air monitors that continually sample the air across New Mexico, with the exception of Bernalillo County and tribal lands, which are not under the Department's jurisdiction. Click here to go to the NMED Air Monitoring web site, where you can view photos of the monitoring sites, and learn more about what pollutants we monitor and their potential health effects.

The federal national ambient air quality standard (NAAQS) for ozone is currently set at 70 parts per billion (70 ppb). As discussed below, two of New Mexico's ozone monitors (Carlsbad and Hobbs) have recently monitored ozone concentrations in excess of the federal standard. However, readings from monitors showing exceedances of the NAAQS do not in themselves trigger changes to permitting or other actions on the part of NMED. Instead, the vehicle for addressing exceedances of the NAAQS is through designation of particular areas as in "attainment" or "non-attainment".

The process of determining whether an area is in attainment or in nonattainment of a NAAQS is triggered when the 'design value' (DV) for a pollutant is shown to be in excess of the standard. The DV is the three-year average of the annual fourth-highest daily monitored value. Thus, each year, for each NAAQS standard, the DV is calculated by averaging the fourth highest monitored reading for the previous year with the fourth highest reading of the two previous years. The resulting calculated value is the DV for that pollutant for that year. For ozone, this calculated value is compared to the 8-hour NAAQS ozone standard, which is 0.070 ppm. If the calculated DV is 0.0705 or above, it is rounded up to 0.071 ppm (0.0704 is rounded down to 0.070). At 0.071 the design value is in exceedance of the 8-hour NAAQS ozone standard. DVs for each monitor for each year are submitted to EPA for verification.

What areas of the state are showing exceedances of the ozone NAAQS?

The Carlsbad monitor has monitored exceedances resulting in the DV exceeding the 8-hour ozone NAAQS in the years 2017, 2018, and 2019. The Carlsbad monitored design values are 0.076, 0.083, and

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0.080 ppm, for each year, respectively. Similarly, the ozone monitor in Hobbs showed a DV exceedance in 2018. However, in 2019 the Hobbs monitor's DV demonstrated compliance with the NAAQS with a design value of 0.070 ppm. The first two-year (2017 and 2018) DVs for Carlsbad and Hobbs have been submitted to and verified by EPA. The 2019 DV for Carlsbad and Hobbs have been submitted but have yet to be verified by EPA.

How is the New Mexico Environment Department responding to these monitored exceedances?

The Air Quality Control Act requires the state to develop a plan, including regulations, to reduce ozone precursors in areas of the state that are exceeding 95% of the ozone standard. The AQB has been working diligently to address the rising ozone in those areas through its Ozone Attainment Initiative (OAI), which will include proposal of new regulations for reducing ozone precursors. The OAI is the vehicle through which NMED will investigate and implement strategies to ensure the region's 8-hour ozone levels return to full attainment status.

In order to fully understand the sources of VOC and NOx and what sectors are responsible for those pollutants, it is essential to determine whether and to what extent regional transport of these pollutants and mobile sources of these pollutants are contributing to the monitored exceedances. Thus, the state is currently conducting regional ozone modeling to determine what equipment, sources, and sectors are emitting the ozone precursors, and what portion of those emissions are being transported from other states and internationally. The results of this modeling will help guide what sources should be targeted for regulatory action to reduce their contribution to the ozone exceedances. The attached Fact Sheet provides further information regarding issues specific to ozone modeling.

Given the probability of contributions from oil and gas operations in the state, the first step of what will likely be several rulemakings under the OAI will be to reduce ozone precursors from the oil and gas industry located within the Permian and San Juan Basins. The Department intends to submit proposed rules to the Environmental Improvement Board by the end of 2020. It is anticipated that other rulemakings will follow, targeting emissions reductions from other industrial sectors, as well as the transportation sector.

The Department's current strategy is to rely upon the authority under its enabling statute, the Air Quality Control Act, to develop and implement the OAI and regulations to target and reduce the contributing ozone precursors. The plan and regulations implemented under the OAI will reduce those emissions, and the Department expects those reductions to reverse the current trend of rising ozone concentrations.

Questions?
Please contact Ted Schooley, Permit Section Chief, at 476-4334 or Kerwin Singleton, Planning Section Chief, at 476-4350.

NMED Fact Sheet on Ozone Modeling

How are ozone concentrations predicted?
Ozone is a secondary pollutant, meaning that rather than being directly emitted to the atmosphere from sources, it is created from a series of chemical reactions that occur between ozone precursors in the presence of sunlight. The precursor pollutants that contribute to ozone formation are nitrogen oxides (NO_X) and volatile organic compounds (VOC). Because chemical reactions must occur between precursors to form ozone, a chemical model (photochemical modeling) is required to predict ozone concentrations. Photochemical modeling is much more complex than the dispersion modeling typically performed for directly emitted pollutants.

How is ozone modeled?
Photochemical modeling (modeling chemical reactions in the presence of light) is generally conducted using gridded cells (or volumes) over the areas under evaluation. In each cell, pollutant concentrations are calculated using a series of mathematical equations that describe the physics and chemistry of the atmosphere. These mathematical equations describe emission rates in the cells, chemical reaction rates, and rates of mixing with neighboring cells. Chemical reaction rates within a cell will depend on the concentration of pollutants, the amount of sunlight, and temperature. Mixing to and from neighboring cells is determined using meteorological data and a separate meteorological model. Pollutant concentrations are then predicted by solving the set of mathematical equations.

How does ozone modeling differ from other criteria pollutant modeling?
Ozone (photochemical) modeling is significantly different from the dispersion modeling conducted for directly emitted criteria pollutants. In the atmosphere, the direction of criteria pollutants' flow and how the concentration disperses over time is controlled by meteorological factors. Dispersion modeling assumes that emissions from surrounding sources do not chemically interact. As described above, photochemical modeling predicts the mixing of NO_X and VOCs to calculate ozone concentrations.

Why is ozone modeled differently?
Chemical reactions govern the concentrations of ozone in the atmosphere. This is not true for most other criteria pollutants. Because chemical formation is the predominant source of ozone, chemistry must be considered. Additionally, interactions between precursors emitted from different sources can be quite important. Chemical formation and removal is significantly less important for other criteria pollutants.

When do we perform ozone modeling?
Due to the complexity of photochemical modeling, regulatory ozone modeling is typically performed only for the development or revision of state implementation plans (SIPs) or when there is a compelling reason for concern. This is currently the case in seven New Mexico counties, which have sources that cause or contribute to the high ozone concentrations. As discussed above, the initial step of the OAI will be photochemical modeling, to be performed by a contractor under the direction of the Bureau. This modeling effort will identify the different source categories that contribute to ozone formation and identify control strategies that will result in reduced ozone concentration in future years.

What is the cost of typical ozone modeling?
The cost of this modeling will be approximately two hundred and seventy thousand dollars ($270,000). A similar photochemical modeling project was completed for NMED, the Southern New Mexico Ozone Study, at a cost of approximately two hundred and fifty thousand dollars ($250,000).

NMED

New Mexico Environment Department

2015 Ozone NAAQS

DESIGNATION RECOMMENDATION REPORT

Air Quality Bureau
September 2, 2016

Table of Contents

1 Introduction

On October 1, 2015, the United States Environmental Protection Agency (EPA) revised the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS) from 0.075 parts per million to 0.070 parts per million (ppm) (80 FR 65291; October 26, 2015). Section 107(d)(1)(A) of the Federal Clean Air Act (CAA) requires states to submit to EPA recommendations on area designations no later than one year after the promulgation of a new or revised NAAQS. Areas are to be identified as attainment, nonattainment, or unclassifiable. The deadline for submitting these recommendations is October 1, 2016.

The State of New Mexico recommends that the counties under the jurisdiction of the New Mexico Environment Department (NMED), exclusive of tribal lands and Bernalillo County, be designated as identified in Table 1-1 below. These recommendations rely on air quality monitoring data using the most recent three consecutive years of quality-assured data (2013-2015) and EPA's February 25, 2016 Memorandum, Area Designations for the 2015 Ozone National Ambient Air Quality Standards (Guidance Memo), as the basis for its recommendations. The Guidance Memo can be found on EPA's website at www.epa.gov/ozone-designations/ozone-designations-guidance-and-data. The data for 2013-2015 for all ozone monitors are presented in Appendix A.

NMED conducted an analysis to determine whether New Mexico would recommend the presumptive boundary for Doña Ana County area designation, or propose an alternate boundary. EPA recommends that the Core Based Statistical Area (CBSA) serve as the presumptive boundary when considering the geographic boundaries of an ozone nonattainment area. Since the CBSA that covers Doña Ana County includes El Paso and Hudspeth Counties in Texas, NMED will use the Las Cruces Metropolitan Statistical Area (MSA). The Las Cruces MSA includes the entirety of Doña Ana County and serves as the presumptive boundary. To assist with the nonattainment boundary recommendation, NMED evaluated the 5 factors listed in Attachment 3 of the Guidance Memo, as follows:

- Air quality data;
- Emissions and emissions-related data;
- Meteorological data;
- Geography/topography; and
- Jurisdictional boundaries.

Based on the results of the analysis, NMED has decided to recommend an area smaller than the Las Cruces MSA as nonattainment.

Table 1-1: New Mexico County Designation Recommendations for the 2015 Ozone NAAQS.

County	2013-2015 Design Value (ppm)	Designation Recommendation
Bernalillo County	Not in NMED's jurisdiction	Not in NMED's jurisdiction
Catron County	No data	Attainment/Unclassifiable
Chaves County	No data	Attainment/Unclassifiable
Cibola County	No data	Attainment/Unclassifiable
Colfax County	No data	Attainment/Unclassifiable
Curry County	No data	Attainment/Unclassifiable
De Baca County	No data	Attainment/Unclassifiable
Doña Ana County	La Union --- 0.066	**Nonattainment - partial**
	Chaparral --- 0.067	
	Desert View --- 0.072	
	Santa Teresa --- 0.072	
	Solano --- 0.065	
Eddy County	Carlsbad --- 0.069	Attainment
Grant County	No data	Attainment/Unclassifiable
Guadalupe County	No data	Attainment/Unclassifiable
Harding County	No data	Attainment/Unclassifiable
Hidalgo County	No data	Attainment/Unclassifiable
Lea County	Hobbs --- 0.067	Attainment
Lincoln County	No data	Attainment/Unclassifiable
Los Alamos County	No data	Attainment/Unclassifiable
Luna County	No data	Attainment/Unclassifiable
McKinley County	No data	Attainment/Unclassifiable
Mora County	No data	Attainment/Unclassifiable
Otero County	No data	Attainment/Unclassifiable
Quay County	No data	Attainment/Unclassifiable
Rio Arriba County	Coyote Ranger District --- 0.065	Attainment/Unclassifiable
Roosevelt County	No data	Attainment/Unclassifiable
Sandoval County	Bernalillo --- 0.065	Attainment
San Juan County	Bloomfield --- 0.064	Attainment
	Navajo Lake --- 0.067	
	Substation --- 0.063	
San Miguel County	No data	Attainment/Unclassifiable
Santa Fe County	Santa Fe Airport --- 0.064	Attainment/Unclassifiable
Sierra County	No data	Attainment/Unclassifiable
Socorro County	No data	Attainment/Unclassifiable
Taos County	No data	Attainment/Unclassifiable
Torrance County	No data	Attainment/Unclassifiable
Union County	No data	Attainment/Unclassifiable
Valencia County	Los Lunas --- .066	Attainment/Unclassifiable
(**Bold** – exceeds NAAQS)		

2 Air Quality Data

The ozone monitoring network in Doña Ana County contains 5 federal regulatory design-value monitors operated and maintained in accordance with 40 CFR Parts 50, 53, and 58. Table 2-1 below contains information on the current ozone monitors in Doña Ana County. To determine compliance with the 2015 Ozone NAAQS, a design value must be calculated to compare to the level of the standard. The design value is determined by the 3-year average of the annual 4th highest 8-hour ozone average.

Table 2-1: Doña Ana County Monitoring Data (ppm).

Site Name	AQS ID #	4th Max 8-hour Average			Design Value (2013 – 2015)
		2013	2014	2015	
Desert View	**35-013-0021**	**.071**	**.072**	**.074**	**.072**
Santa Teresa	**35-013-0022**	**.080**	.066	.070	**.072**
La Union	35-013-0008	.067	.065	.070	.066
Chaparral	35-013-0020	.069	.067	.065	.067
Solano Road	35-013-0023	.064	.066	.066	.065
(**Bold** – exceeds NAAQS)					

Within the Doña Ana County monitoring network, two monitors have recorded levels that exceed the revised 8-hour ozone standard of 0.070 ppm for the years 2013-2015 (Figure 2-1). Both the Desert View and Santa Teresa monitors have a 2013-2015 design value of 0.072 ppm. Other monitors within Doña Ana County have design values between 0.065 and 0.067 ppm. Figure 2-2 below shows the location of ozone monitoring sites in Doña Ana County.

Figure 2-1: Doña Ana County 2013-2015 Ozone Monitoring Data.

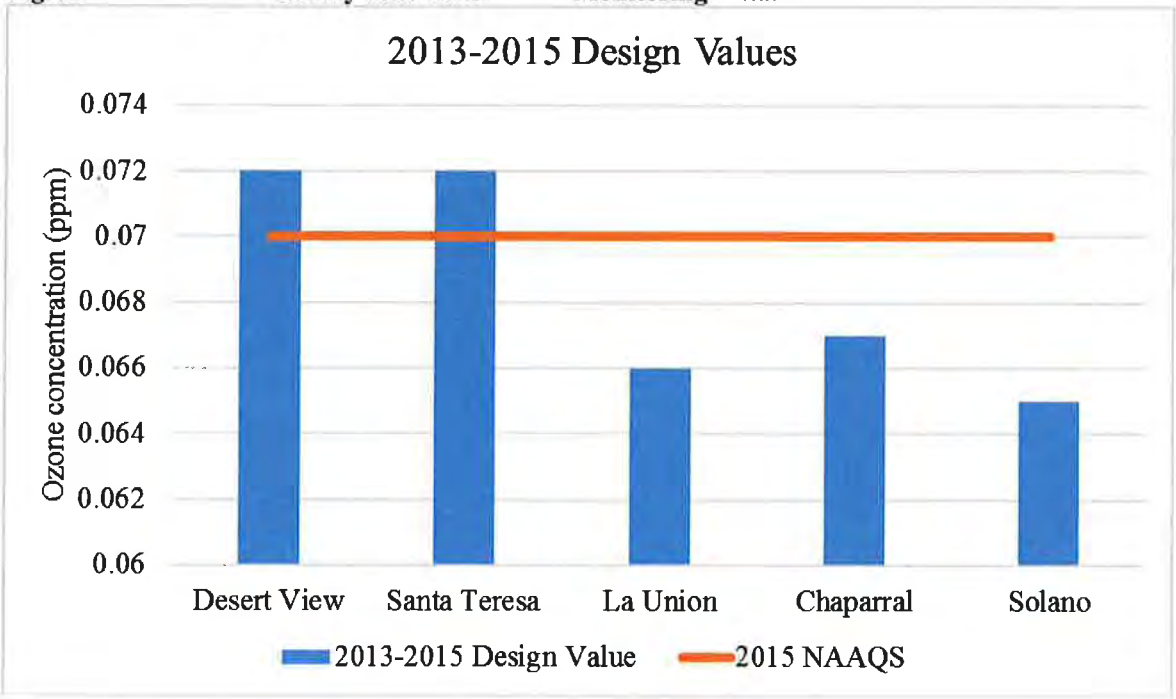
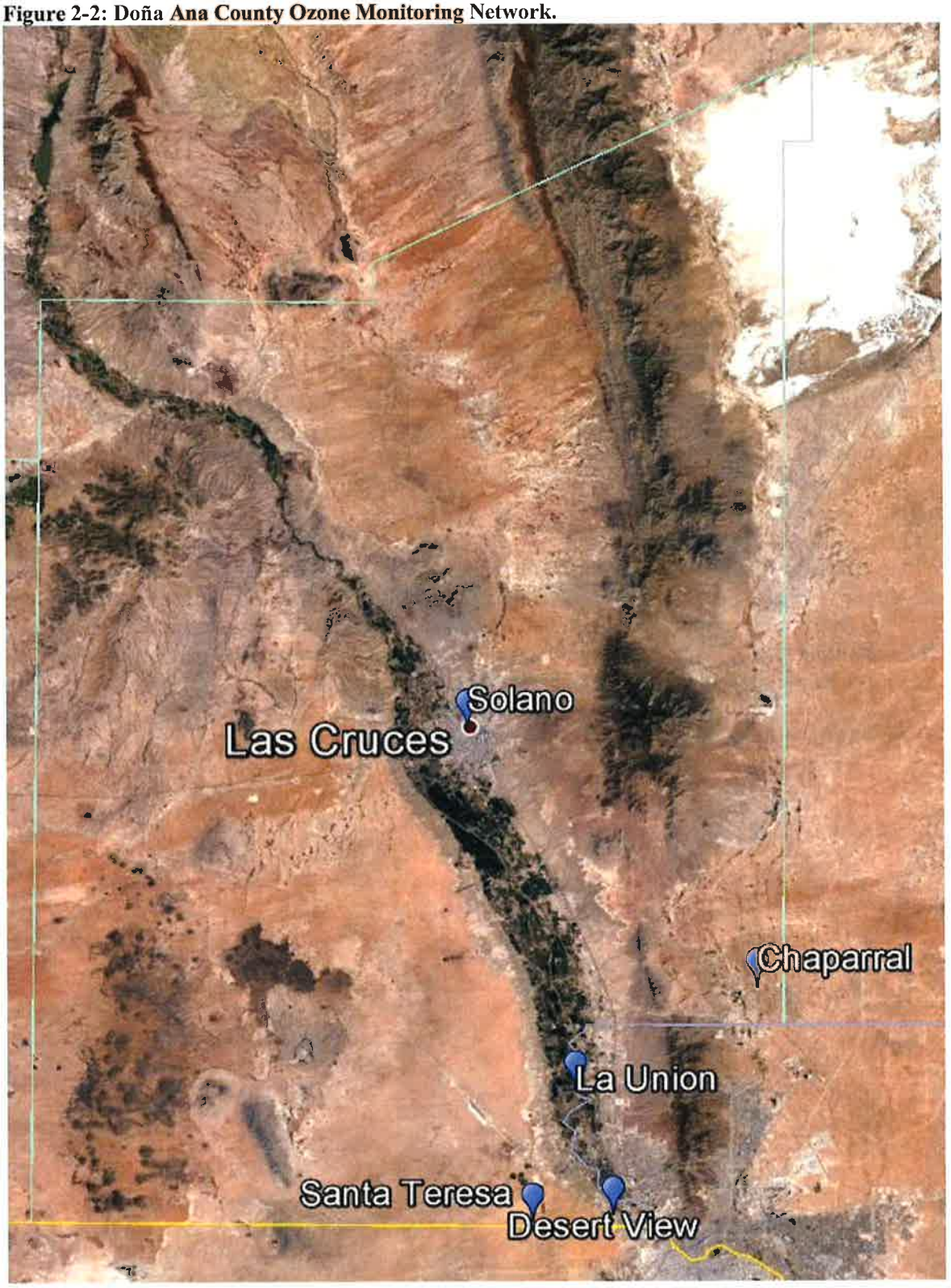


Figure 2-2: Doña Ana County Ozone Monitoring Network.

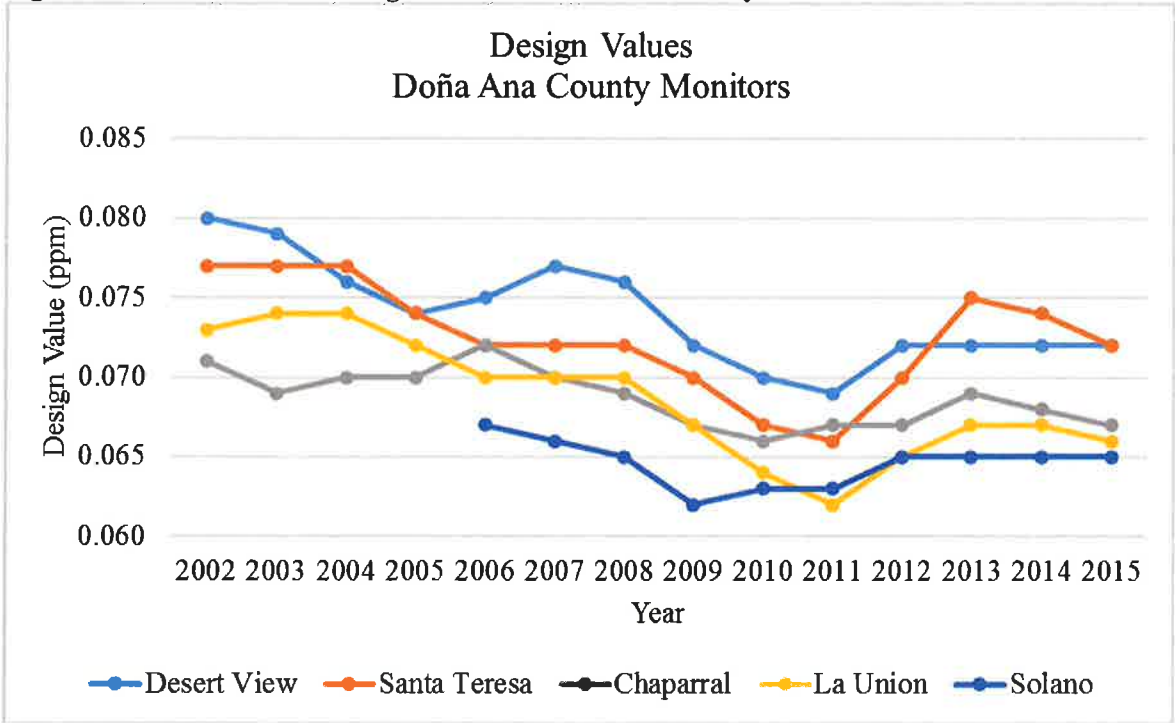


The two monitors that violate the NAAQS are both located in the southern-most portion of the county, north of Mexico and west of Texas. The monitors are located in the city of Sunland Park and the unincorporated area of Santa Teresa, New Mexico, near the international border with Mexico and the state line of Texas.

Established in June 2004, the Desert View monitor is located at 5935 Valle Vista in Sunland Park, New Mexico at an elevation of 3860 feet. This monitoring site measures NO_2, O_3, PM_{10}, $PM_{2.5}$, and meteorological data. Also established in June 2004, the Santa Teresa monitor is located at 104-2 Santa Teresa International Blvd, west of Sunland Park, New Mexico at an elevation of 4100 feet. This monitoring site measures NO_2, O_3, and meteorological data.

Historical 8-hr ozone design values for the Doña Ana County ozone monitors are shown in Figure 2-3 below.

Figure 2-3: Historical ozone design values for Doña Ana County.



3 Emissions and Emissions-related Data

Ozone is not emitted directly from specific sources, but rather is formed as the result of complex atmospheric processes of precursor gases. The primary precursor pollutants are nitrogen oxides (NO_x) and Volatile Organic Compounds (VOC). To determine the sources and levels of NO_x and VOC, NMED evaluated emissions data from Doña Ana County and nearby sources using the 2011 National Emissions Inventory (2011 NEIv2). For purposes of this analysis, NMED interpreted nearby sources to include those sources located in counties (U.S.) and municipalities (Mexico) surrounding the violating monitors within the El Paso-Las Cruces CBSA.

3.1 NO_x Emissions

Total NO_x emissions in Doña Ana County were estimated at 11,506 tons/year for 2011. On-road mobile sources comprise the majority of NO_x emissions, with 7,535 tons/year or 65% of all NO_x emissions. Area sources account for the second largest amount of NO_x emissions, with 2,278 tons/year. One point source in the county, the Rio Grande Generating Station, emitted more than 100 tons/year of NO_x (717 tons/year), accounting for 84% of point source NO_x emissions. The nearby counties have a similar emissions profile, as shown in Figure 3-1.

Emissions data for Ciudad Juárez is coarser than that for the U.S. counties, being classified only by area, mobile, and point sources. For purposes of comparison, NMED classified emissions into these three source categories by including fire emissions into area sources and combining nonroad and onroad emissions into mobile sources. Although a similar pattern for Cd. Juárez emission sources is seen in Figure 3-2, point sources account for a much larger portion of total NO_x emissions.

Figure 3-1: NO_x emissions by county and source category.

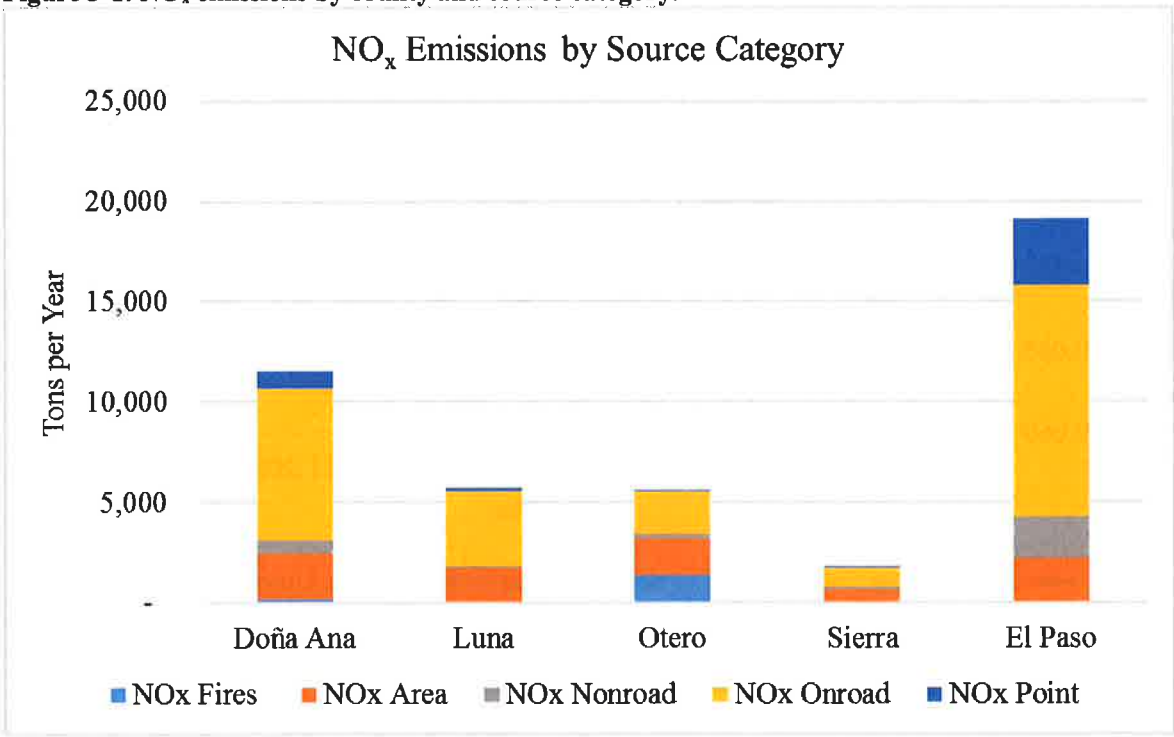
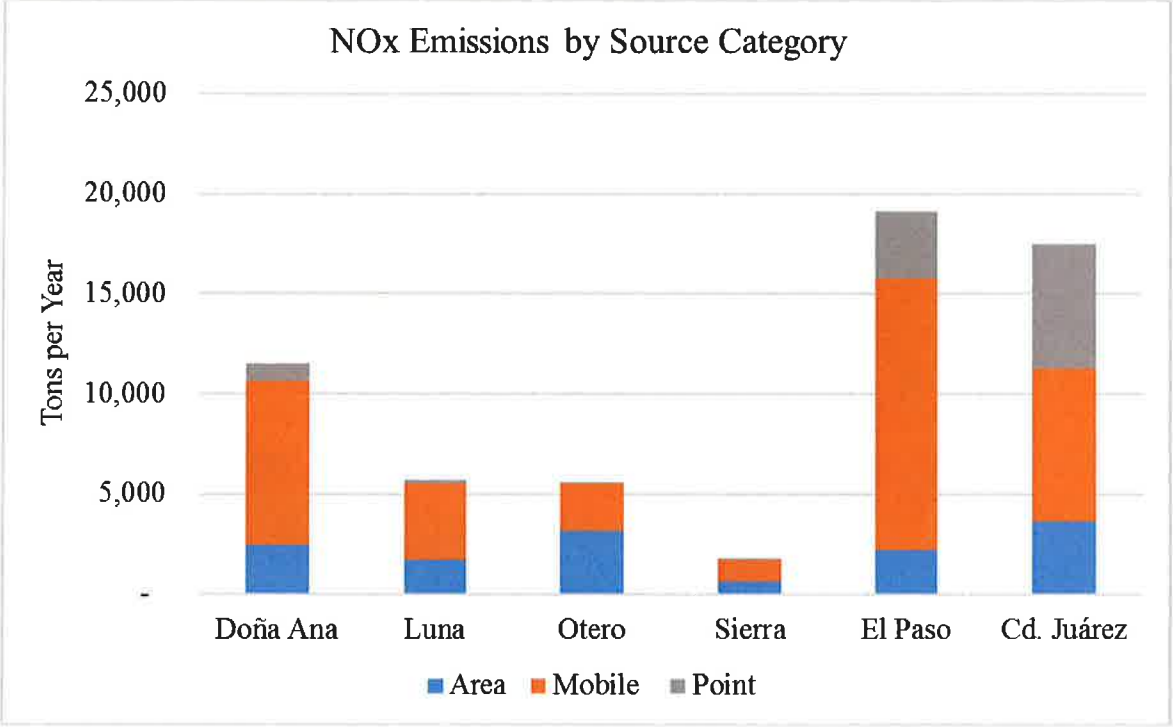


Figure 3-2: NO_x emissions by county including Cd. Juárez.



The areas with the highest NO_x emissions – Doña Ana County, El Paso County, and Cd. Juárez – comprise the Paso del Norte Airshed. El Paso County and Cd. Juárez account for 76% of total NO_x emissions in the airshed (Figure 3-3). Facilities in El Paso County and Cd. Juárez account for 92% of point source NO_x emissions in the airshed (Figure 3-4).

Figure 3-3: Percentage of total NO_x emissions in the Paso del Norte Airshed.

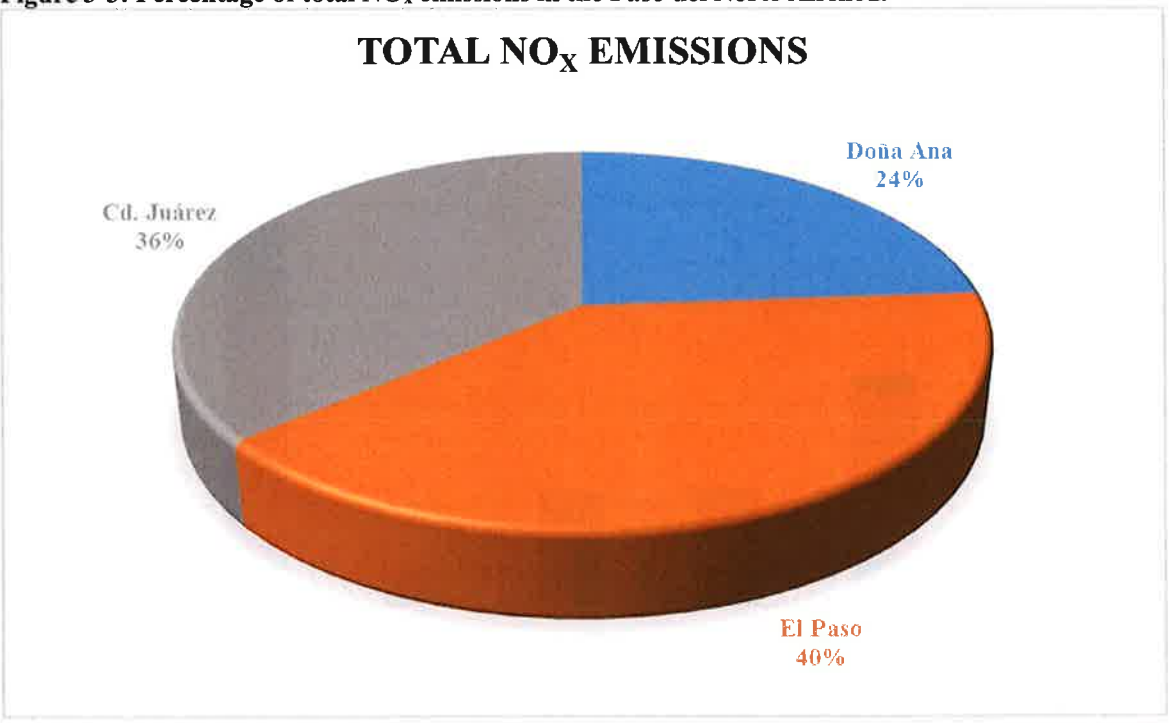
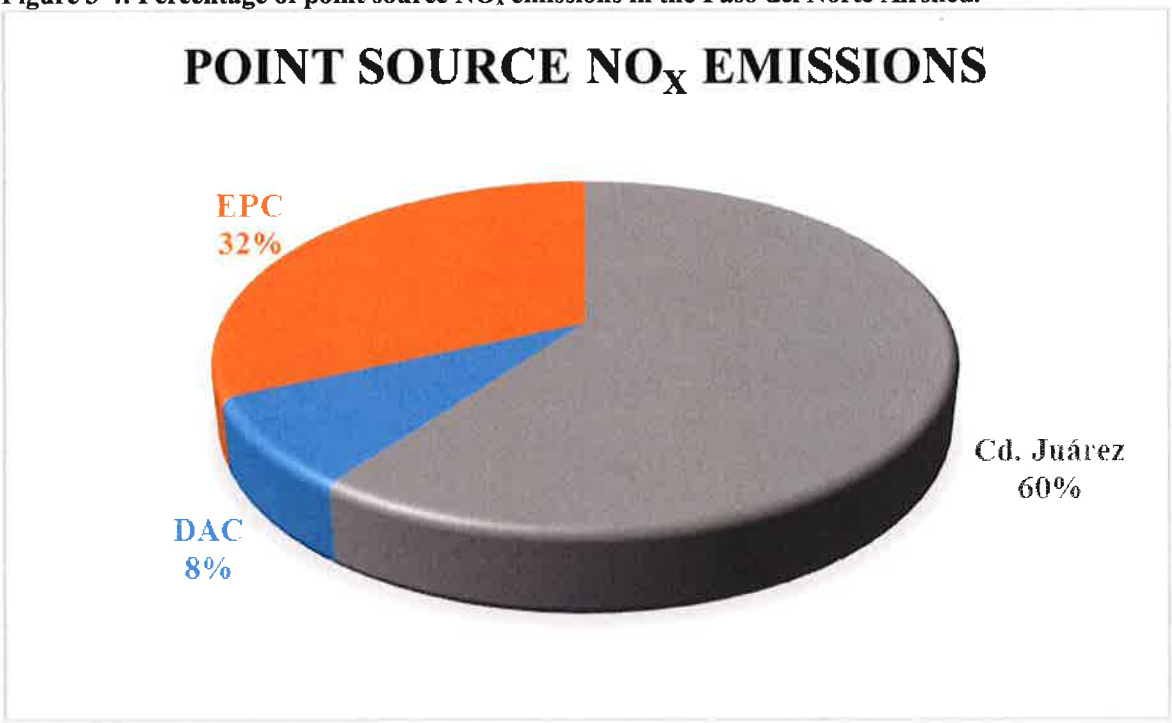


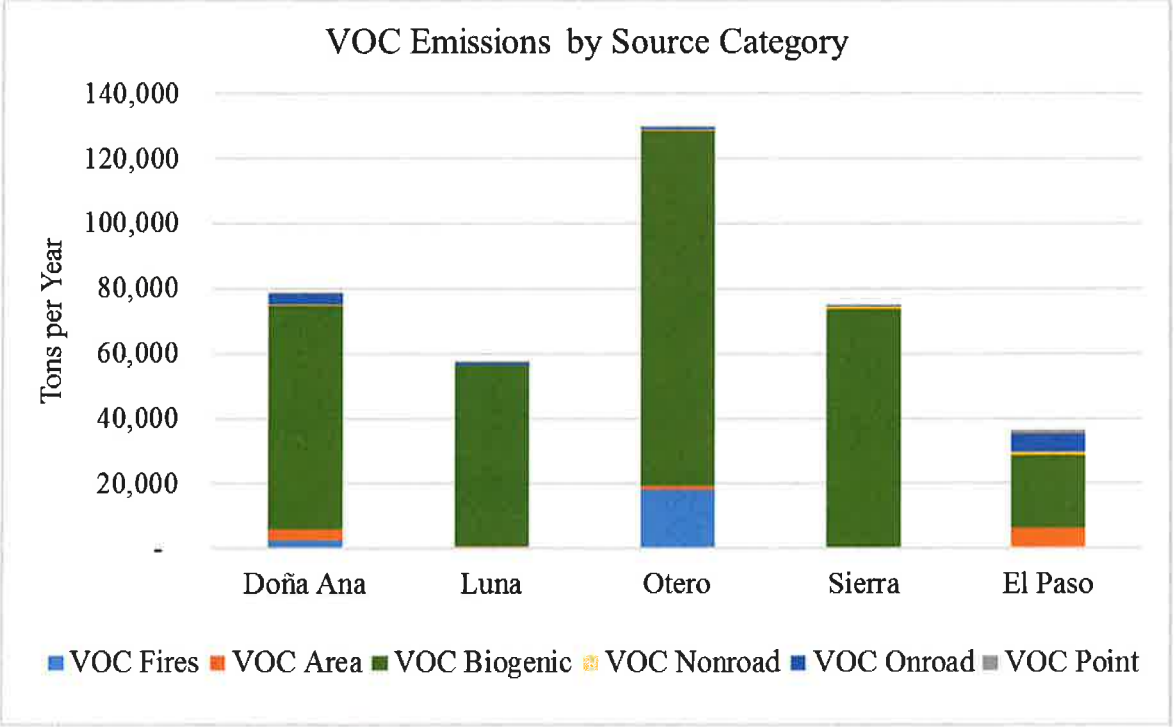
Figure 3-4: Percentage of point source NO_x emissions in the Paso del Norte Airshed.



3.2 VOC Emissions

Total VOC emissions for Doña Ana County were 78,432 tons/year in 2011. Biogenic emissions from plants and soil account for the largest source of emissions, with 68,667 tons/year or approximately 88% of all emissions. On-road mobile and area sources account for nearly the same amount of VOC emissions, with 3,154 tons/year and 3,140 tons/year respectively, followed by fires, with 2,869 tons/year. Most of the nearby counties follow this pattern with the exception of Otero County, which had much higher VOC emissions from fire than the other counties. This is most likely due to the 2011 Donaldson wildfire in the Lincoln National Forest.

Figure 3-5: VOC emissions by county and source category.



Similar to the NO_x emissions profile, the data for Cd. Juárez was classified only by area, mobile, and point sources. To compare emissions from the U.S. and Mexico, NMED classified emissions into these three source categories, but did not include biogenic VOC emissions. Although a similar pattern for Cd. Juárez emission sources is seen in Figure 3-6, area sources account for a much larger portion of total VOC emissions, excluding Otero County where fire accounted for 94% of area source VOC emissions in 2011.

In the Paso del Norte Airshed, El Paso County and Cd. Juárez account for 84% of total VOC emissions in the airshed (Figure 3-7). Facilities in El Paso County and Cd. Juárez account for 99% of point source VOC emissions in the airshed (Figure 3-8).

Figure 3-6: VOC emissions by county including Cd. Juárez.

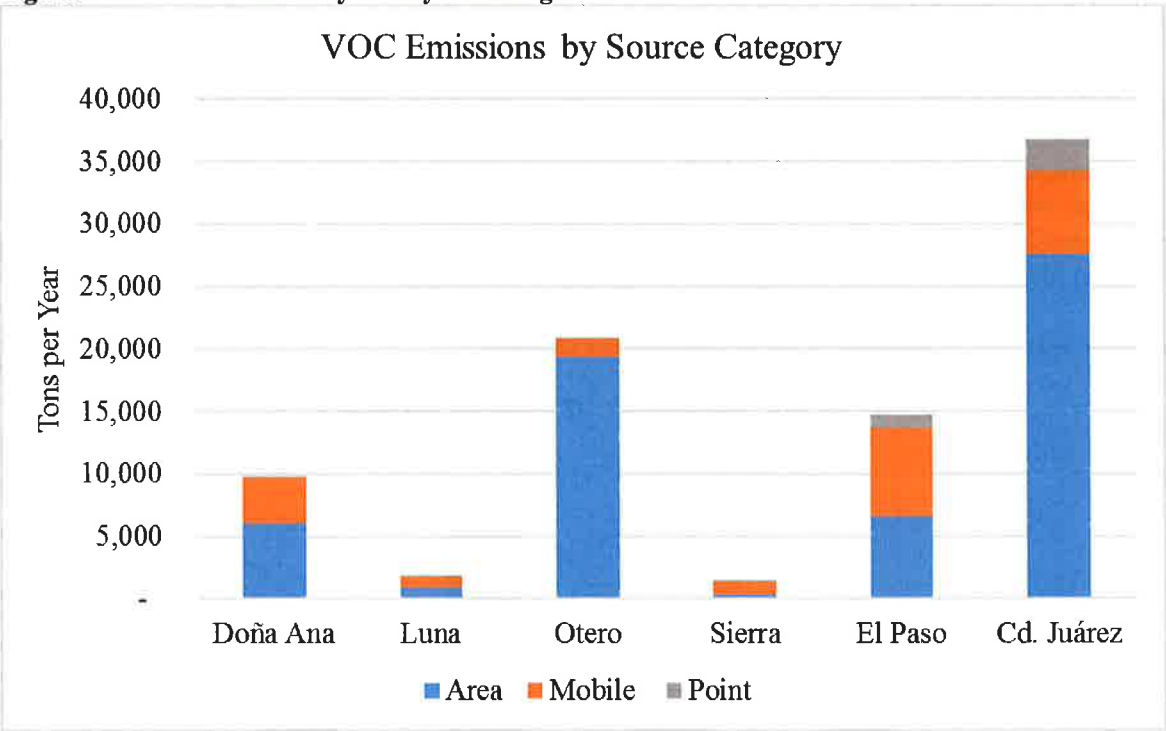


Figure 3-7: Percentage of total VOC emissions in the Paso del Norte Airshed.

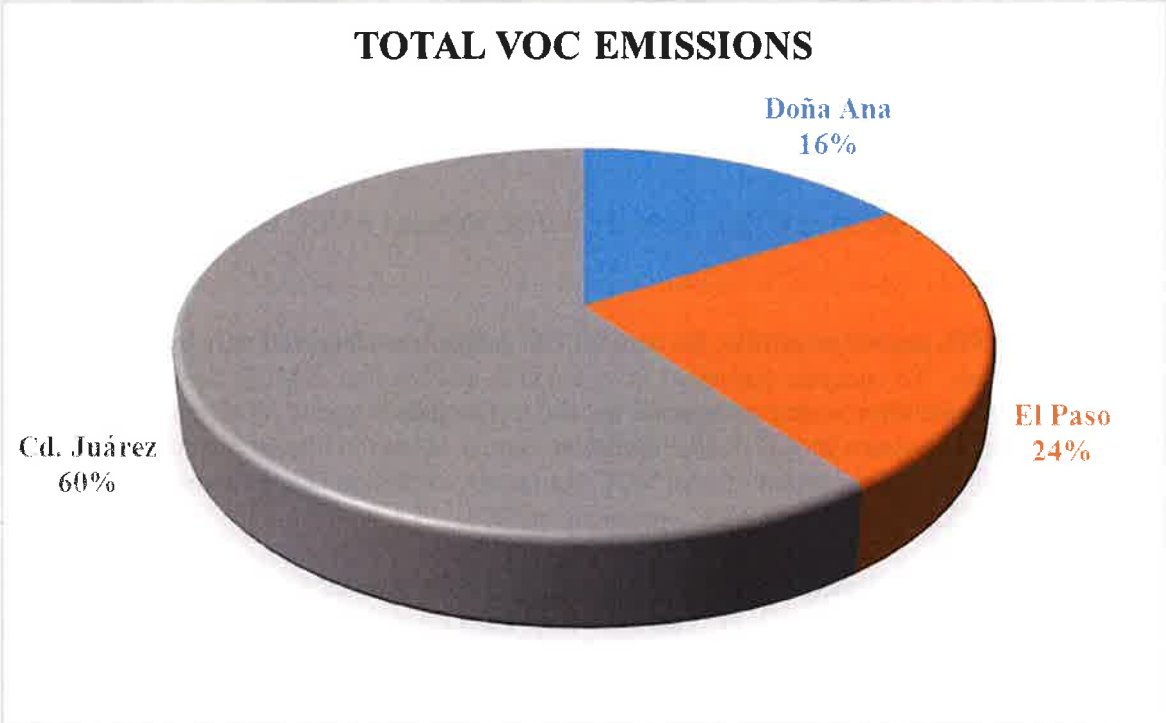
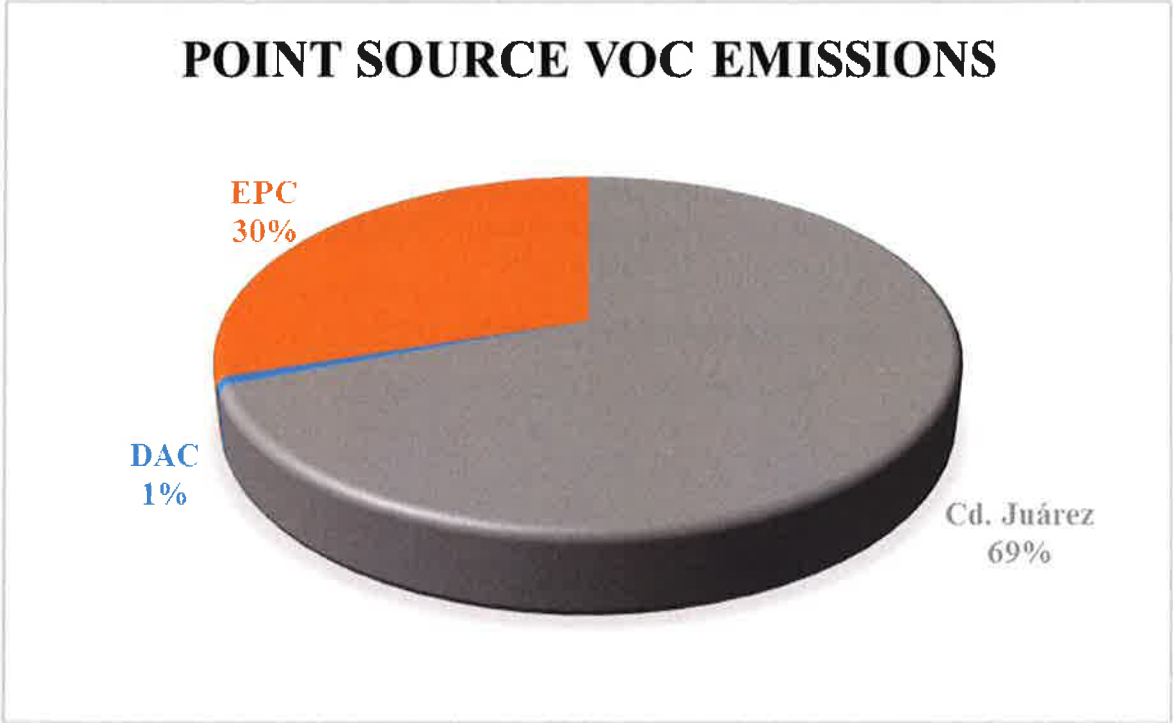


Figure 3-8: Percentage of point source VOC emissions in the Paso del Norte Airshed.



3.3 Population and Degree of Urbanization

Population estimates and related data were obtained from the U.S. Census Bureau and the National Institute of Statistics and Geography in Mexico and are summarized in Table 3-1, below. Estimates for 2014 indicate that approximately 2.4 million people live in Doña Ana County, El Paso County and Cd. Juárez. The majority of the population in the airshed lives in the heavily urbanized areas in the city of El Paso and Cd. Juárez. Doña Ana County residents make up approximately 9% of this population with the majority living in and around the city of Las Cruces, nearly 40 miles to the north of the violating monitors.

To estimate the population in Doña Ana County living near the violating monitors, NMED used 2014 U.S. Census estimates from the city of Sunland Park, and the Census Designated Places of La Union and Santa Teresa (Sunland Park Area). These areas cover approximately 26.5 mi^2 with a population of 20,324. Although the resulting population density of 767 people/mi^2 would classify this area as rural, the U.S. Census Bureau classifies them as urban due to the close proximity and interconnectedness to El Paso and Cd. Juárez.

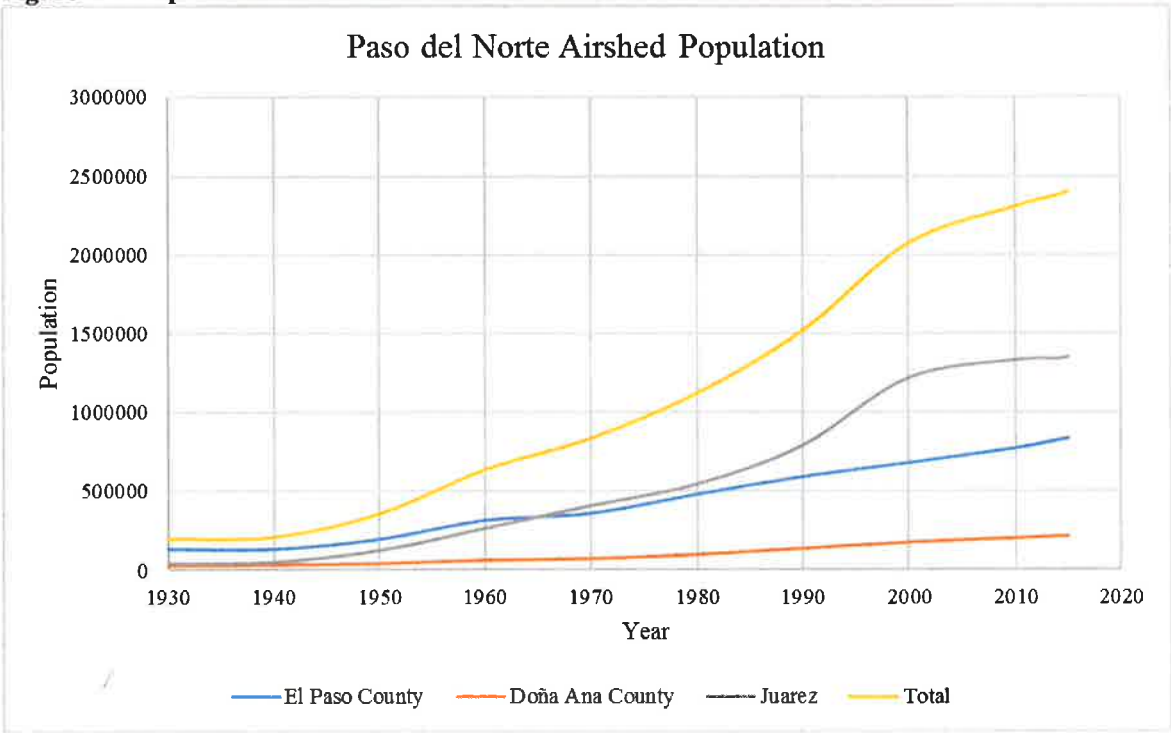
Table 3-1: Population and Population Density.

	Doña Ana County	El Paso County	Cd. Juárez	Sunland Park Area
Population	212,942	823,862	1,341,717	20,324
Land Area (mi^2)	3,808	1,013	73	26.5
Density (people/mi^2)	56	813	18,380	767

After experiencing steady population growth of 4.2% annually throughout the 20th century, Doña Ana County, El Paso County, and Cd. Juárez saw slow to moderate growth from 2000 to 2010 with a 1.1% annual growth rate. This slowdown in growth continued from 2010 to 2014. Much of these population trends are driven by the core urban areas of El Paso and Cd. Juárez (Figure 3-9).

From 2010 to 2014 the Sunland Park Area grew from 18,903 to 20,324 residents for an annual growth rate of 1.9%. Although this is much larger than the 0.79% growth rate for the entire area during this time, the absolute number of people is small.

Figure 3-9: Population trends in the Paso del Norte Airshed.



3.4 Traffic and Commuting Patterns

The major thoroughfares in Doña Ana County are Interstate 25 and Interstate 10. Most vehicular traffic in the county is concentrated in the central and southern parts of the county, in and around Las Cruces, as well as along Interstate 10 which connects to El Paso. Using the Vehicle Miles Traveled (VMT) spreadsheet provided by EPA, Doña Ana County had a total VMT of 2.3 billion miles in 2011. El Paso County had more than double this VMT in 2011 with a total of 5.6 billion miles.

In the Sunland Park Area, the majority of vehicular traffic is limited to a few major thoroughfares, including but not limited to NM Hwy. 28, McNutt Rd., the Pete V. Domenici Memorial Hwy., Country Club Rd., Sunland Park Dr., and Racetrack Dr. Using average daily traffic (ADT) data provided by the El Paso Metropolitan Planning Organization (Appendix B),

NMED calculated the Sunland Park Area's VMT to be 62.9 million or 2.7% of the total county VMT (Table 3-2).

Table 3-2. VMT for the Sunland Park Area.

Road/Highway	Distance in miles	ADT	VMT
Hwy 225	3.35	4,560	5,575,740
Hwy 28	5.91	5,510	5,950,778
Hwy 183	1.00	1,080	394,200
Hwy 182	0.98	2,010	718,977
Alvarez Rd/Hwy 273	8.08	11,410	7,233,862
McNutt Rd/Hwy 273	6.69	34,050	20,331,814
Pete Domenici/Hwy 136	7.55	18,360	15,090,852
Airport Rd	1.55	2,920	1,651,990
Sunland Park Dr	0.5	15,390	2,808,675
Racetrack Dr	0.9	1,860	611,010
Country Club Rd	0.57	12,360	2,571,498
Total	**37.08**	**109,510**	**62,939,396**

According to U.S. Census Bureau's 2009-2013 American Community Survey, 14,423 or 16.6% of Doña Ana County residents travel to another county for work (Table 3-3). Although only 5.8% of El Paso County residents travel to another county for work, the absolute number of commuters is the greatest at 18,901. For the remaining counties in New Mexico, 3,991 residents travel to another county for work.

Table 3-3. Travel patterns to work by county.

County Name	Total Workers	Work in Another County	Percent
Doña Ana County	86,740	14,423	16.6%
Luna County	8,538	1,059	12.4%
Otero County	24,232	2,827	11.7%
Sierra County	3,740	105	2.8%
El Paso County	326,519	18,901	5.7%
Total	**449,769**	**37,315**	**8.3%**

Approximately 42% of all inter-county work trips originated in Doña Ana County with a final destination of El Paso County (Table 3-4). Trips originating in El Paso County with a destination of Doña Ana County comprise nearly 29% of all inter-county work trips. More than 70% of the work trips in the region occur between Doña Ana County and El Paso County. Approximately 14% of residents in the U.S. travel to Mexico for work with most of the commuters residing in El Paso County. Another 8.6% of inter-county work trips originate in Luna, Otero, or Sierra Counties with a final destination of Doña Ana County or El Paso County.

Table 3-4. Inter-county work trips.

Residence	Place of Work	Commuting Flow	Percent of Total
Doña Ana County	Luna County	372	1.3%
Doña Ana County	Otero County	528	1.9%
Doña Ana County	Sierra County	245	0.9%
Doña Ana County	El Paso County	11,941	42.0%
Doña Ana County	Mexico	105	0.4%
Luna County	Doña Ana County	339	1.2%
Luna County	El Paso County	55	0.2%
Luna County	Mexico	70	0.2%
Otero County	Doña Ana County	820	2.9%
Otero County	El Paso County	1,181	4.2%
Sierra County	Doña Ana County	21	0.1%
El Paso County	Doña Ana County	8,211	28.9%
El Paso County	Luna County	263	0.9%
El Paso County	Otero County	550	1.9%
El Paso County	Mexico	3,740	13.2%

4 Meteorology

To determine the predominant wind patterns in the area, NMED used data from 2013 to 2015 to create wind rose charts for each violating monitor in Doña Ana County. In addition, the NMED ran HYSPLIT 24-hour back trajectory models for the two violating monitors in Doña Ana County.

Figures 10-1a to 10-24b in Appendix C depict wind data for each violating monitor on the dates with the 4 highest 8-hr ozone averages from 2013-2015. These are arranged by monitoring site and date and include wind roses, which show the frequency of wind direction, and HYSPLIT 24-hour back trajectories, which show the air parcels' likely origins before reaching the monitoring sites. Each trajectory image includes a close-up inset created as a Flash Map from the same kmz file as the Google Earth view.

The majority of wind roses show that winds were relatively calm (below 10 mph) and blew from the east to west, east-southeast to west-northwest, or south-southeast to north-northwest direction. Likewise, the back trajectories show that air parcels moved from these directions to the monitoring sites during the hours contributing to the elevated ozone concentrations. This indicates that winds passed through El Paso and Cd. Juárez before reaching the monitoring sites in New Mexico.

Figure 10-25 in Appendix C shows HYSPLIT back trajectories arriving at the El Paso, TX violating monitor using the EPA designations mapping tool. The trajectories similarly show that air parcels primarily originate from Texas and Mexico. The EPA designations mapping tool may be found at www.epa.gov/ozone-designations/ozone-designations-guidance-and-data.

5 Geography/Topography

The Paso del Norte region lies along the Rio Grande Valley, encompassing El Paso County, TX; Doña Ana County, NM; and Municipio de Ciudad Juárez, Chihuahua, MX. The Rio Grande flows south through Doña Ana County and the Mesilla Valley, serving as a common boundary for the City of Sunland Park, NM, the City of El Paso, TX and Ciudad Juárez, Chihuahua, MX. As the Rio Grande exits New Mexico, the river bends around a large igneous formation named Mount Cristo Rey. The river continues through the valley in a southeasterly direction between El Paso and Ciudad Juárez into the Brad Valley of Texas.

The topography of the Paso del Norte region plays an important part in the transportation of air pollution and is used as a starting point to define the region's air basin boundaries. Elevations in the Paso del Norte region range from 3,773 feet above mean sea level at the valley floor to 6,070 feet above mean sea level at Ranger Peak in the Franklin Mountains. The Franklin Mountains lie to the east/northeast of the Sunland Park area in Texas and the Sierra Juárez range lies to the south in Mexico. Both the Franklin and Sierra Juárez ranges help to define airflow patterns in the Sunland Park area through the creation of downward wind flows off the mountains into the valley areas.

6 Jurisdictional Boundaries

The Paso del Norte region is a unique bi-national, tristate community with shared air pollution problems. The Paso del Norte Air Basin is defined as El Paso County, TX, portions of Doña Ana County, NM and Cd. Juárez, Chihuahua. Within the state of New Mexico, NMED has jurisdictional authority to implement and enforce state and federal air quality regulations with the exception of Bernalillo County in central New Mexico and tribal lands. No tribal lands exist within Doña Ana County.

Transportation planning and programing for the southern portion of Doña Ana County falls under the jurisdiction of the El Paso Metropolitan Planning Organization (MPO). The planning boundary for the MPO covers much of the Paso del Norte airshed in the U.S. For past and present nonattainment areas in the southern portion of Doña Ana County, the El Paso MPO conducts transportation conformity planning.

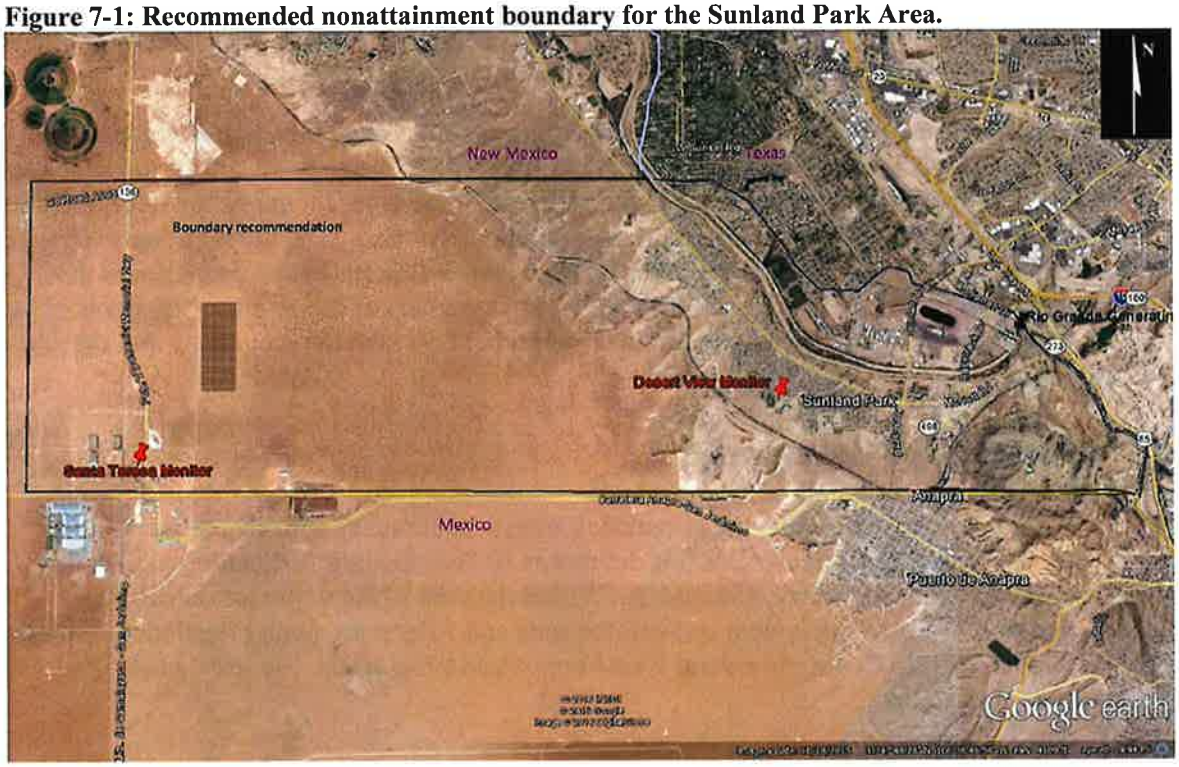
7 Recommended Nonattainment Area Boundary

The Sunland Park Area was previously designated nonattainment for the 1-hour ozone NAAQS in 1995. At that time, the state of New Mexico maintained that the predominant sources contributing to the ozone exceedances at the violating monitors were not within Doña Ana County or NMED's jurisdiction. Presently, the information provided above also supports this assertion. Although designations for nonattainment areas are presumptively based on the CBSA or MSA, basing the boundary on the Las Cruces MSA would result in limited emissions reductions outside of the Sunland Park Area.

NMED recommends a nonattainment area shown in Figure 7-1 and described as follows:

1. Bounded on the north by latitude N31°49'30" (red line);
2. Bounded on the south by the international border between New Mexico and Mexico (yellow line);
3. Bounded on the east by the New Mexico and Texas state line (gray line); and
4. Bounded on the west by longitude W106°42' (red line).

Figure 7-1: Recommended nonattainment boundary for the Sunland Park Area.



Doña Ana County as a whole accounts for 24% of total NO_x emissions (Figure 3-3) and 16% of total VOC emissions (Figure 3-7) in the region. Point sources within Doña Ana County contribute even less, accounting for 8% of NO_x emissions (Figure 3-4) and 1% of VOC emissions (Figure 3-8) in the region.

The largest and only major source for NO_x in Doña Ana County, the Rio Grande Generating Station, accounts for 84% of point source NO_x emissions and 80% of point source VOC emissions in the county. This facility is located in the Sunland Park Area and is included within the recommended nonattainment area.

The violating monitors (Desert View and Santa Teresa) are located in the southern most portion of the county near El Paso and Cd. Juárez. These monitors are approximately 35 miles south of the Solano monitoring site in Las Cruces, the second largest metropolitan area in New Mexico. As Figure 2-3 shows, the design values for the violating monitors are 0.004 ppm and 0.006 ppm higher than the Solano and La Union monitoring sites, respectively. The design value for the nearest site to the violating monitors, La Union, has not exceeded 0.070 ppm since 2005. The design value for the Solano site has never exceeded 0.067 ppm (2006). In contrast, the 2013-

2015 design value for El Paso is 0.071 ppm, slightly lower than the violating monitors in the Sunland Park Area. This indicates that ozone concentrations at the violating monitors are more indicative of the level monitored in El Paso than the La Union, Chaparral and Solano monitoring sites.

Based on the topography, prevailing winds, and close proximity to two major urban areas, it is evident that the violating monitors in the Sunland Park Area are not the result of emissions from New Mexico sources outside of the recommended nonattainment area.

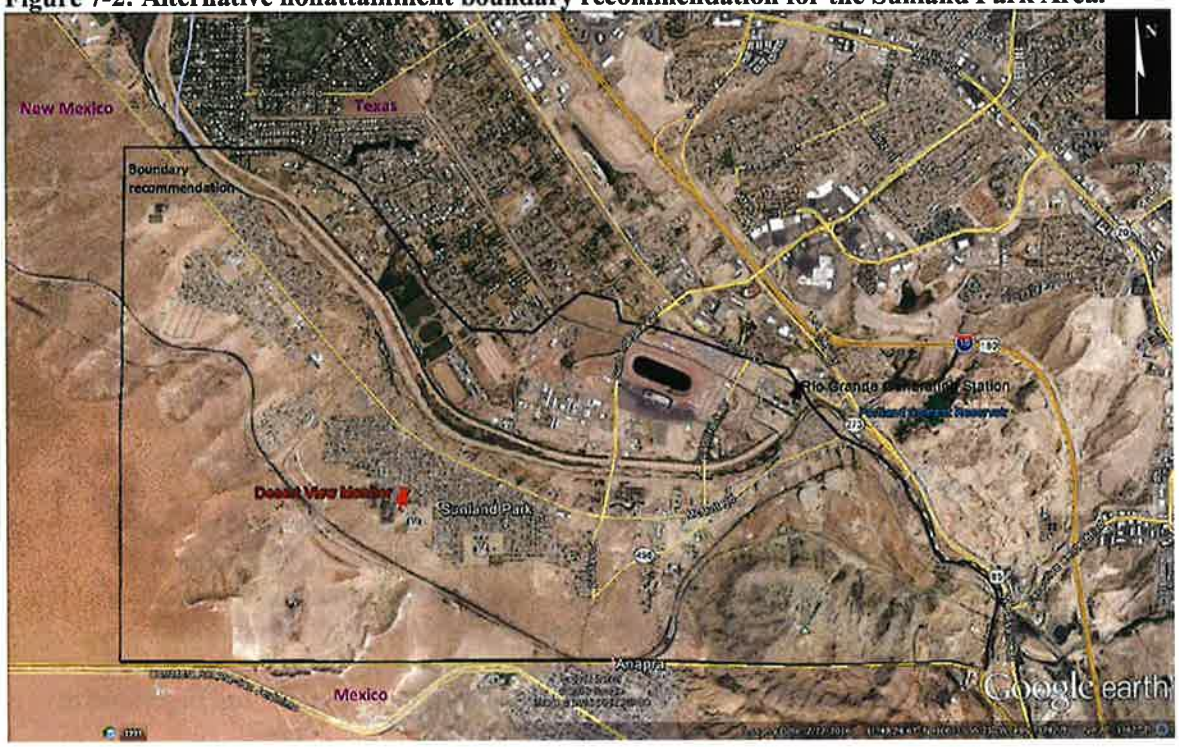
7.1 Alternative Boundary Recommendation

The Guidance Memo indicates that EPA will use data from 2014 to 2016 when determining final nonattainment boundaries. Preliminary data collected through August 2016 indicates that the Santa Teresa monitor will be in attainment of the standard. Although NMED will need to quality assure and validate this data before it can be used for a regulatory determination, the department would like to offer an alternative boundary recommendation for consideration should the current trend hold and the Santa Teresa monitor meets the standard. The alternative boundary recommendation would still include the majority of the population and emission sources in the Sunland Park Area while excluding uninhabited and largely undeveloped desert land.

NMED recommends an alternative nonattainment area shown in Figure 7-2 and described as follows:

1. Bounded on the north by latitude N31°49'30" (red line);
2. Bounded on the south by the international border between New Mexico and Mexico (yellow line);
3. Bounded on the east by the New Mexico and Texas state line (gray line); and
4. Bounded on the west by longitude W106°36'36" (red line).

Figure 7-2: Alternative nonattainment boundary recommendation for the Sunland Park Area.

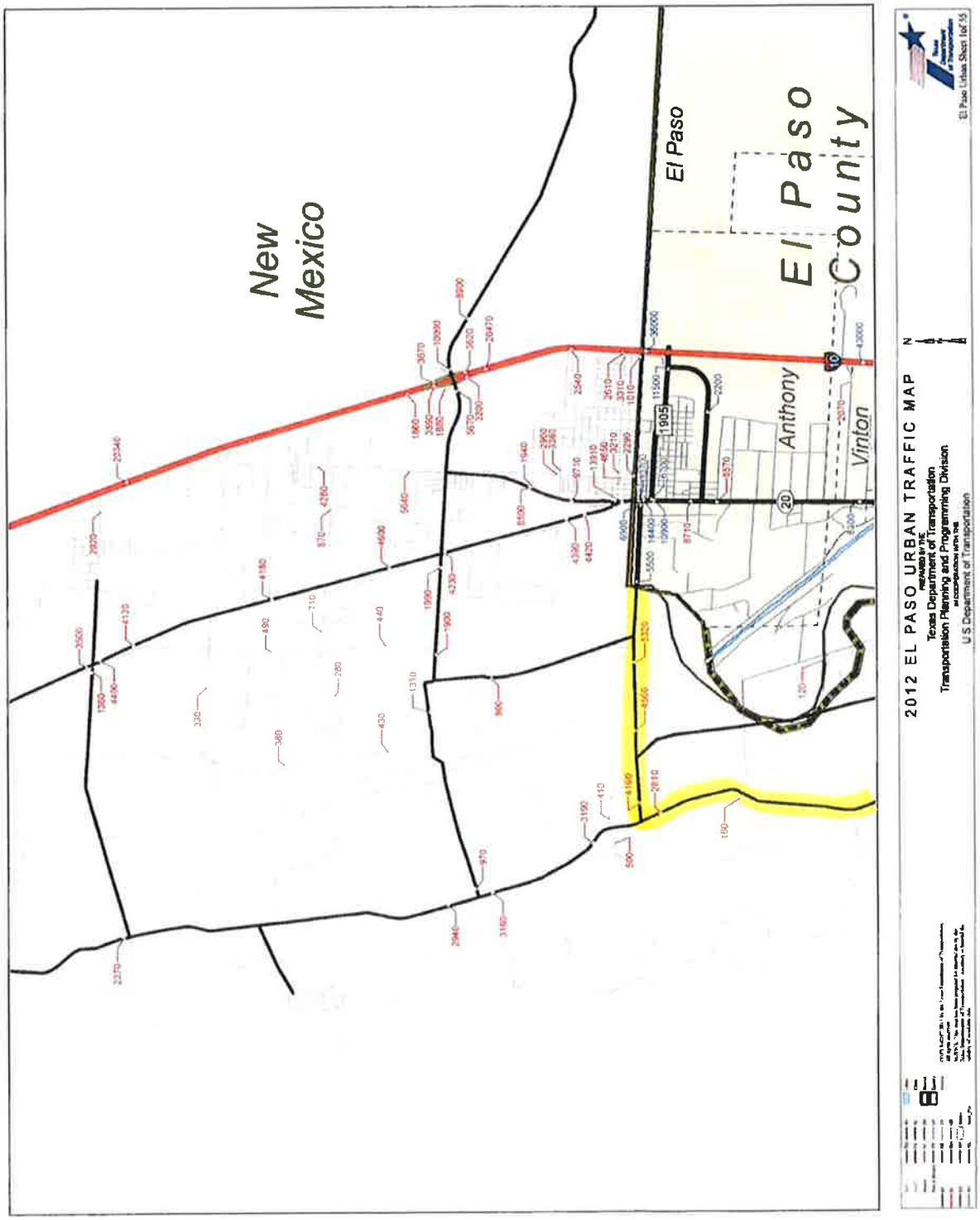


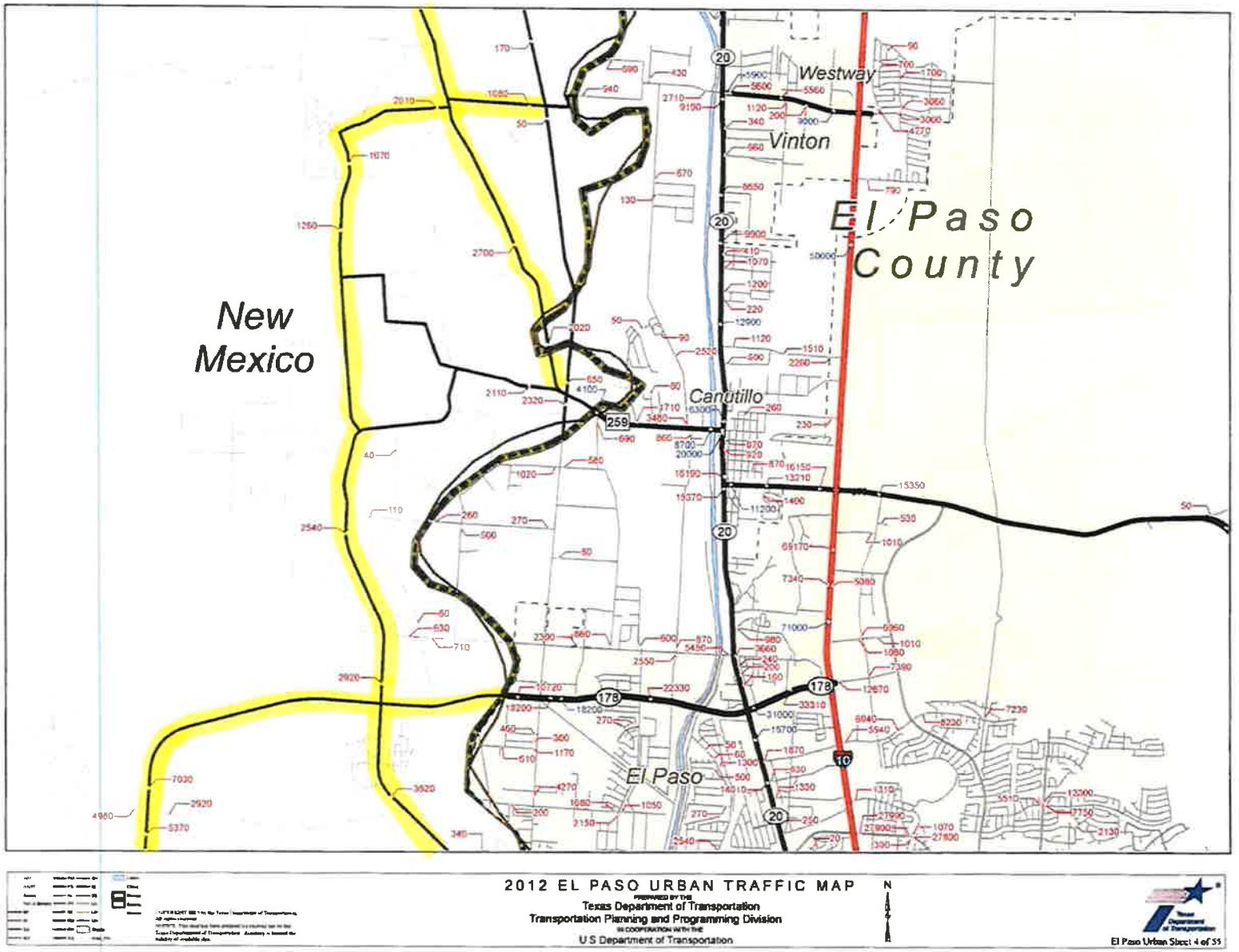
8 Appendix A: Ozone Monitoring Data

County	Site Name	AQS ID #	4th Max ozone 8-hr average (ppm)			Design Value (2013-2015)
			2013	2014	2015	
Doña Ana	La Union	35-013-0008	.064	.065	.070	.066
	Chaparral	35-013-0020	.070	.067	.065	.067
	Desert View	**35-013-0021**	**.071**	**.072**	**.074**	**.072**
	Santa Teresa	**35-013-0022**	**.080**	.066	.070	**.072**
	Solano	35-013-0023	.064	.066	.066	.065
Eddy	Carlsbad	35-015-1005	.069	.072	.067	.069
Lea	Hobbs	35-025-0008	.068	.068	.067	.067
Rio Arriba	Coyote Ranger District	35-039-0026	.066	.065	.064	.065
Sandoval	Bernalillo	35-043-1001	.067	.062	.066	.065
San Juan	Bloomfield	35-045-0009	.069	.062	.061	.064
	Navajo Lake	35-045-0018	.070	.063	.068	.067
	Substation	35-045-1005	.065	.063	.061	.063
Santa Fe	Santa Fe Airport	35-049-0021	.068	.064	.062	.064
Valencia	Los Lunas	35-061-0008	.072	.064	.064	.066
(**Bold** – exceeds 2015 NAAQS)						

9 Appendix B: Sunland Park Area Traffic Flow Maps

The highlighted road segments in the maps below were used to estimate annual VMT.



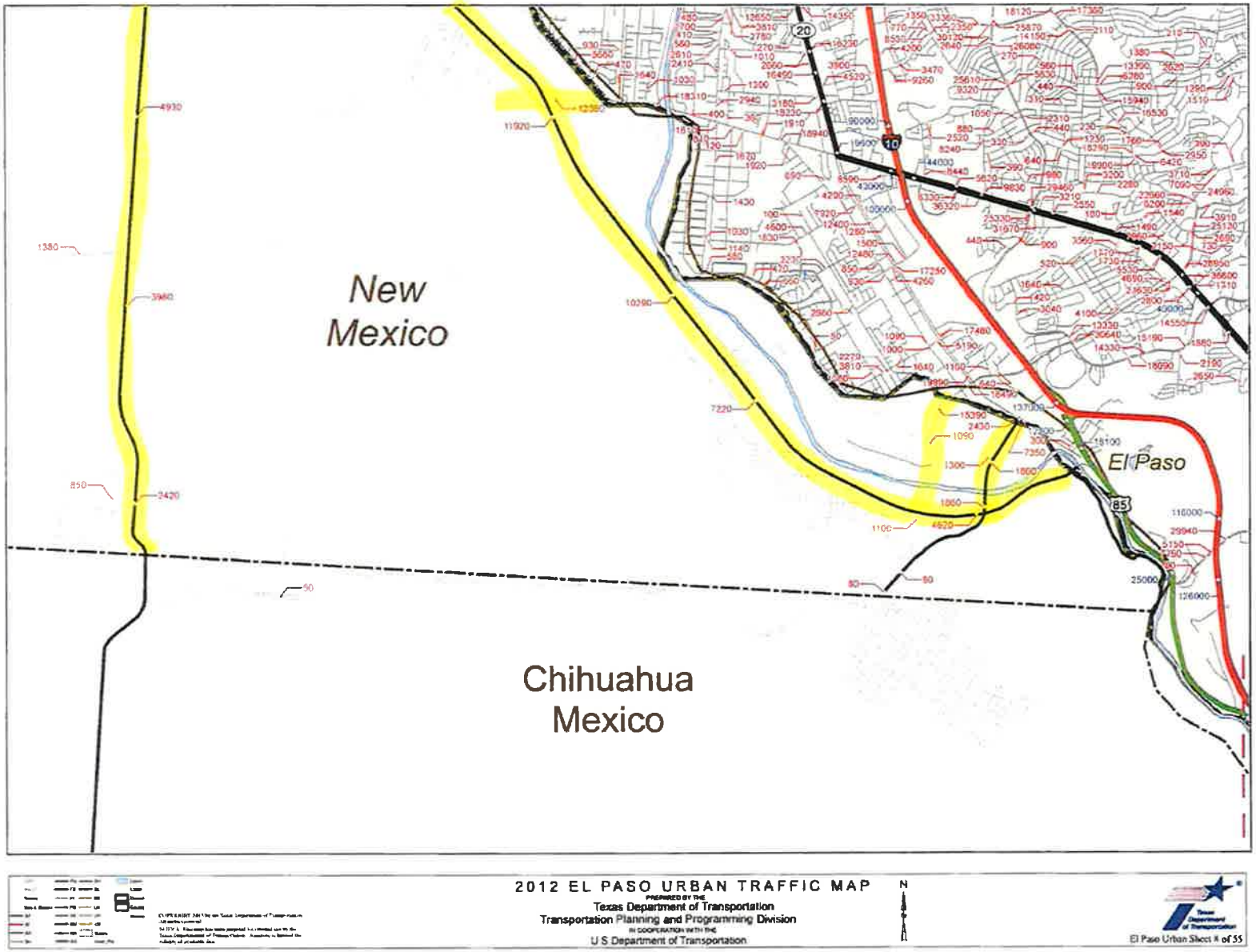


2012 EL PASO URBAN TRAFFIC MAP

PREPARED BY THE
Texas Department of Transportation
Transportation Planning and Programming Division
IN COOPERATION WITH THE
U.S Department of Transportation

N

El Paso Urban Sheet 4 of 55


New
Mexico
Chihuahua
Mexico
El Paso
20
10
85
2012 EL PASO URBAN TRAFFIC MAP
PREPARED BY THE
Texas Department of Transportation
Transportation Planning and Programming Division
IN COOPERATION WITH THE
U.S. Department of Transportation
N
El Paso Urban Sheet X of 55

10 Appendix C: Meteorological Data

Wind roses were created by NMED using each NMED station's meteorological data, at http://drdasnm1.alink.com/.

HYSPLIT[1] 24-hour back trajectories were created by NMED on June 24, 2016 as follows:

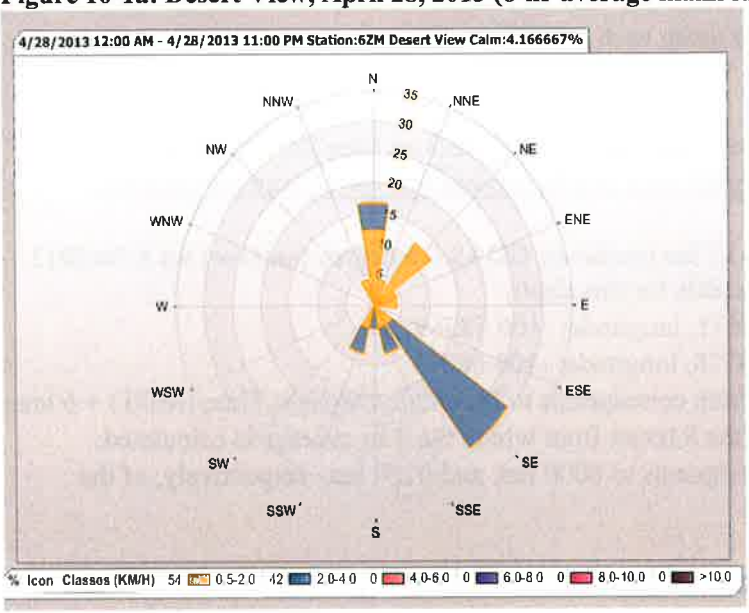
- Model[2] found at http://ready.arl.noaa.gov/hypub-bin/trajtype.pl?runtype=archive, modified January 5, 2016;
- Meteorological data: NAM 12 km (archive); GDAS 0.5 degree (archive) for 8/16/2013 only (NAM 12 data not available for this date);
- Desert View latitude: 31.79611, longitude: -106.58389;
- Santa Teresa latitude: 31.78778, longitude: -106.68278;
- Times are listed as UTC, which corresponds to Mountain Daylight Time (MDT) + 6 hrs.;
- Contributing hours include the 8 hours from which the 8-hr average is calculated;
- 2400 or 2500 hrs. UTC corresponds to 0000 hrs. and 0100 hrs., respectively, of the following day.

[1] *Stein, A.F., Draxler, R.R, Rolph, G.D., Stunder, B.J.B., Cohen, M.D., and Ngan, F., (2015). NOAA's HYSPLIT atmospheric transport and dispersion modeling system, Bull. Amer. Meteor. Soc., **96**, 2059-2077.*

[2] *Rolph, G.D. (2016). Real-time Environmental Applications and Display sYstem (READY) Website (http://www.ready.noaa.gov). NOAA Air Resources Laboratory, College Park, MD.*

10.1 Desert View

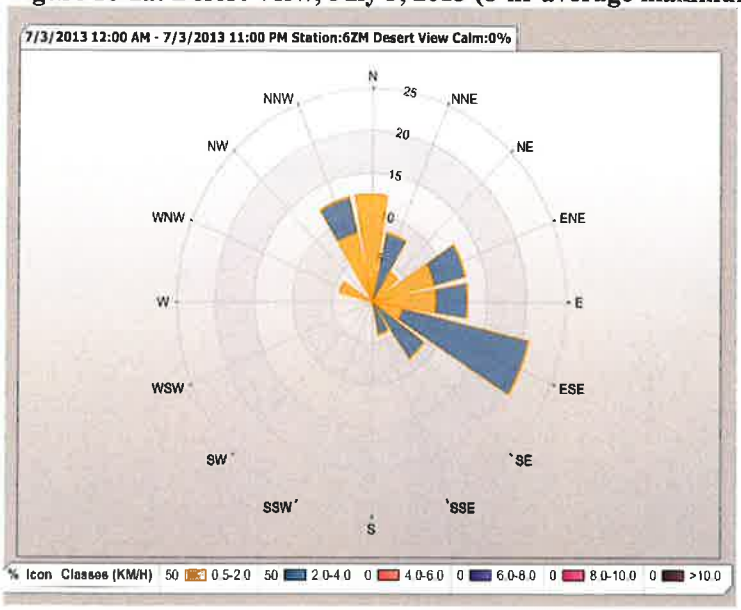
Figure 10-1a: Desert View, April 28, 2013 (8-hr average maximum .071 ppm)



Approximately 66% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-1b: Desert View, April 28, 2013 HYSPLIT Back trajectories.

Figure 10-2a: Desert View, July 3, 2013 (8-hr average maximum .076 ppm)



Approximately 61% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-2b: Desert View, July 3, 2013 HYSPLIT Back trajectories.

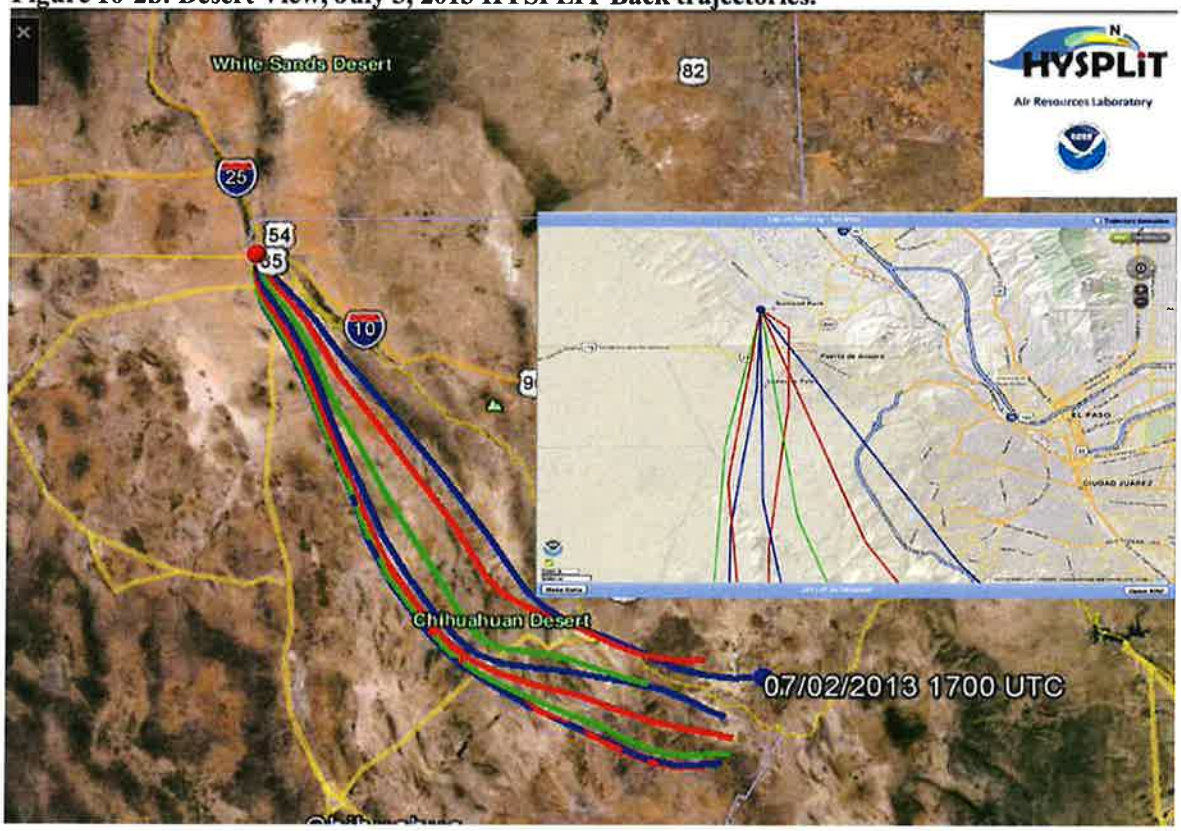
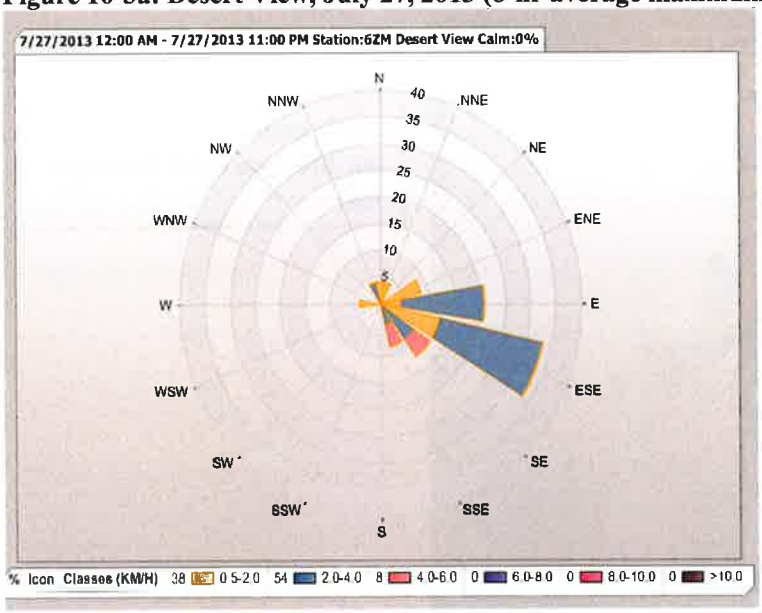


Figure 10-3a: Desert View, July 27, 2013 (8-hr average maximum .072 ppm)



Approximately 84% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-3b: Desert View, July 27, 2013 HYSPLIT Back trajectories.

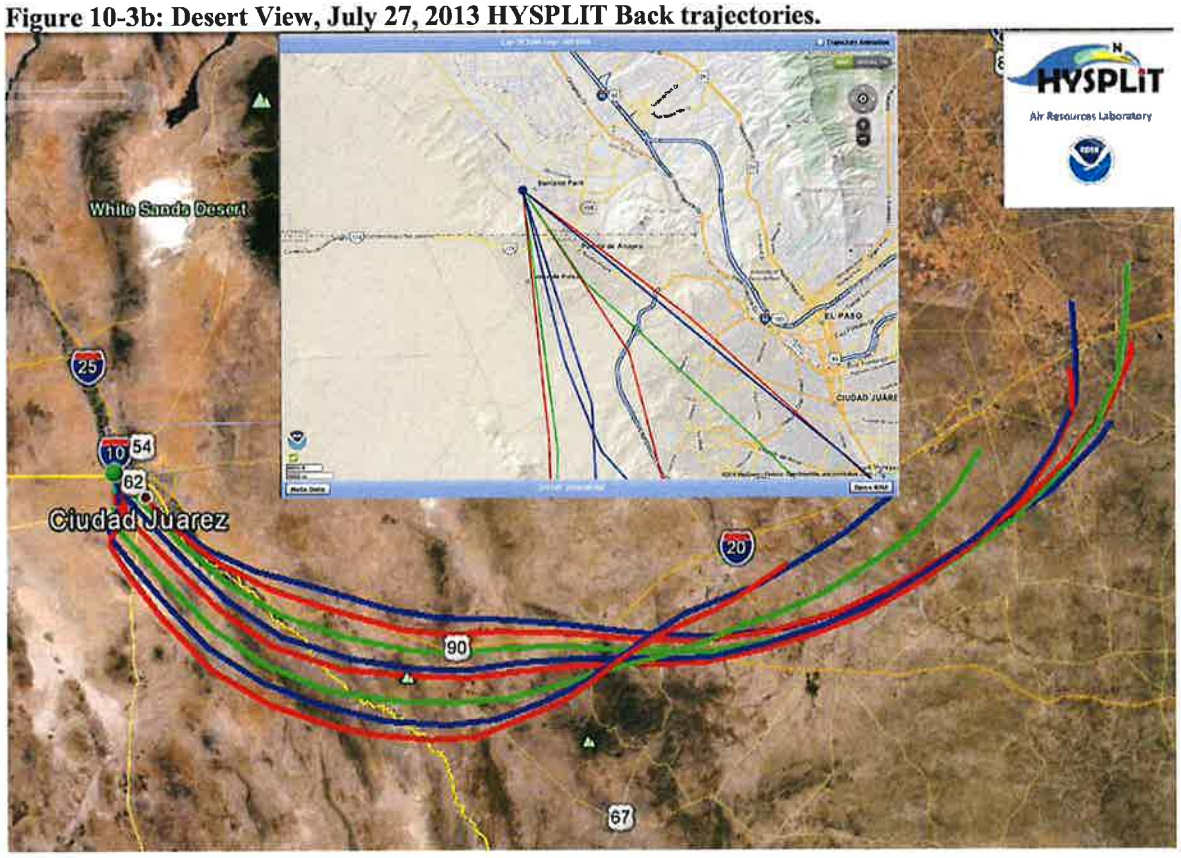
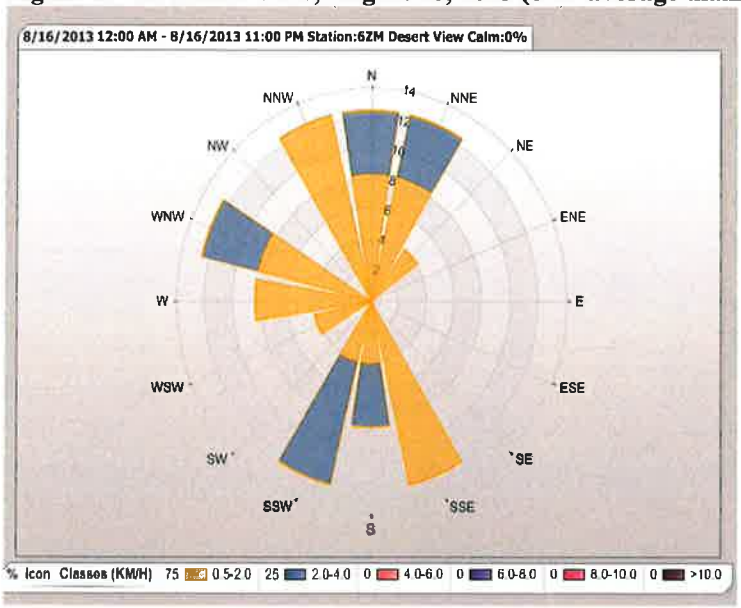


Figure 10-4a: Desert View, August 16, 2013 (8-hr average maximum .072 ppm)



Approximately 49% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-4b: Desert View, August 16, 2013 HYSPLIT Back trajectories.

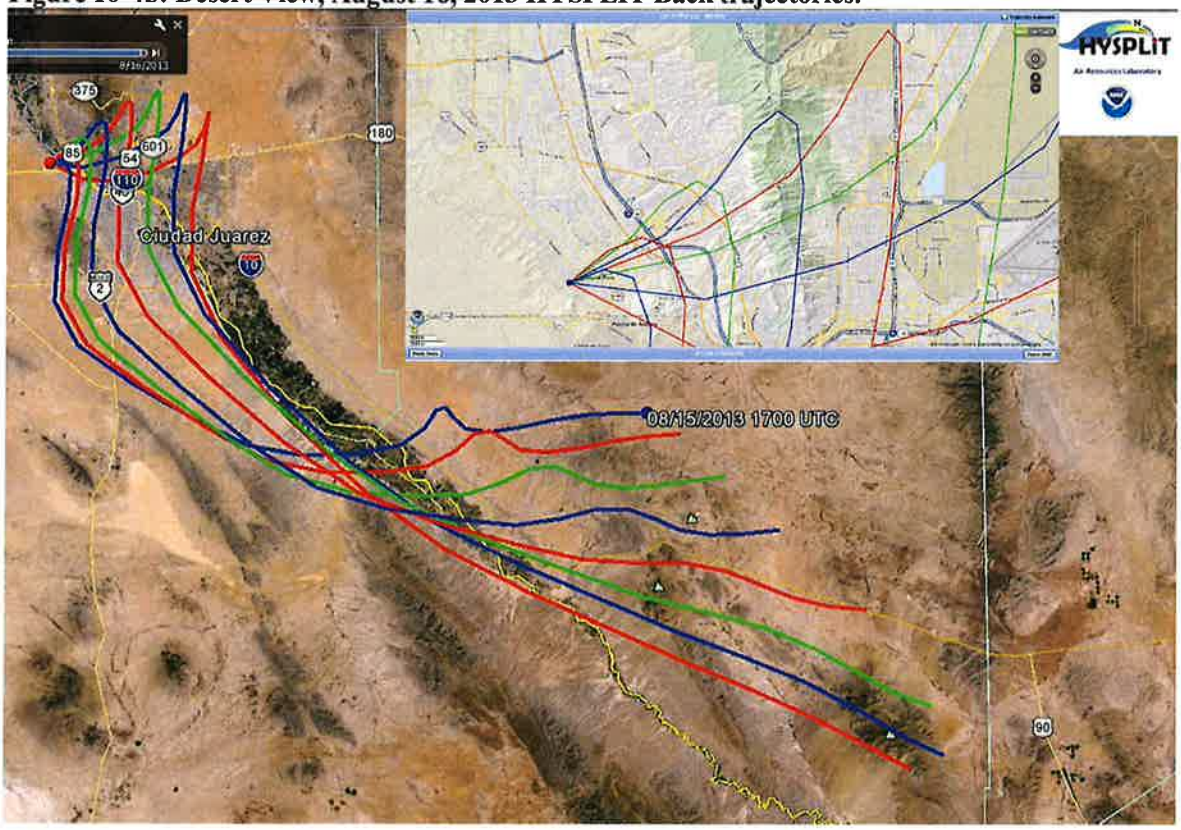
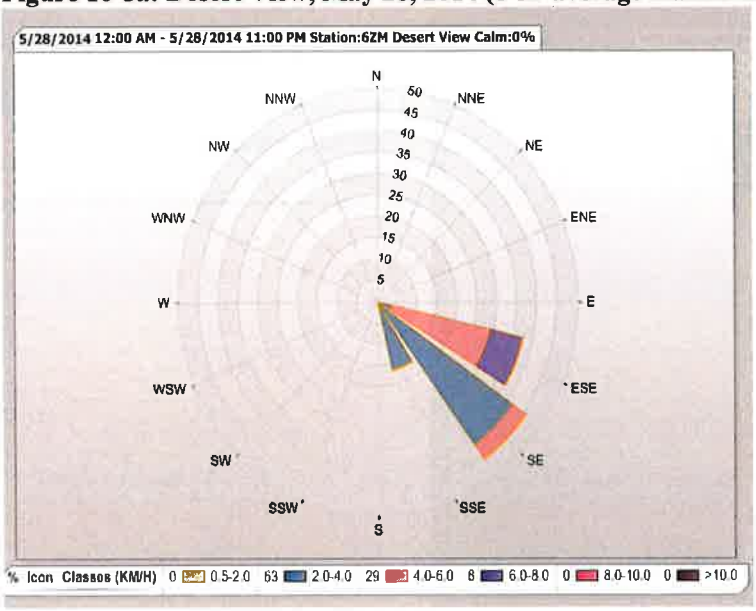


Figure 10-5a: Desert View, May 28, 2014 (8-hr average maximum .072 ppm)



100% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-5b: Desert View, May 28, 2014 HYSPLIT Back trajectories.

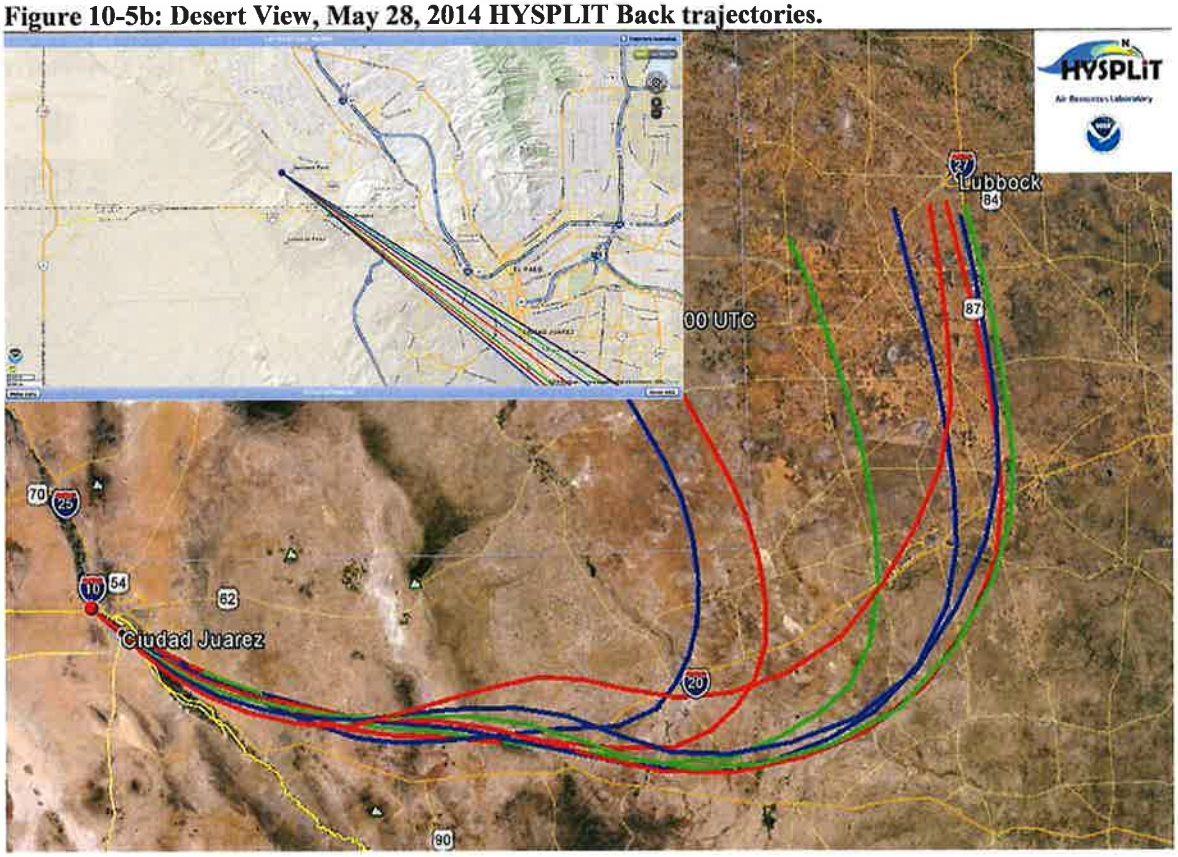
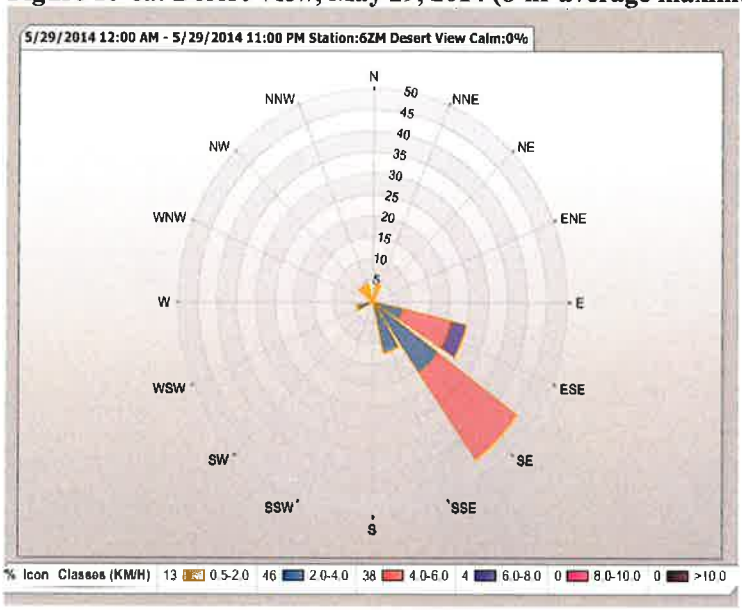


Figure 10-6a: Desert View, May 29, 2014 (8-hr average maximum .072 ppm)



Approximately 83% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-6b: Desert View, May 29, 2014 HYSPLIT Back trajectories.

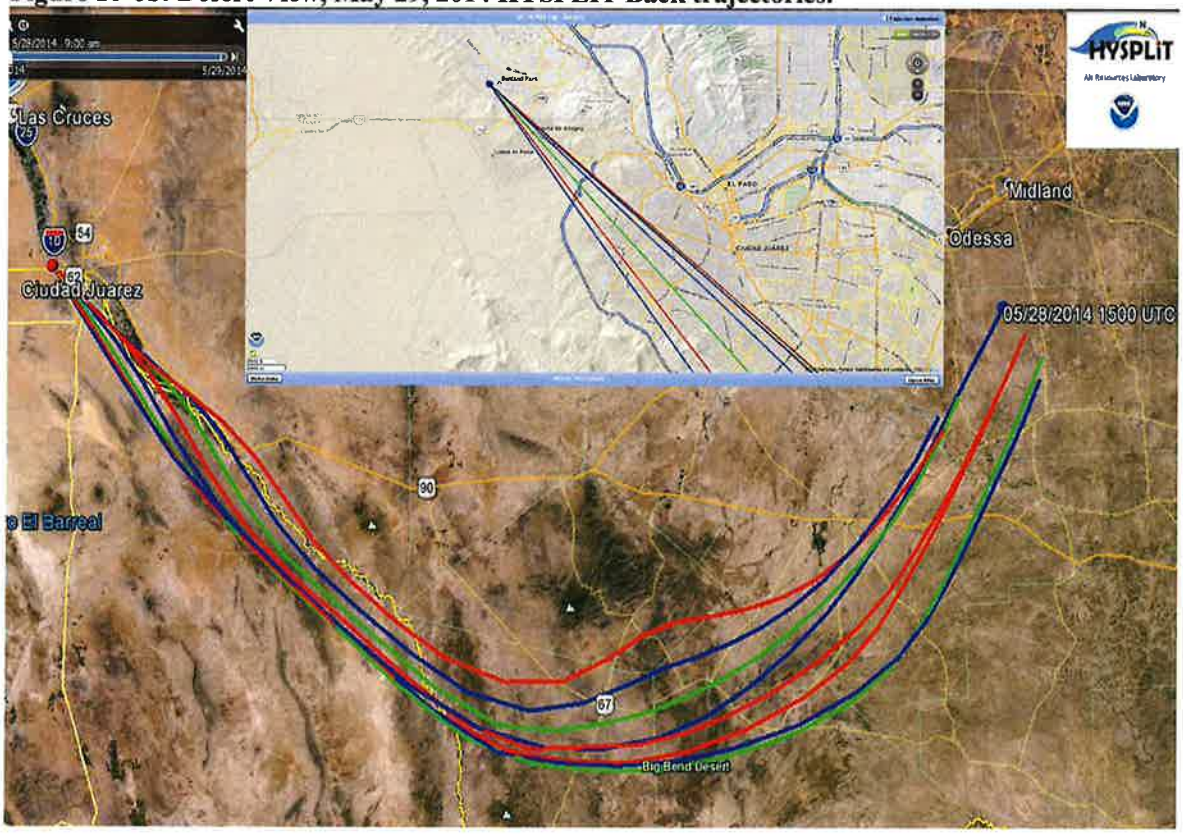
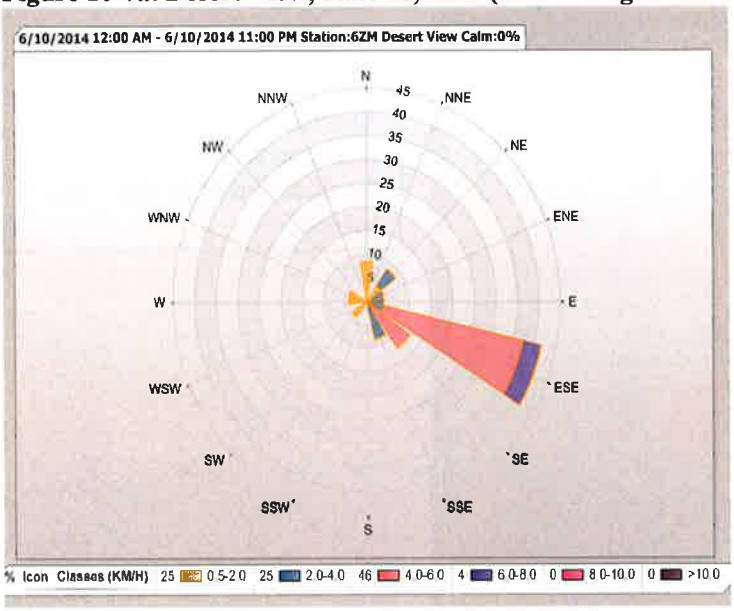


Figure 10-7a: Desert View, June 10, 2014 (8-hr average maximum .076 ppm)



Approximately 79% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-7b: Desert View, June 10, 2014 HYSPLIT Back trajectories.

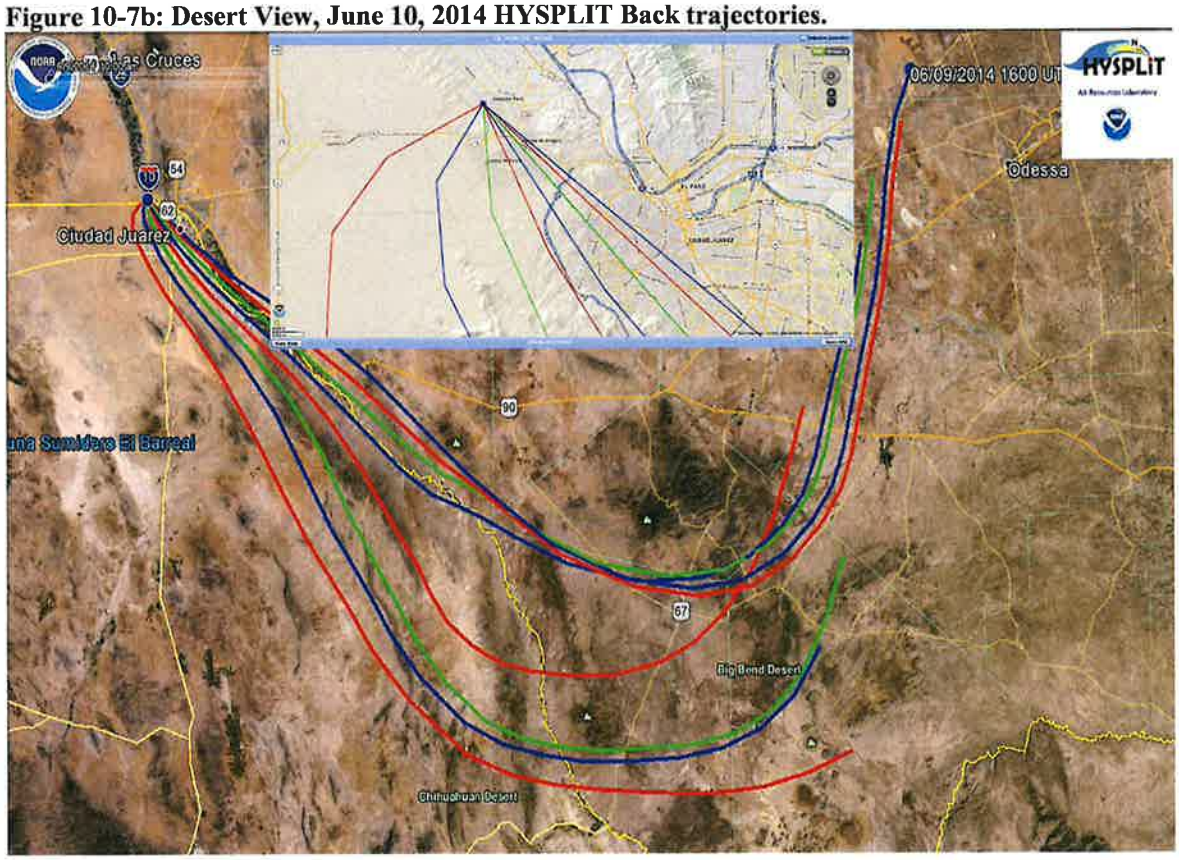
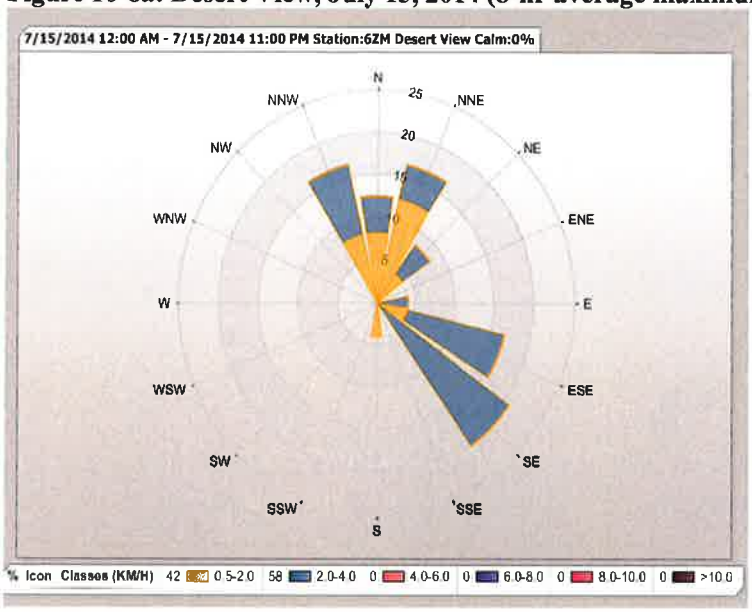


Figure 10-8a: Desert View, July 15, 2014 (8-hr average maximum .072 ppm)



Approximately 70% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-8b: Desert View, July 15, 2014 HYSPLIT Back trajectories.

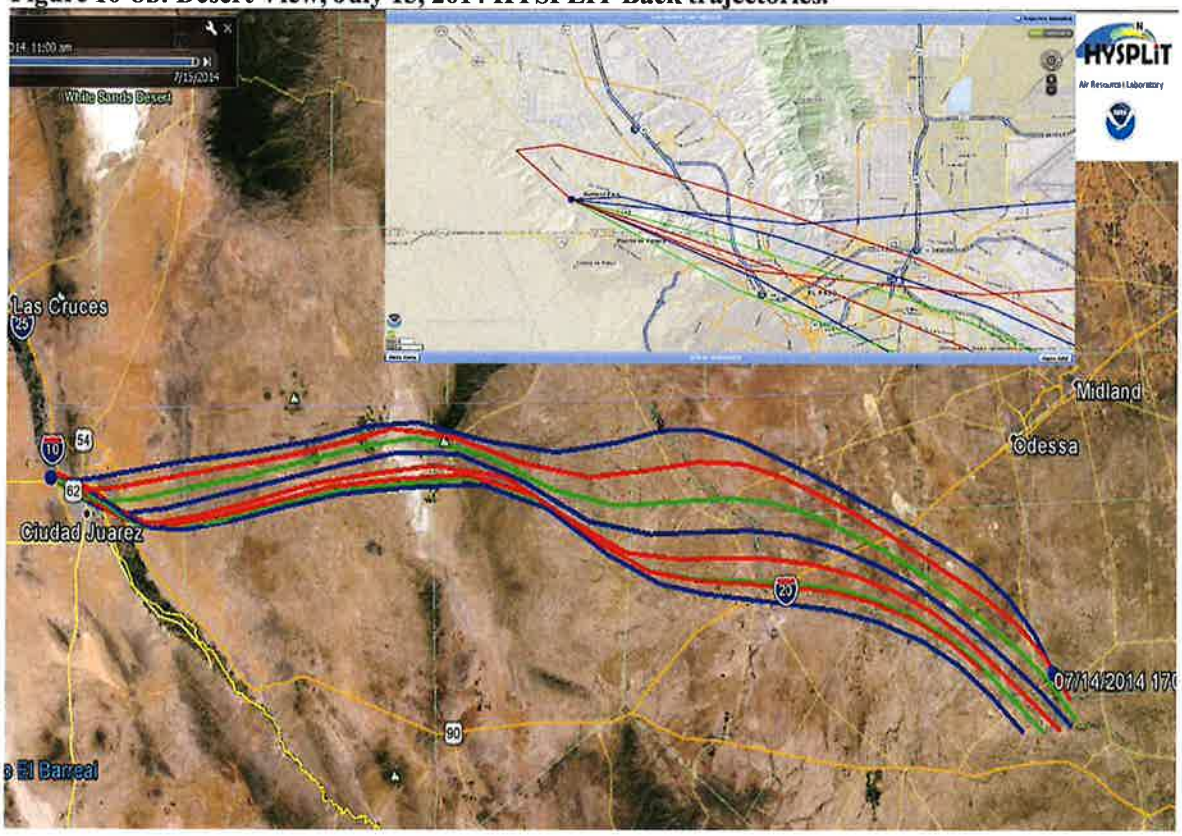
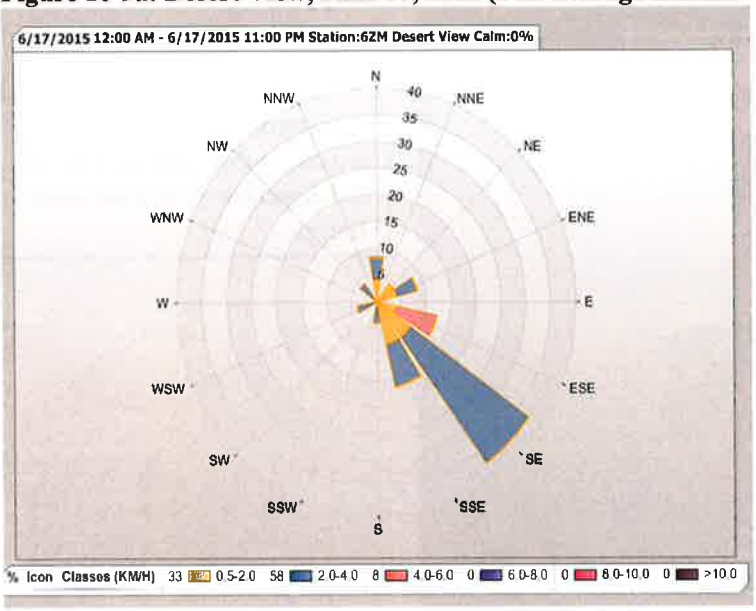


Figure 10-9a: Desert View, June 17, 2015 (8-hr average maximum .077 ppm)



Approximately 80% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-9b: Desert View, June 17, 2015 HYSPLIT Back trajectories.

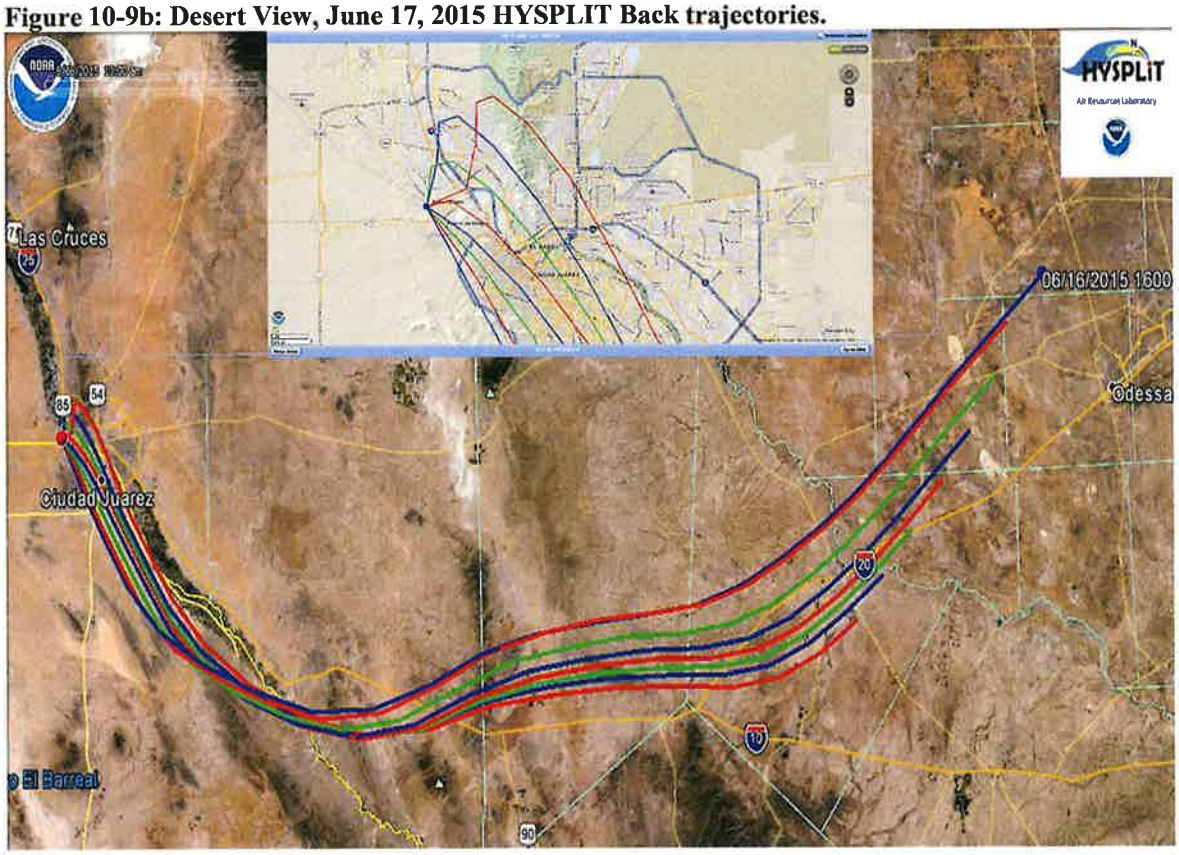
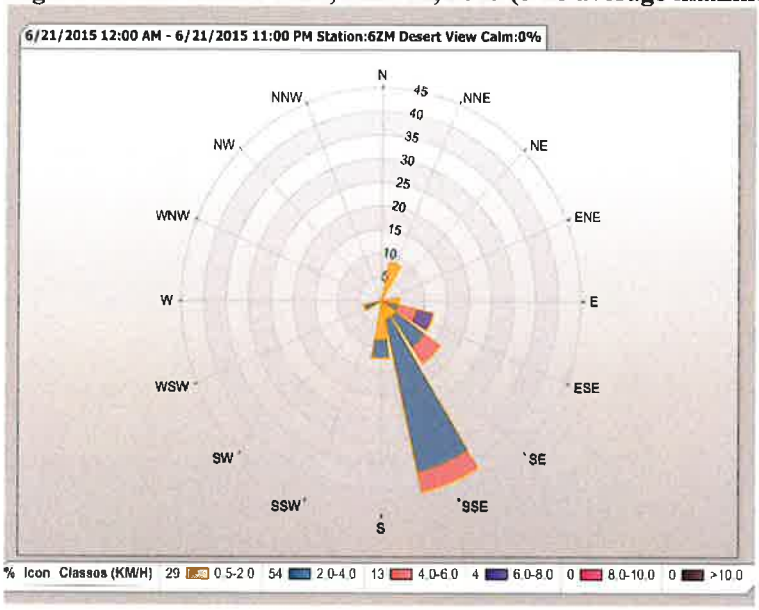


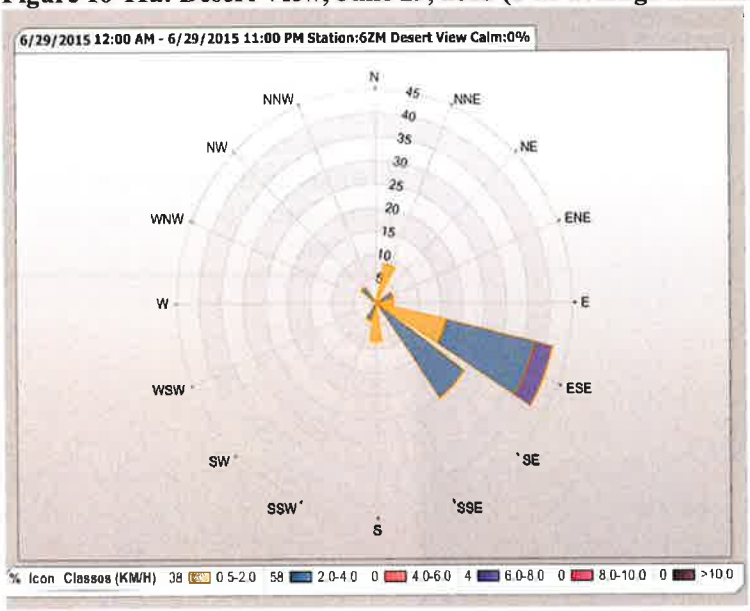
Figure 10-10a: Desert View, June 21, 2015 (8-hr average maximum .074 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-10b: Desert View, June 21, 2015 HYSPLIT Back trajectories.

Figure 10-11a: Desert View, June 29, 2015 (8-hr average maximum .076 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-11b: Desert View, June 29, 2015 HYSPLIT Back trajectories.

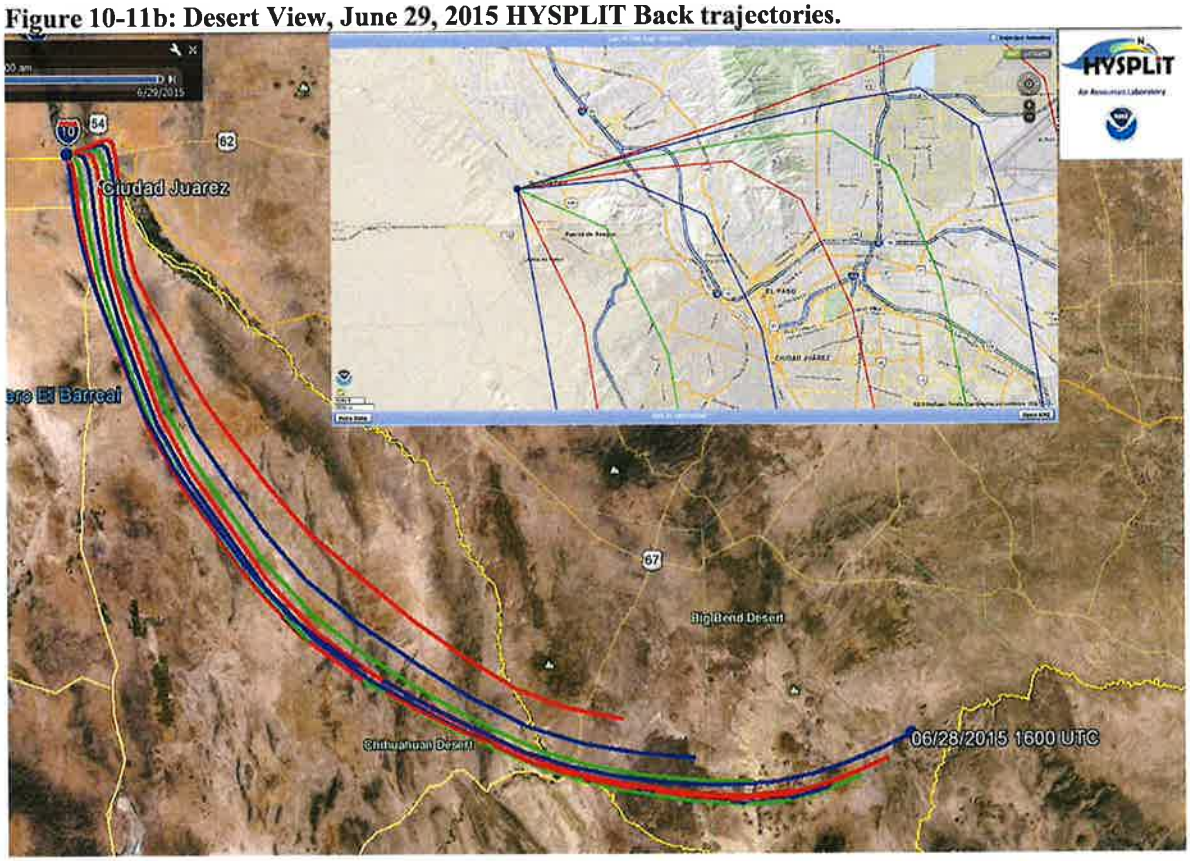
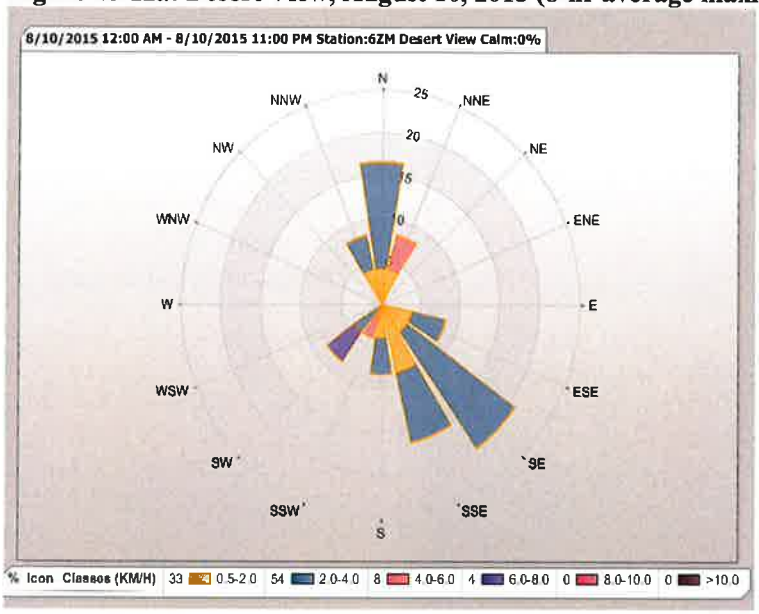
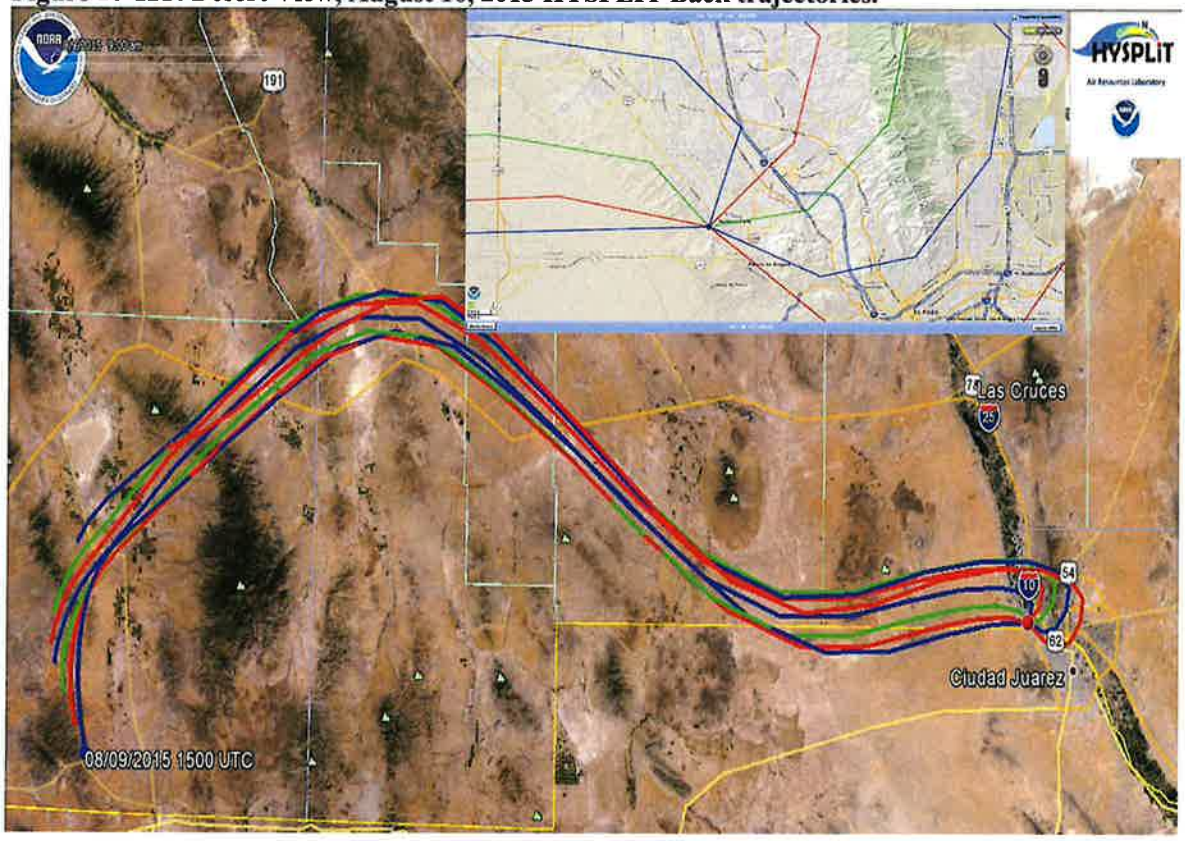


Figure 10-12a: Desert View, August 10, 2015 (8-hr average maximum .077 ppm)



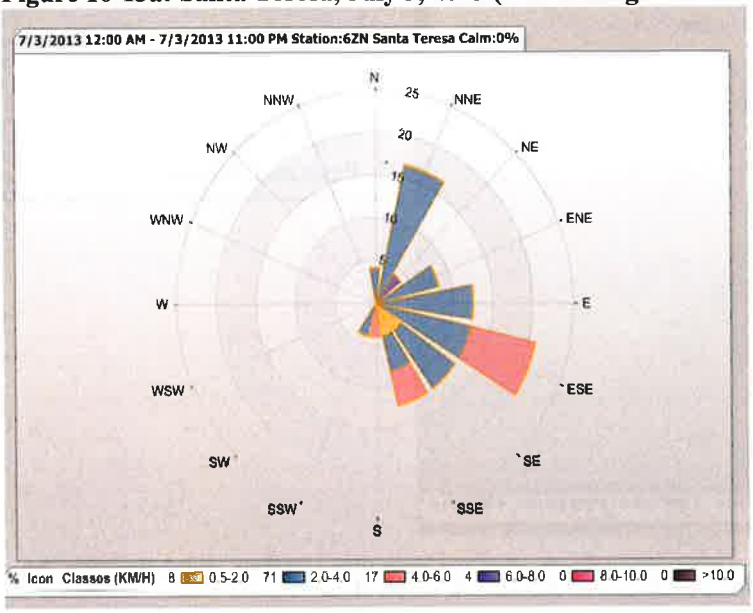
Approximately 74% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-12b: Desert View, August 10, 2015 HYSPLIT Back trajectories.



10.2 Santa Teresa

Figure 10-13a: Santa Teresa, July 3, 2013 (8-hr average maximum .084 ppm)



Approximately 74% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-13b: Santa Teresa, July 3, 2013 HYSPLIT Back trajectories.

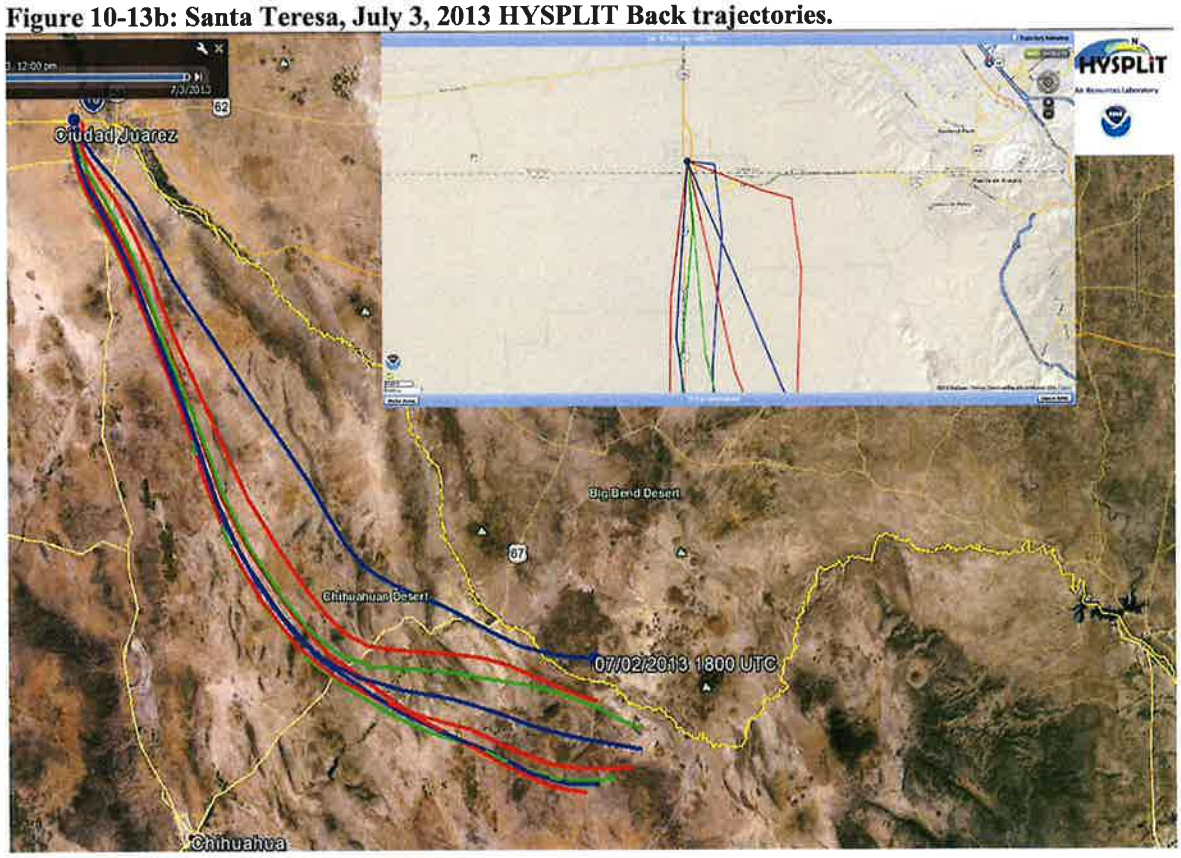
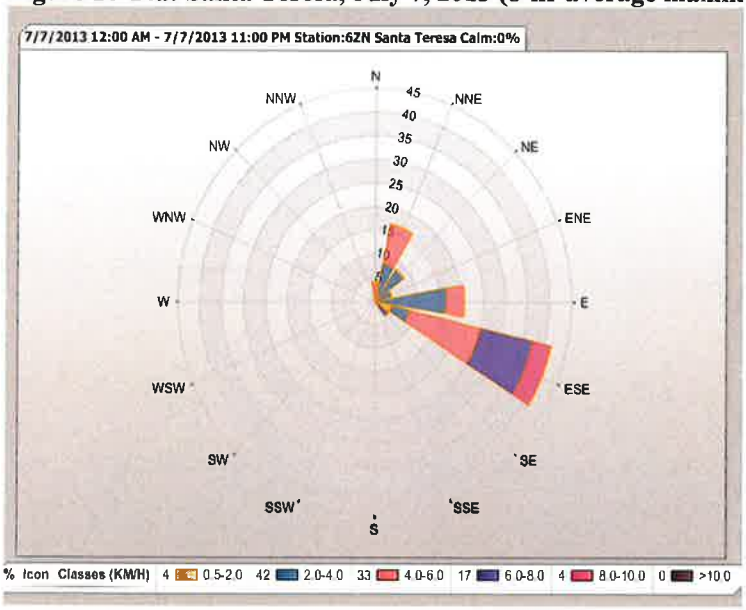


Figure 10-14a: Santa Teresa, July 7, 2013 (8-hr average maximum 0.080 ppm)



Approximately 77% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-14b: Santa Teresa, July 7, 2013 HYSPLIT Back trajectories.

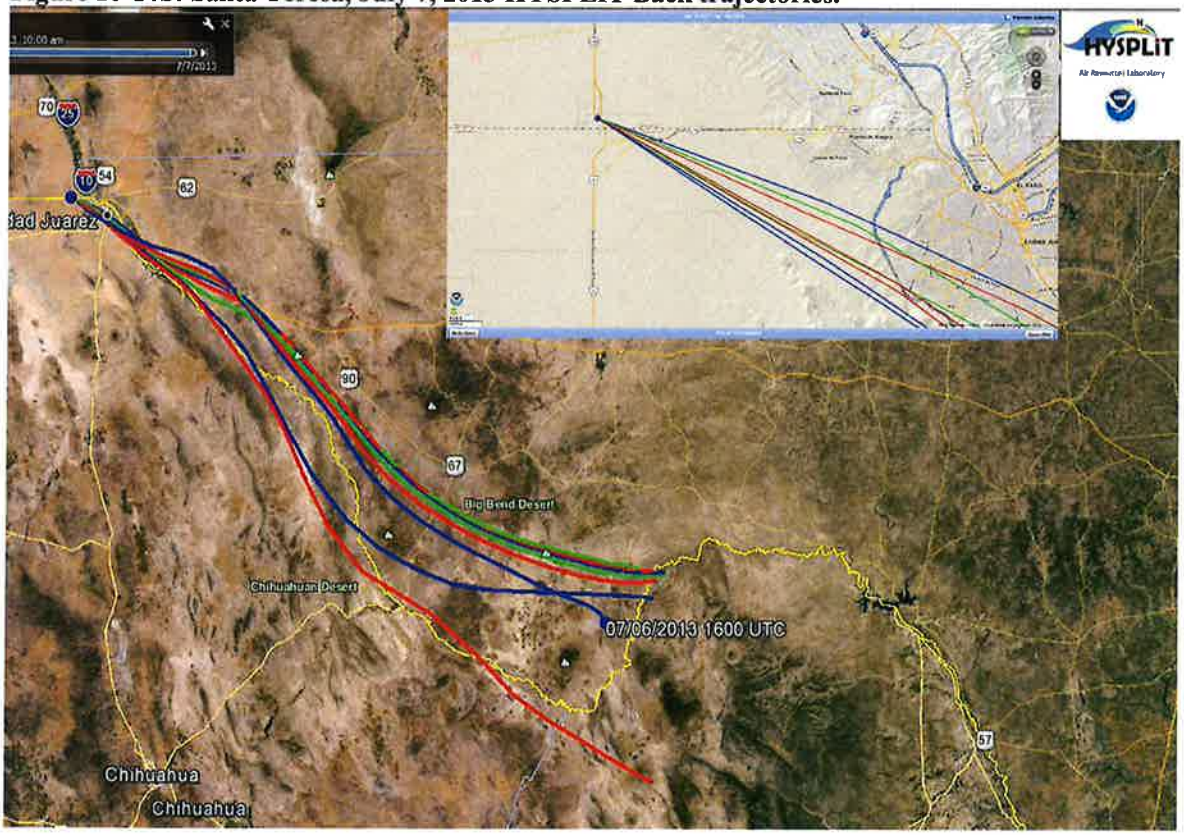
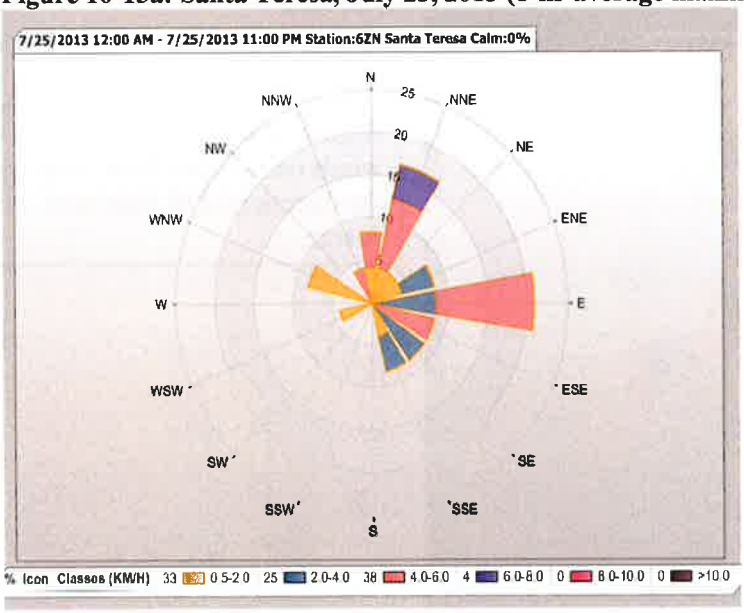


Figure 10-15a: Santa Teresa, July 25, 2013 (8-hr average maximum .081 ppm)



Approximately 57% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-15b: Santa Teresa, July 25, 2013 HYSPLIT Back trajectories.

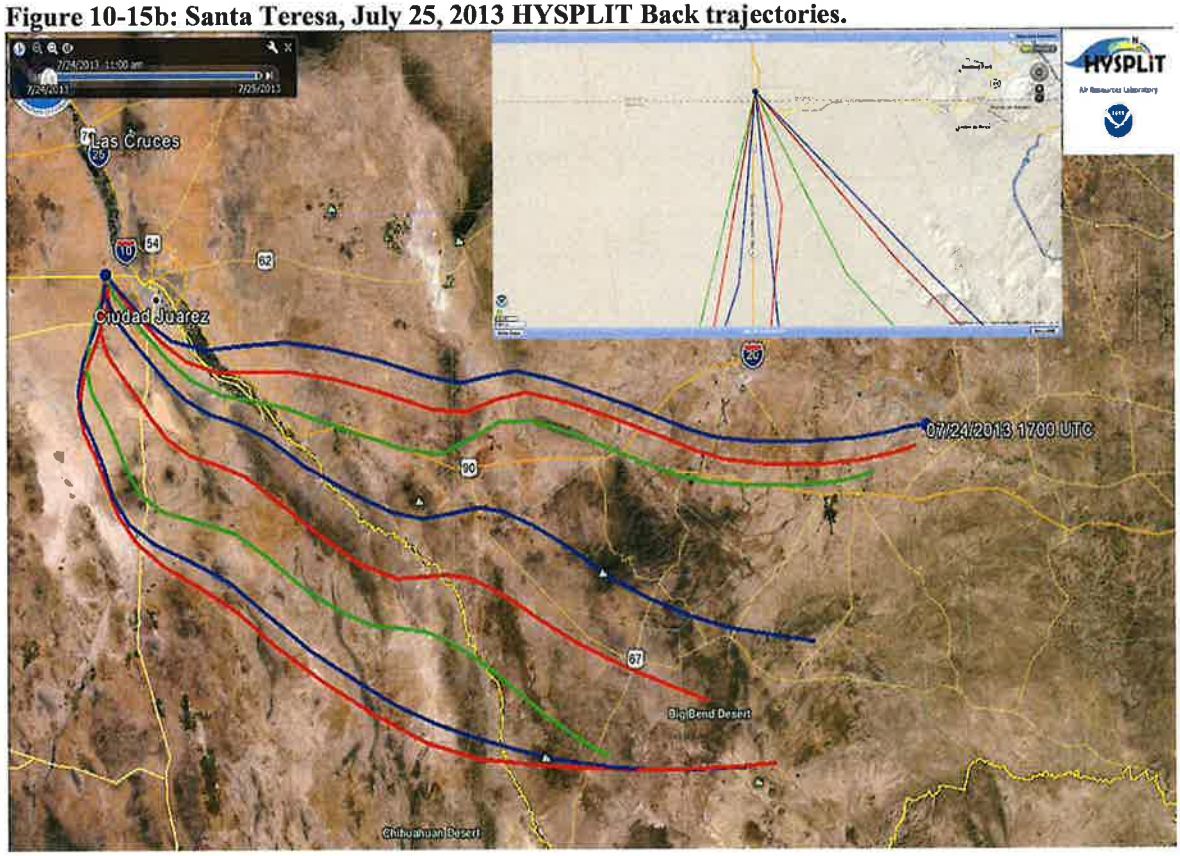
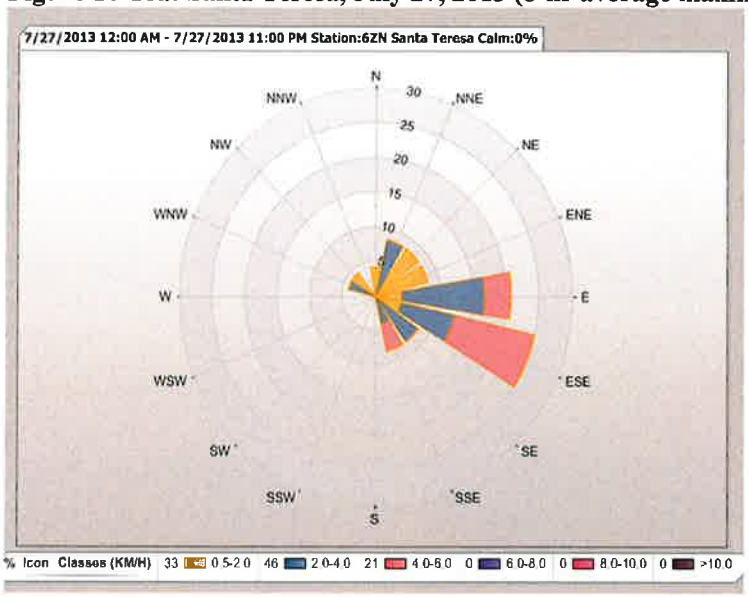


Figure 10-16a: Santa Teresa, July 27, 2013 (8-hr average maximum .089 ppm)



Approximately 76% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-16b: Santa Teresa, July 27, 2013 HYSPLIT Back trajectories.

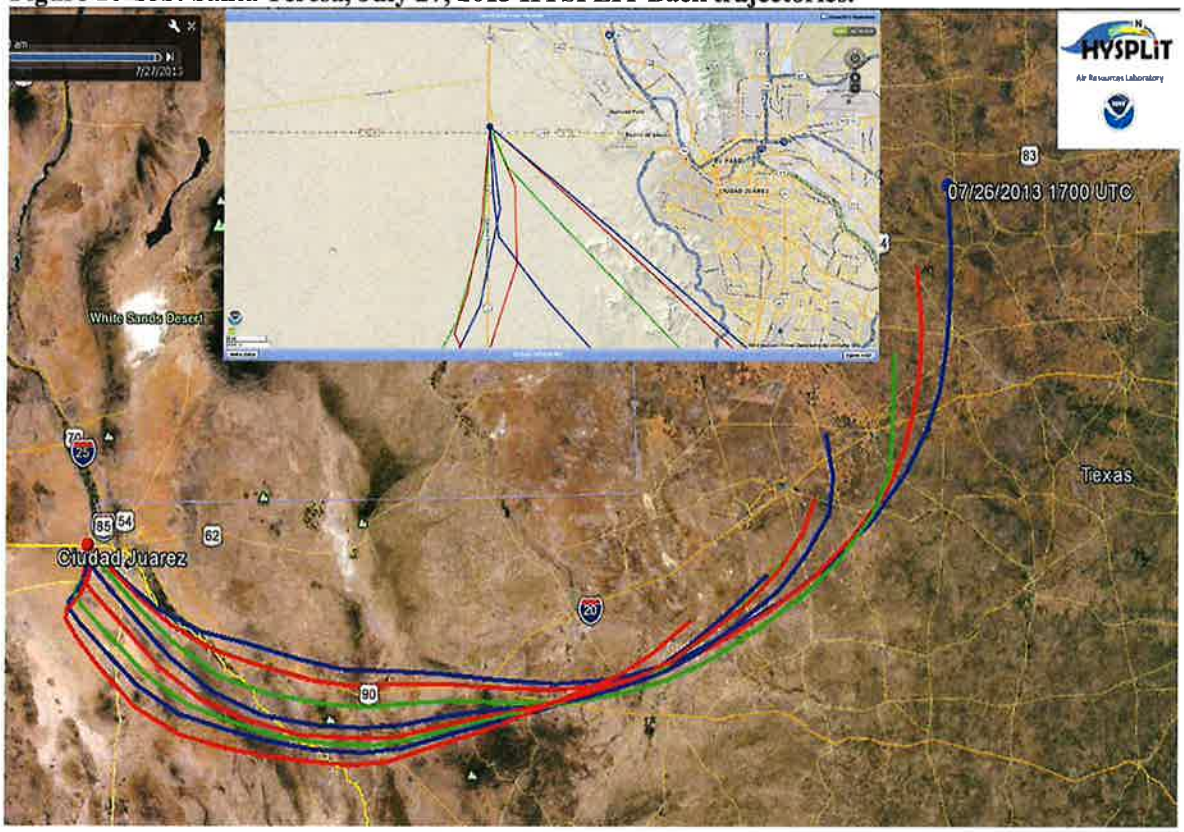
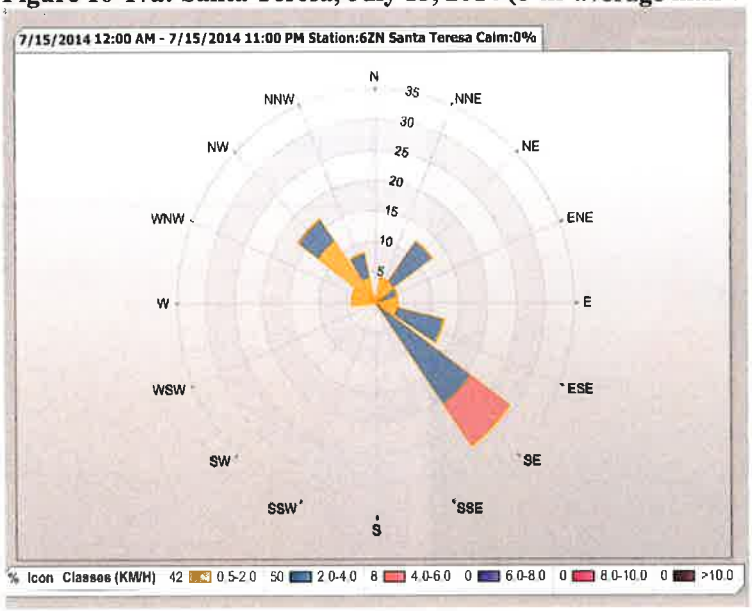


Figure 10-17a: Santa Teresa, July 15, 2014 (8-hr average maximum .077 ppm)



Approximately 61% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-17b: Santa Teresa, July 15, 2014 HYSPLIT Back trajectories.

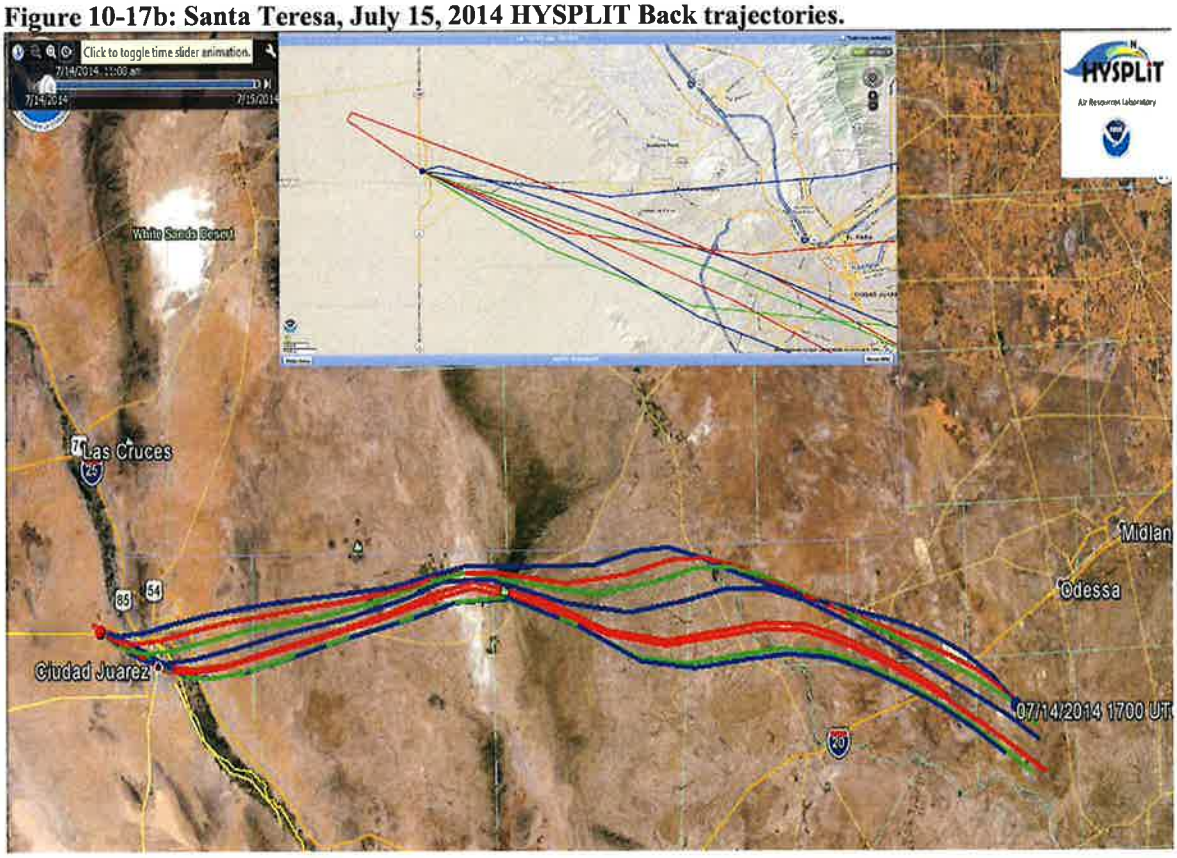
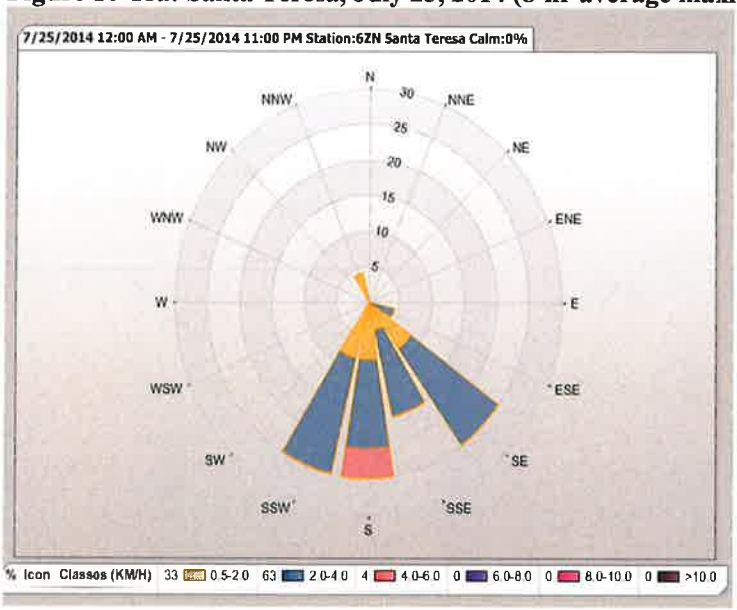


Figure 10-18a: Santa Teresa, July 25, 2014 (8-hr average maximum .064 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-18b: Santa Teresa, July 25, 2014 HYSPLIT Back trajectories.

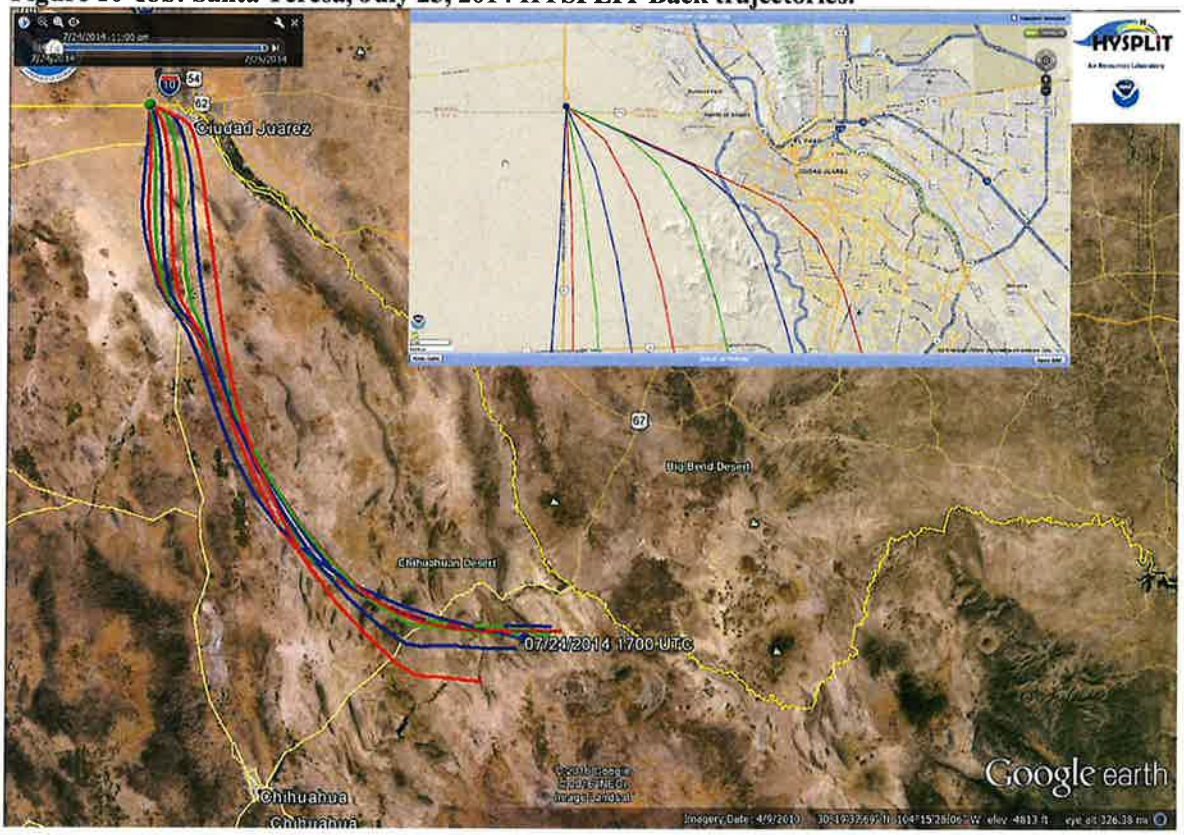
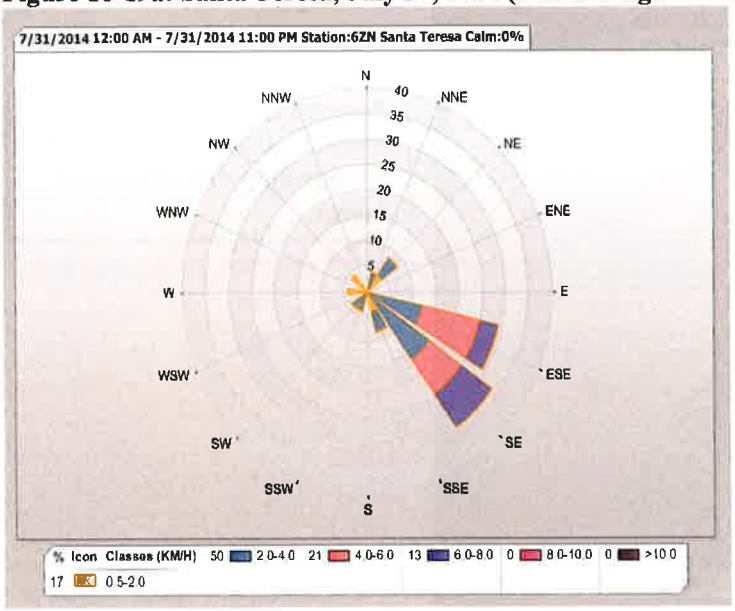


Figure 10-19a: Santa Teresa, July 31, 2014 (8-hr average maximum .068 ppm)



Approximately 72% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-19b: Santa Teresa, July 31, 2014 HYSPLIT Back trajectories.

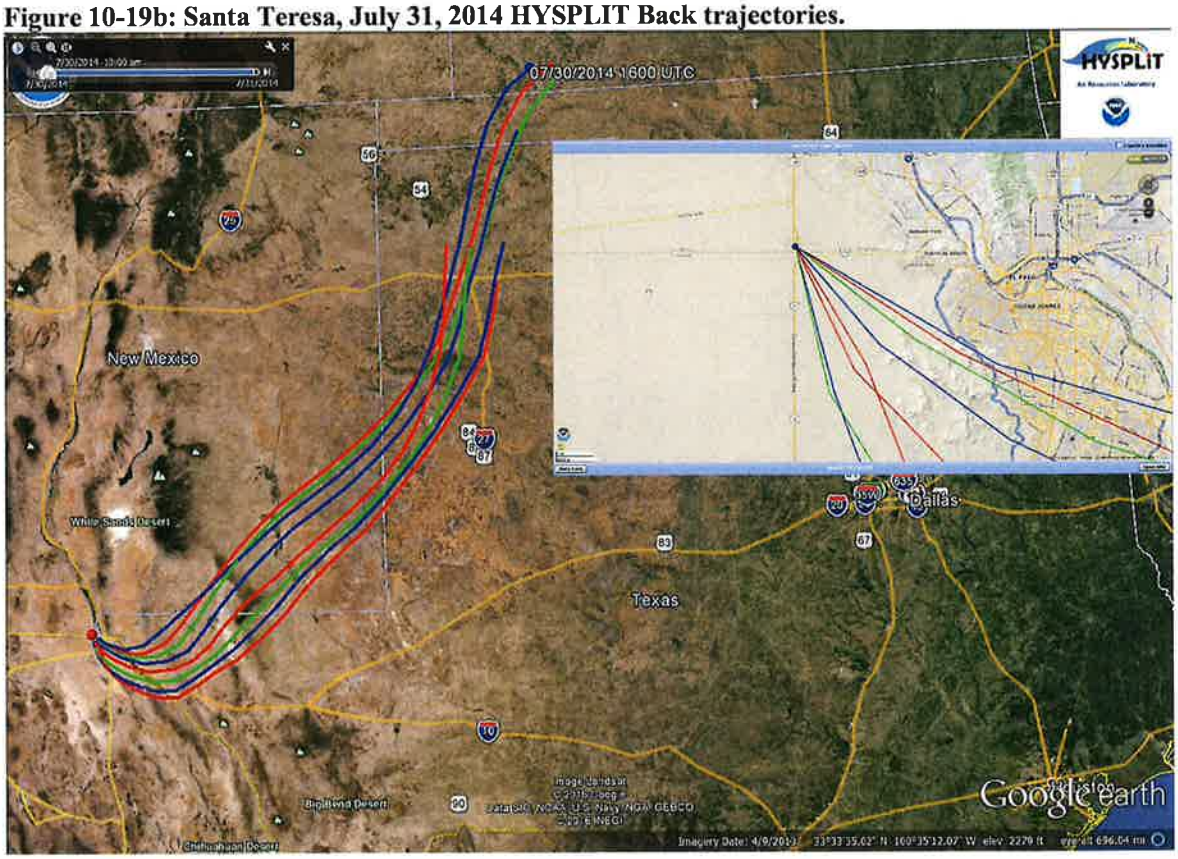
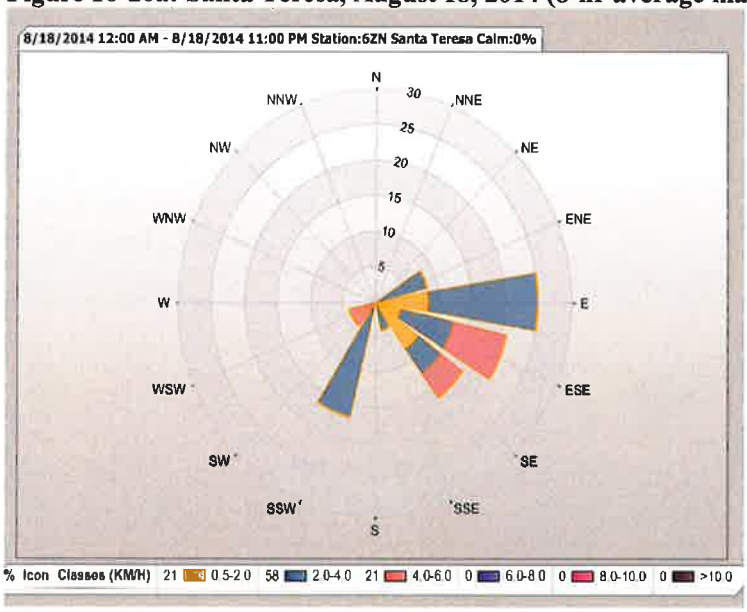


Figure 10-20a: Santa Teresa, August 18, 2014 (8-hr average maximum .069 ppm)



Approximately 92% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-20b: Santa Teresa, August 18, 2014 HYSPLIT Back trajectories.

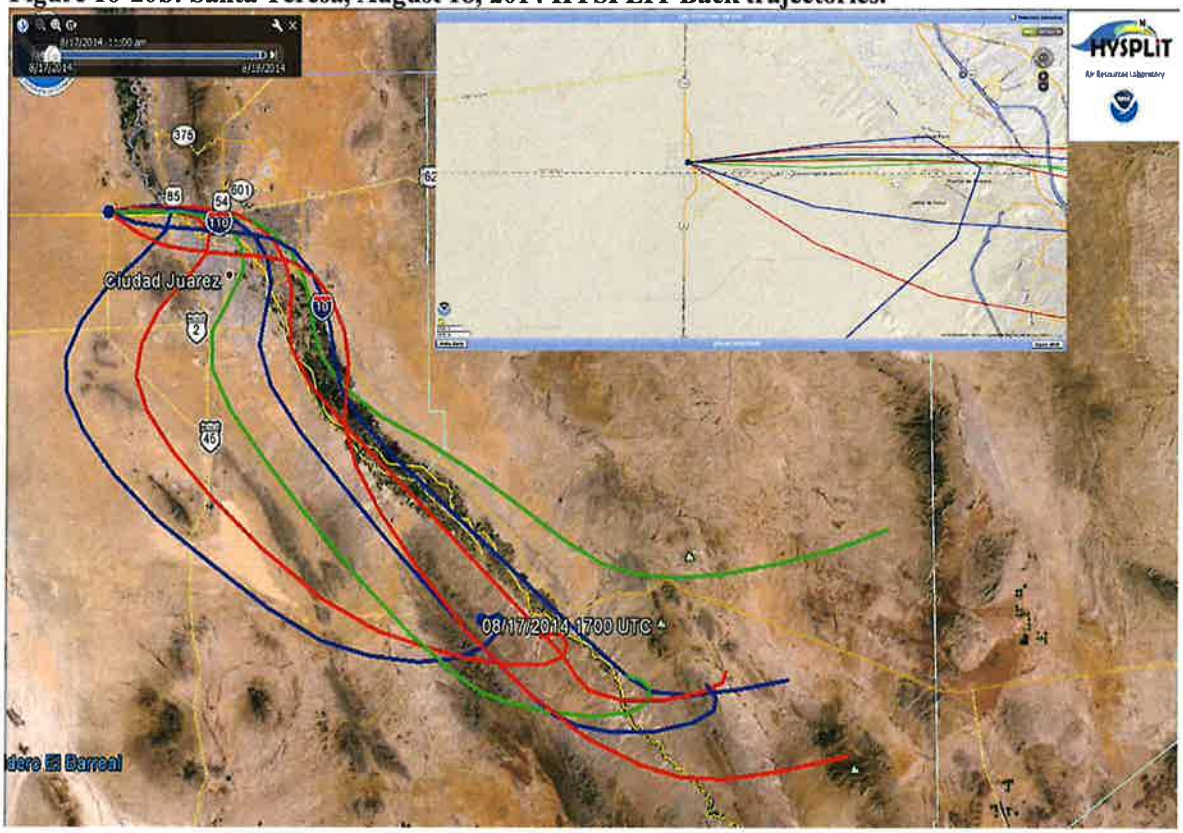
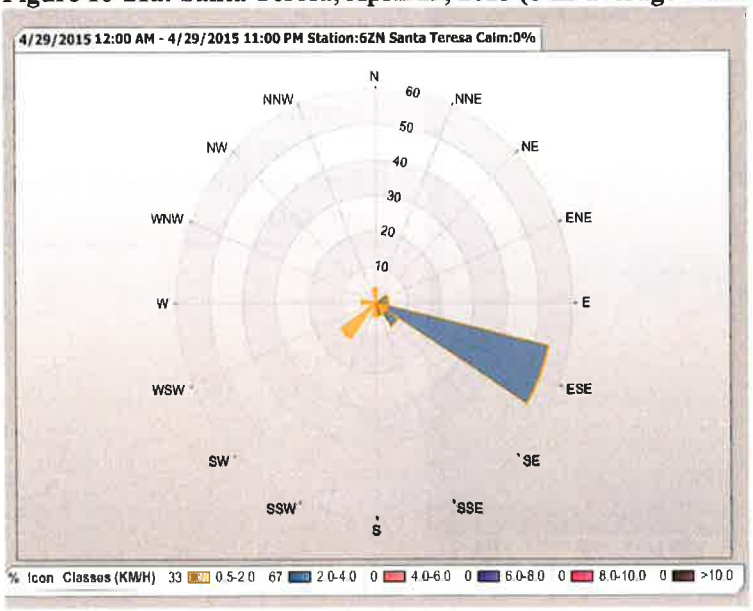


Figure 10-21a: Santa Teresa, April 29, 2015 (8-hr average maximum .070 ppm)



Approximately 77% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-21b: Santa Teresa, April 29, 2015 HYSPLIT Back trajectories.

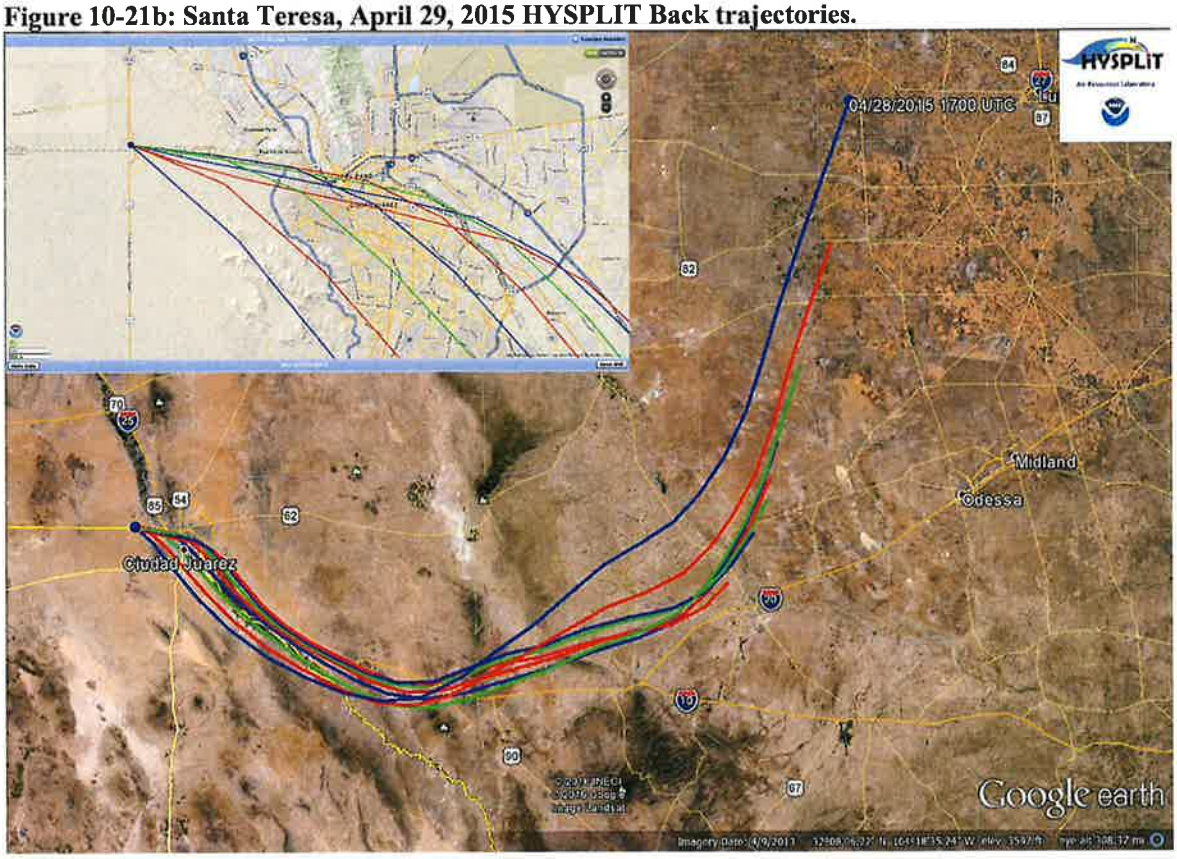
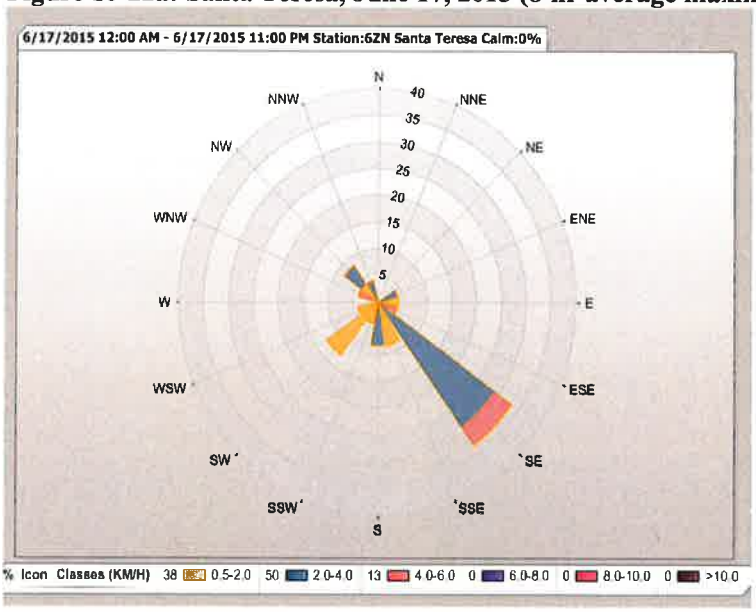


Figure 10-22a: Santa Teresa, June 17, 2015 (8-hr average maximum .070 ppm)



Approximately 66% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-22b: Santa Teresa, June 17, 2015 HYSPLIT Back trajectories.

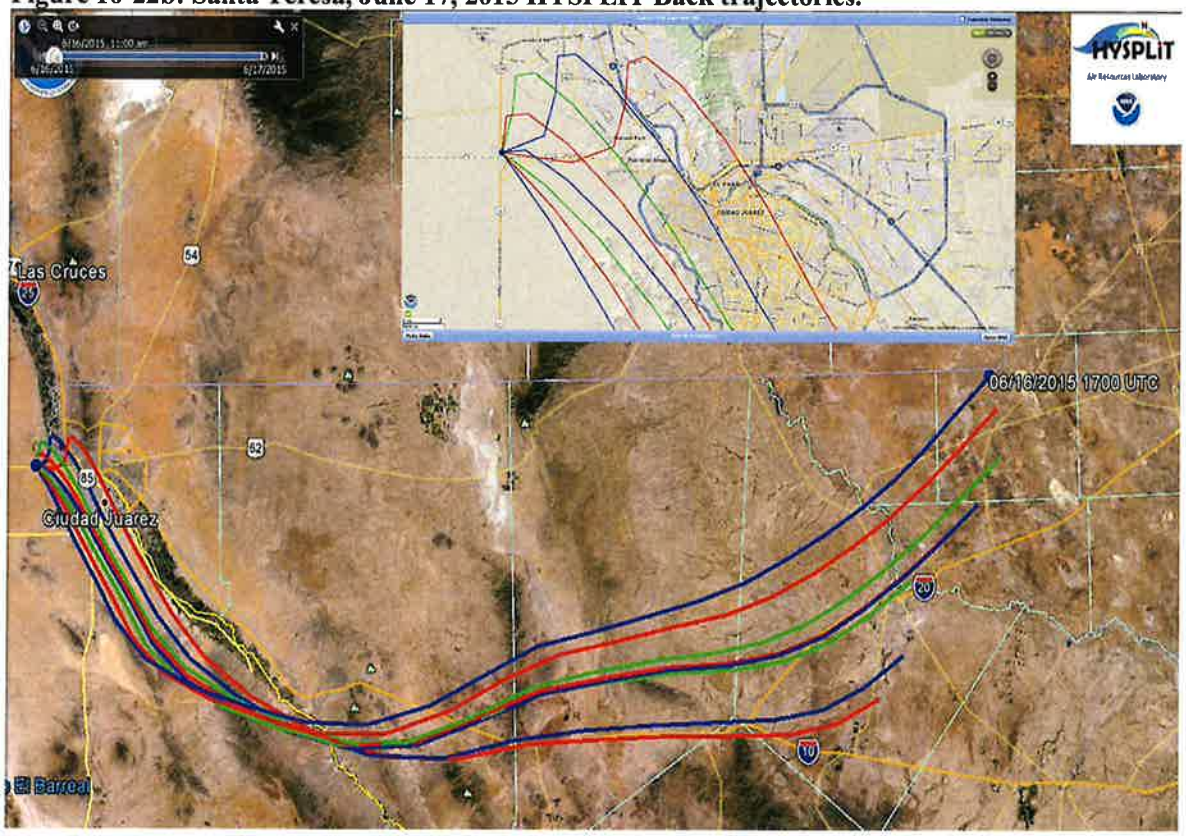
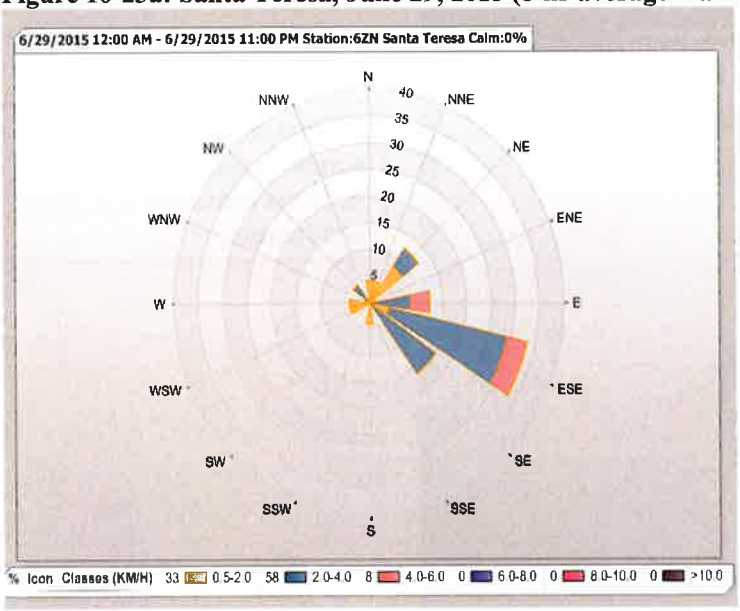


Figure 10-23a: Santa Teresa, June 29, 2015 (8-hr average maximum .074 ppm)



Approximately 84% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-23b: Santa Teresa, June 29, 2015 HYSPLIT Back trajectories.

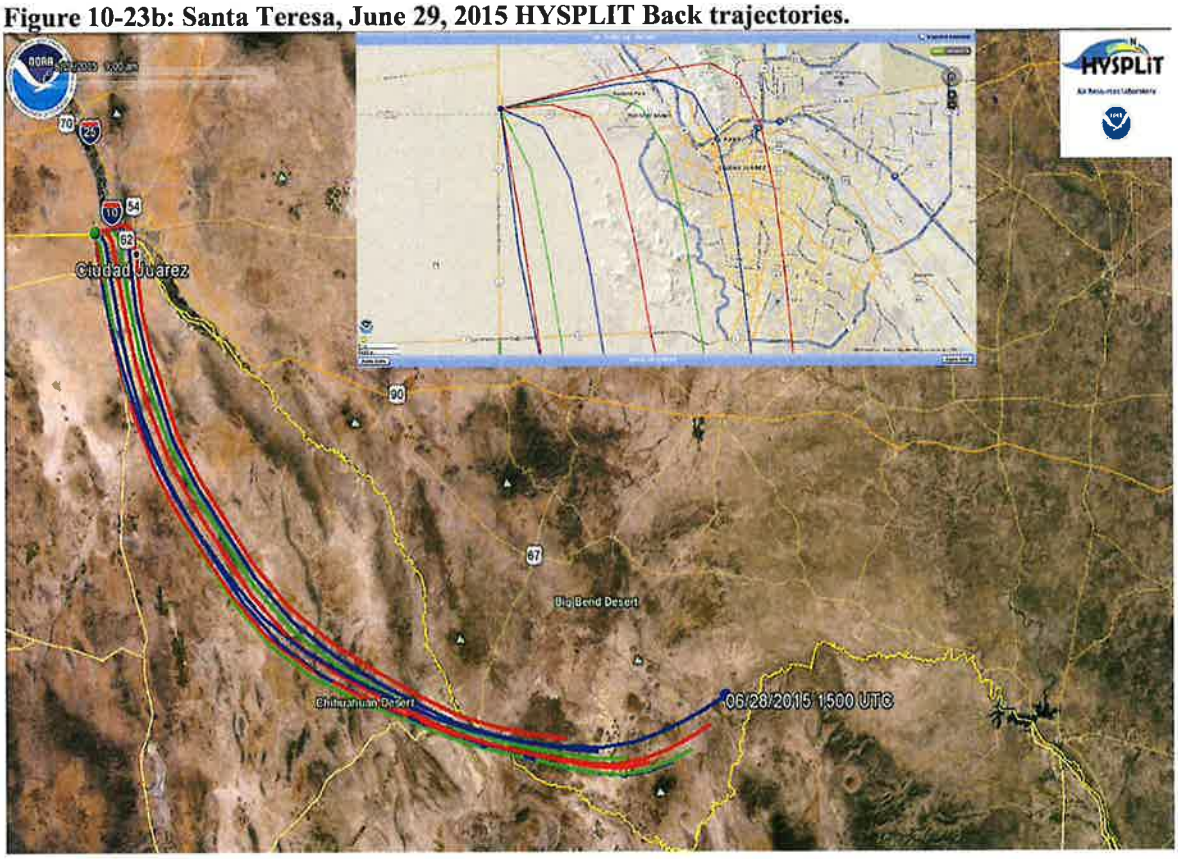
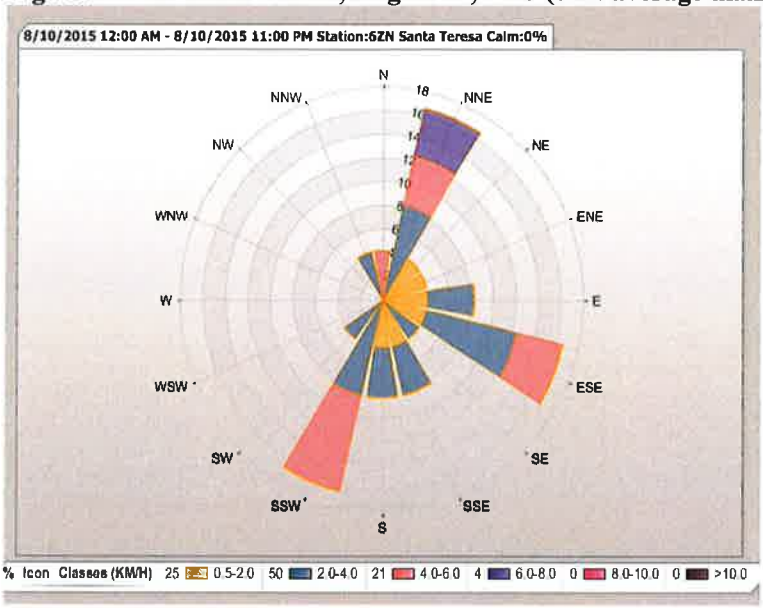


Figure 10-24a: Santa Teresa, August 10, 2015 (8-hr average maximum .072 ppm)



Approximately 70% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-24b: Santa Teresa, August 10, 2015 HYSPLIT Back trajectories.

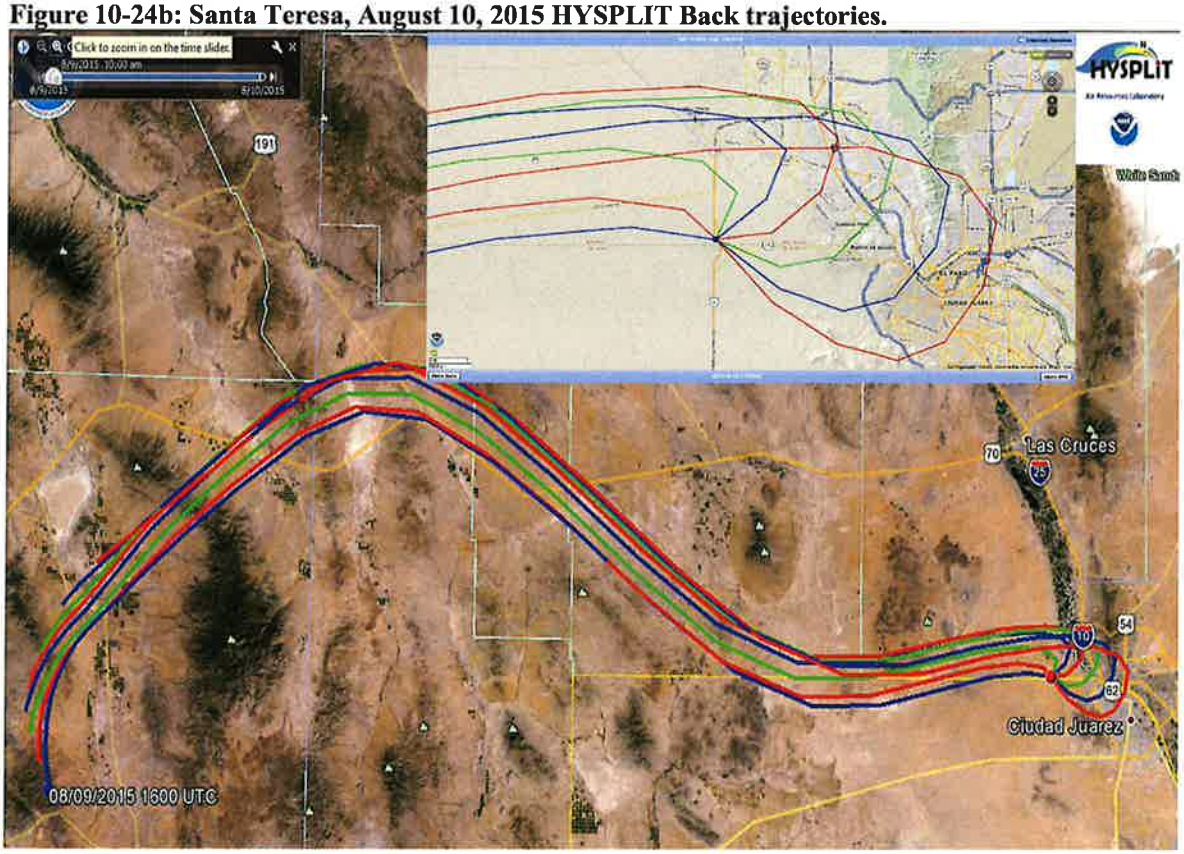
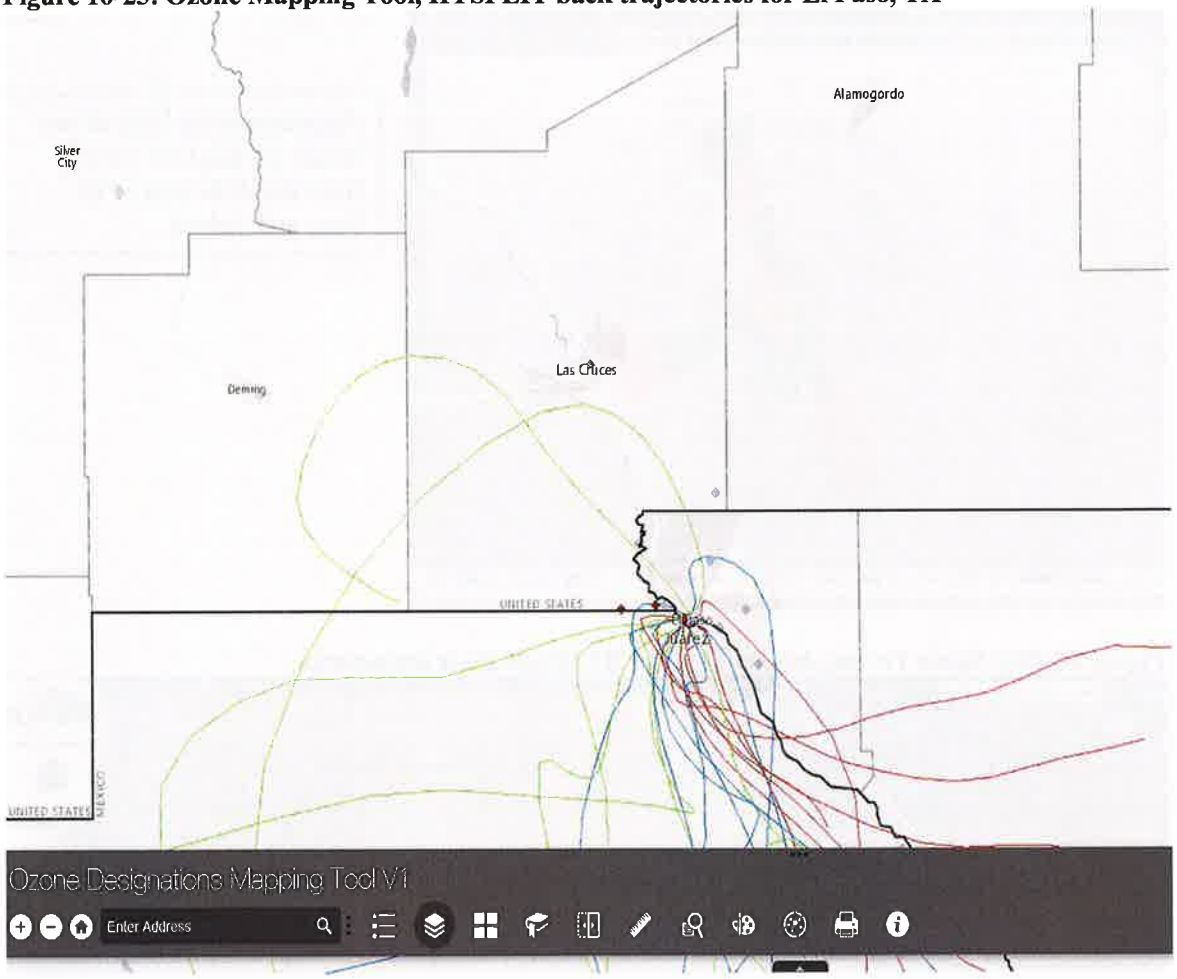


Figure 10-25: Ozone Mapping Tool, HYSPLIT back trajectories for El Paso, TX



Updated April 2016

Ozone Advance

Introduction

Ozone Advance is a collaborative effort by EPA, states, tribes, and local governments to encourage emission reductions in ozone attainment areas nationwide to maintain the National Ambient Air Quality Standards (NAAQS) for ozone. The goals of the program are to (1) help attainment areas take action in order to keep ozone levels below the level of the ozone NAAQS to ensure continued health protection for their citizens, (2) better position areas to remain in attainment, and (3) efficiently direct available resources toward actions to address ozone problems quickly.

The Ozone Advance program offers participating states, tribes, and local governments the opportunity to work in partnership with EPA and each other within a framework that can help focus participants' efforts to keep their air clean. While participation in the program is not a guarantee that an area will avoid a future nonattainment designation or other Clean Air Act requirements, it can better position the area to comply with the requirements associated with such a designation. For example, emission reduction actions undertaken as part of the program could potentially receive "credit" in future State/Tribal Implementation Plans (SIPs/TIPs) in the event an area is eventually designated nonattainment with a Moderate or higher classification, either in terms of reflecting a lower baseline from which additional reductions are needed to meet reasonable further progress goals or, if they occur after the baseline year, as a measure that shows progress toward attainment.[1]

Other collaborative ozone attainment programs preceded the current Ozone Advance program, including the Flexible Attainment Region (FAR) approach in the 1990s, the 2001 1-hour Ozone Flex Program,[2] and the 2006 8-hour Ozone Flex Program,[3] each of which was focused on taking proactive steps to reduce emissions of ozone precursors in attainment areas in order to ensure continued maintenance of the relevant ozone NAAQS. The Early Action

[1] In order to receive emission reduction credit as a measure in a SIP, the measure would need to be quantifiable, surplus (in terms of not being double counted both as part of the baseline and as a control measure in the SIP), federally enforceable, and permanent. It would also need to meet any other relevant requirement in CAA section 110 and/or 172, and if the measure is voluntary, the state would need to make an enforceable commitment to ensure that the estimated emissions reductions are achieved.

[2] Six areas participated in the 2001 1-hour Ozone Flex program: Austin and Corpus Christi, TX; Little Rock, AR; Shreveport-Bossier City, LA; Tulsa, OK; and Quad Cities Metropolitan Area, IA/IL.

[3] Five areas participated in the 2006 8-hour Ozone Flex program: Corpus Christi, TX; Oklahoma City, OK; Tulsa, OK; Austin-Round Rock, TX; and Quad Cities Metropolitan Area, IA/IL.

Compact (EAC) program[4] was distinct from these attainment area programs in that it focused on areas that were violating or close to violating the 1997 NAAQS at the time of designation, but was similar in that it encouraged early action, the use of innovative measures, and the development of stakeholder groups.

This document provides guidance on Ozone Advance, including general applicability, regulatory issues, program participation, and timelines. This program guidance was developed with the input of stakeholders that include state and local government officials and organizations, tribes and tribal organizations, and environmental and health groups.

Please visit the program website (www.epa.gov/advance) or contact Laura Bunte, EPA Office of Air Quality Planning and Standards, at (919) 541-0889 or advance@epa.gov if you would like additional information about Ozone Advance.

General Applicability

1. What is Ozone Advance?

Ozone Advance is intended to preserve or improve the air quality in ozone attainment areas, particularly in areas that have ambient ozone levels close to the level of the NAAQS and thus are at the greatest risk of violating the standard. The program provides a structure for local actions that reduce emissions, helps areas maintain air quality that meets the current ozone NAAQS or any future revised ozone NAAQS, and offers a means for states, tribes, and local governments to take the initiative in maintaining and improving their air quality.

Local areas can take steps to reduce ozone on their own, and EPA encourages these proactive efforts. However, some states, tribes, or local governments may prefer to pursue local emission reductions within the program framework with closer involvement and support from EPA. Representatives from participating areas will work with EPA to quickly evaluate, select, and implement control measures and programs. EPA can point to available tools and resources that may be used to resolve their issues, provide technical advice and other support, and, where appropriate, may recognize areas that have been especially proactive and successful in pursuing reductions.

The program may assist an area with efforts aimed at (1) reducing air pollution, (2) ensuring continued healthy air quality levels, (3) avoiding violations of the NAAQS that could potentially lead to a nonattainment designation and associated requirements, and (4) increasing public awareness about ground-level ozone as an air pollutant.

[4] Information about the former EAC program can be found on the Advance program website: www.epa.gov/advance.

Additional information about the program and current participants, and a variety of helpful resources are available on the program website: www.epa.gov/advance.

2. Why should an area want to take action to reduce emissions that contribute to ozone formation now, if it is not currently required to do so?

Robust, proactive work to address ozone precursors can reduce emissions sooner and avoid violations of the ozone NAAQS that might compromise public health. In addition, if the ozone NAAQS is lowered in the future, reductions now could position an area to achieve air quality concentrations that enable it to avoid a nonattainment designation or, if eventually designated nonattainment, could result in a lower classification. A lower classification means fewer mandated control requirements for the area. By acting in the near-term, a local government or state will have greater flexibility to choose control measures that make the most sense and are cost-effective for an area. Once a nonattainment designation is made, specific federal requirements apply, some of which, for Moderate and higher classifications, relate to specific categories of sources. Early actions to reduce ozone that keep an area in attainment, whether through Ozone Advance or otherwise, are expected to be less resource intensive than waiting until a nonattainment designation occurs before taking action.

Many measures that a local government, tribe or state may choose to implement could result in multi-pollutant benefits. For example, reductions of nitrogen oxides (NO_x) can lead to lower ambient fine particulate matter (PM) levels as well as lower ambient ozone levels. An area interested in taking proactive steps to address ozone has the opportunity to maximize ozone control co-benefits per the area's unique situation.

3. Is EPA also working with PM attainment areas to achieve emission reductions that will ensure continued maintenance of the PM NAAQS?

After launching Ozone Advance in April 2012, EPA developed a related program to assist attainment areas that are interested in reducing fine particulate matter ($PM_{2.5}$). Information about PM Advance can be found on the Advance Program website, www.epa.gov/advance.

The National Research Council of the National Academy of Sciences recommended that an integrated, multi-pollutant approach to managing air quality would be most effective. EPA encourages Ozone Advance participants to maximize multi-pollutant reductions when selecting measures and programs to further reduce ozone. Strategies to achieve multi-pollutant (NO_x and PM in particular) reductions related to diesel emissions will be central to this work, as well as efforts to reduce residential wood smoke and other PM sources. Ozone Advance participants in areas where the air quality is also violating a PM standard should combine their Advance efforts

into one multi-pollutant program that addresses both ozone and PM. In addition, EPA will work with participants to provide information on the multi-pollutant co-benefits associated with transportation, land use, energy efficiency, and climate change programs.

4. Who can participate in Ozone Advance?

States, tribes, and/or local governments that want to participate in Ozone Advance must meet the basic program eligibility criteria in A, B, C, and D below.

A. States, tribes, and/or local governments can join the program with respect to areas that are not currently designated nonattainment for any ozone NAAQS that has not been revoked. They may not join the program with respect to areas that are currently designated nonattainment (with any classification) for any ozone NAAQS that has not been revoked.

Areas projected to be designated nonattainment for a new ozone NAAQS may participate in Ozone Advance until designations are effective. For example, EPA expects that designations for the 2015 ozone NAAQS will be finalized in October 2017 and will be effective a few months later. Once designations are effective, areas designated nonattainment with a Moderate or higher classification would drop out of Ozone Advance in order to focus on compliance with the planning and other requirements that apply to them. Areas participating in Ozone Advance that are later designated nonattainment with a Marginal classification may continue participating in Ozone Advance until such time as they may be reclassified to a Moderate or higher classification.

Refer to the table below to confirm whether your area's designation status for each ozone NAAQS at the time of sign-up allows for the area to join Advance:

Designation Status at Time of Sign-Up	1979 1-hr NAAQS (revoked)	1997 8-hr NAAQS (revoked)	2008 8-hr NAAQS	2015 8-hr NAAQS
Attainment (incl. maintenance areas)	Yes	Yes	Yes	Yes
Unclassifiable	Yes	Yes	Yes	Yes
Attainment/Unclassifiable	Yes	Yes	Yes	Yes
Nonattainment, Marginal	Yes	Yes	No (however, areas that joined Advance prior to the effective date of their nonattainment, Marginal	No (however, areas that join Advance prior to the effective date of their nonattainment, Marginal designation

			designation may continue participating until such time as they may be reclassified to a higher classification)	may continue participating until such time as they may be reclassified to a higher classification)
Nonattainment, Moderate or higher classification	Yes	Yes	No (however, after the 2008 standard is revoked, the area could join and participate)	No (however, these areas can join and participate until the designation is effective (expected late 2017/early 2018))

B. States, tribes, and/or local governments must generally identify the area(s) within their jurisdiction with respect to which they would like to participate.

C. Where possible, states, tribes, and/or local governments should identify and be able to report on the air monitor(s) that reflect or best represent the air quality in the area(s); this may require consultation with the state to determine what monitor(s) the state has reported to EPA as being indicative of air quality in the area(s). EPA recognizes that some areas, particularly in parts of the western U.S., may need to utilize data from outside the given area to track progress. These areas should discuss their situation with EPA prior to signing up for Ozone Advance.

D. EPA will evaluate a state's compliance with existing emissions inventory requirements before accepting an area into Ozone Advance. States reporting obligations for the National Emissions Inventory must be met prior to an area applying for participation in Ozone Advance. Some local agencies' emissions reporting supersedes the state-submitted emissions; where this is the case, the prospective participant(s) should consult EPA prior to signing up for the program. Emissions inventory reporting requirements must continue to be met by the relevant state or local agency for a given Advance area in order for the area to remain in the program.

Other applicants, such as a regional, multi-state, or local council of governments (COG), will be considered by EPA. These organizations should discuss the possibility of their participation with EPA prior to signing up. Whether or not a COG becomes a direct participant in the program, it will be important for state, tribal, and local government participants to coordinate with area COGs to give them an opportunity to provide input during the development

of an Ozone Advance "Path Forward," and to ensure they are kept informed about efforts undertaken within the program.

EPA does not necessarily intend for townships or other similarly small local governments to participate, on their own, in Ozone Advance. However, small local governments will be considered by EPA and should discuss the possibility of their participation with EPA prior to signing up.

States, tribes, and/or local governments that are already signed up and that are participating in Ozone Advance may continue to participate in the program if the area of concern is eventually designated nonattainment and classified Marginal. Such areas would not be exempt from any requirements that apply to them, such as New Source Review, transportation conformity, and the requirements to submit an emission statement rule and a base year actual (i.e., not projected) emissions inventory. Marginal areas do not have specific Clean Air Act-mandated planning requirements. Rather than wait until planning may eventually be required, it makes sense for these areas to actively step up their efforts to reduce ozone. This may better position an area to attain within three years after designation, and thereby avoid reclassification to a higher classification. Regardless of a Marginal area's participation in the Ozone Advance program, if the area does not meet its Marginal area attainment date and is not eligible for the Clean Air Act's one-year extensions, it will be reclassified to a higher classification. Although the state, tribe, and/or local government would not be able to continue participating in Ozone Advance with respect to the area, the efforts they pursued under Ozone Advance should not end, but would transition into SIP planning efforts. Areas classified as Moderate or a higher classification have specific attainment planning requirements that are not required for Marginal areas. If a Marginal area participating in Ozone Advance is reclassified as Moderate or a higher classification, the Ozone Advance activities could be helpful in meeting certain SIP requirements. EPA would provide SIP assistance and support as it does for all nonattainment areas.

Areas that have been redesignated to attainment for an ozone NAAQS and that have an approved maintenance plan may participate in Ozone Advance. However, these areas must implement their maintenance plans as approved. Participation in Ozone Advance would not relieve any area from any requirements to which they are otherwise subject under the Act or EPA's regulations, including the transport regulations issued pursuant to Clean Air Act section 110(a)(2)(D), or from any requirement in an approved SIP. Measures and programs undertaken as part of Ozone Advance would be in addition to those included in the approved SIP, and could provide the area with a buffer against future violations.

Areas that are still designated nonattainment for any revoked ozone NAAQS may join Ozone Advance if they are not designated nonattainment for any subsequent ozone NAAQS that

have not been revoked. Otherwise, any area that is designated nonattainment for an ozone NAAQS that has not been revoked may not sign up for Ozone Advance until the area has been redesignated attainment with an approved maintenance plan. However, early progress can still be made. If a state has submitted a maintenance plan to EPA, then pending EPA approval of the plan EPA could consult with the area and provide some level of assistance. Full participation in Ozone Advance would not occur until the area has been redesignated attainment with an approved maintenance plan, and has met the other program eligibility criteria (i.e., ensure that emissions inventory reporting requirements are met and, where possible, identify the monitor(s) that reflect the area's air quality).

Ozone Advance is the program EPA is offering to provide assistance to areas interested in taking steps to stay in attainment of the ozone NAAQS. Former Early Action Compact (EAC) areas and former 8-hour Ozone Flex (also called 8-O3 Flex) areas that meet the Ozone Advance program eligibility criteria are encouraged to participate in Ozone Advance.[5]

A state, tribe, or local government that intends to sign up for Ozone Advance should discuss the prospect with the other potentially affected governmental entities, and, ideally, all of the parties interested in participating should submit one joint sign-up letter together. If a state, tribal, or local government signs up, but other potentially affected governmental entities choose not to participate, the applicant should copy the other potentially affected governmental entities on any sign-up letter submitted to EPA. Once EPA acknowledges the area's acceptance into the program in writing (i.e., an e-mail or letter), the participant(s) should coordinate with the other potentially affected governmental entities to give them an opportunity to provide input during the development of the area's Path Forward, and to ensure they are kept informed about efforts undertaken within the program. Prospective program applicants should also coordinate with EPA and appropriate stakeholders prior to signing up for the program.

5. Who cannot join Ozone Advance?

States, tribes, and local governments cannot join the program if the area of concern is designated nonattainment for any current ozone NAAQS that has not been revoked. An area that is designated nonattainment for any current ozone NAAQS that has not been revoked, but that is currently attaining that NAAQS may not sign up for Ozone Advance until the area has been redesignated attainment with an approved maintenance plan. If a state has submitted a maintenance plan to EPA, then pending EPA approval of the plan EPA could begin consulting with the area and provide some level of assistance. Full participation in Ozone Advance would not occur until the area has been redesignated attainment with an approved maintenance plan.

[5] Ozone Advance participants may be interested in reviewing the types of activities that were pursued by Ozone Flex and EAC areas; information about these efforts is available on the Advance website, www.epa.gov/advance.

Applicants must also be able to generally identify the area(s) with respect to which they are signing up. In addition, emissions inventory reporting requirements must have been complied with prior to sign up and, where possible, applicants should indicate the air monitor(s) that reflect the air quality in the area(s).

6. What is the timing for participation in Ozone Advance?

We encourage states, tribes and local governments to participate in Ozone Advance as early as possible, but there is no requirement that an area commit to the program by a specific date as long as they sign up prior to being designated nonattainment (i.e., prior to the effective date for final designations for the ozone NAAQS). There is currently no expiration date for enrollment. We recommend that an area commit to Ozone Advance for a five-year term, with the option to renew at the end of the first term and each successive term. An area can choose to end its participation in the program at any time, with notice to EPA.

7. How can an area apply for participation in Ozone Advance?

We encourage interested states, tribes, and local governments to carefully consider participation, reviewing pertinent issues including, but not limited to, projected industrial and population growth, trends and concerns regarding air quality, and support of such a program by the state, tribes, and local governments.

To sign up for the program, submit a brief "sign-up letter" to Laura Bunte of the EPA Office of Air Quality Planning and Standards (OAQPS) preferably by e-mail to advance@epa.gov. If desired, the letter may also be mailed to the following address:

Ozone Advance
c/o Laura Bunte, Mail Code C304-01
109 TW Alexander Drive
RTP, NC 27711

The sign-up letter should be signed by the appropriate state, tribal, and/or local government official(s) with the authority to implement the program and to assist in leveraging staff and other resources as needed. A copy should also be sent to the relevant EPA Regional Office(s). EPA will review to determine that the area has met the basic program eligibility requirements, and will then indicate by e-mail and letter whether the applicant(s) has/have been accepted into the program.

8. Must a Memorandum of Agreement/Memorandum of Understanding (MOA/MOU) be developed and signed in order to participate in Ozone Advance?

No. However, to the extent a participating state, tribe, or local government would benefit from having a more formal agreement in place, EPA would be willing to work with them to develop an MOA/MOU.

9. What other submissions to EPA are needed?

As a first step toward minimizing the potential for ozone concentrations in excess of the ozone NAAQS, a participating area should evaluate a variety of voluntary and mandatory control options and other programs. EPA can provide advice during this evaluation. No later than one year after signing up for the program, the area should submit a "Path Forward" to the EPA program contact via mail per #7 above, or via e-mail to advance@epa.gov, with a copy to the relevant EPA Regional Office. At a minimum, the Path Forward should fully describe the measures and/or programs the area will implement and provide a schedule for the implementation of each one. Participants should consider providing additional information beyond this minimum, particularly if the Path Forward is a helpful way to communicate with area stakeholders and the public regarding ozone and what is being done locally to address it. See Attachment A for more information. Paths Forward are made available on the program website.

Unlike a formal SIP submission, EPA will not approve or disapprove the commitments made by the state, tribe, and/or local government, and the input provided by EPA during the course of Ozone Advance will not serve as an approval for purposes of any eventual SIP. However, EPA may provide feedback to the area regarding whether commitments are likely to result in emission reductions and public health benefits.

The Path Forward developed for the area can be submitted by a state and/or a tribe and/or a local government, although preferably it would be submitted jointly by all of the program participants. The letter specifies actions the signatories have agreed to implement to reduce ozone precursor emissions and thereby improve local air quality. The Path Forward is not a federally enforceable document and does not institute any legal or financial obligations on any entity.

10. What happens after a Path Forward is submitted?

The area should begin or continue implementing the selected measures and programs expeditiously. In order to most quickly impact ambient ozone levels, implementation should occur to the extent possible for the ozone season immediately following the Path Forward, recognizing that some measures/programs may take longer to implement or may have longer lead times until emission reductions are realized.

11. Should participants periodically share information with EPA?

Yes, participants should stay in communication with EPA periodically throughout the program. In addition, at least once a year from the time the Path Forward is sent to EPA, a participating area should briefly and informally summarize the status of each of the area's measures and programs undertaken under Ozone Advance (including a comparison of current status for each measure/program as compared with the schedule laid out in the Path Forward), current air quality, stakeholder meetings/events, and any other information the area would like to highlight. The information should be sent to the EPA program contact via mail per #7 above, or via e-mail to advance@epa.gov. Information from these annual check-ins may be made available on the program website, www.epa.gov/advance .

Regulatory Issues

12. Does Ozone Advance establish new or avoid existing regulatory requirements?

No, this program does not create or avoid any regulatory requirements. For example, it does not defer nonattainment designations under a new NAAQS. Participation in Ozone Advance does not substitute for or allow the participant(s) or regulated entities in those communities to avoid applicable requirements under the Clean Air Act, EPA regulations, or an approved SIP. While the program itself does not establish any regulatory requirements for state, tribal, or local government participants, if, as part of the program, state, tribal, or local authorities adopt regulations, such regulations likely would establish enforceable requirements on the regulated entities (i.e. enforceable by the state or local government; state and local regulations may even become Federally enforceable if they are incorporated into the SIP).

13. What happens if violations of the ozone NAAQS occur despite an area's participation in the program?

The area should quickly evaluate, select, and implement additional measures and programs to mitigate its ozone problem. It is important to note that Ozone Advance does not shield an area from being redesignated nonattainment if the area eventually violates the ozone NAAQS. Should a violation occur, EPA would consider the factors in section 107(d)(3)(A) of the Act. These include "air quality data, planning and control considerations, or any other air quality-related considerations the Administrator deems appropriate." Where control measures are actively being implemented by program participants, EPA may allow time to determine whether such measures bring the area back into attainment. This is not meant to suggest that participation in Ozone Advance will result in special treatment by EPA should an area begin to measure violations. It is meant to acknowledge that EPA may include an area's active pursuit of

control measures and programs as one factor among the set of factors it considers when exercising its discretion to revise the area's designation to nonattainment, and this would equally be the case whether the area is a participant in Ozone Advance or not.

It is important to note the distinction in the Clean Air Act between initial designations under a **new or revised** NAAQS (CAA section 107(d)(1)(A)) and redesignations under an **existing** NAAQS (CAA section 107(d)(3)(A)). Participation in the Advance program does not defer nonattainment designations under a **new or revised** NAAQS. The measures being implemented by an area to reduce ozone may be a factor (among others) that EPA considers when making a decision as to whether an attainment area that is violating an **existing** ozone NAAQS should be redesignated as nonattainment.

14. Might the way an area is defined for purposes of participation in Ozone Advance affect future nonattainment boundaries, for example might it result in the eventual designation of partial counties/cities or non-contiguous nonattainment areas?

No. Regulatory decisions regarding nonattainment boundaries will not be impacted by Ozone Advance participants' definition of areas included in the Ozone Advance program.

15. Will states receive SIP "credit" for emission reduction measures undertaken as part of Ozone Advance?

EPA will not, as part of Ozone Advance, review commitments made under Ozone Advance for purposes of approval or disapproval into a SIP. However, if an area participating in Ozone Advance is subsequently designated nonattainment for any current or future ozone NAAQS, emission reductions achieved from measures implemented as part of the program could be accounted for in future SIP planning. We describe two ways in which they could potentially be accounted for below in #16.

EPA encourages participating states, tribes, and/or local governments to adopt proven, effective control measures to reduce ozone expeditiously. We also recognize that some of the measures states, tribes, and localities may choose to adopt under the program may be innovative measures. EPA supports flexible approaches that account for the complex nature of ozone formation and in various previous SIP approvals has provided SIP credit for innovative measures

that meet SIP approval criteria.[6] EPA is interested in working with areas to help them identify innovative measures that suit the area's unique needs.[7]

16. How can early reductions achieved as part of Ozone Advance be recognized in any future SIP that the area may need if designated nonattainment with a Moderate or higher classification for any ozone NAAQS?[8]

If emission reductions occur through Ozone Advance **prior to** the baseline year for purposes of attainment demonstration modeling or a reasonable further progress demonstration, then the reductions would lower the emissions baseline. A lower baseline means that the area would need fewer future emission reductions in order to demonstrate attainment and/or proportionally fewer emission reductions would be needed to show reasonable further progress.

If emission reductions occur through Ozone Advance **after** the baseline year, the area may take credit for those reductions subject to Clean Air Act requirements, such as demonstrating that the reductions are surplus, quantifiable, enforceable, and permanent. Credit earned in this way means that fewer additional emission reductions will be needed to meet reasonable further progress goals and to demonstrate attainment, thereby bringing the finish line of attainment with the ozone NAAQS closer.

For example, if the area must achieve a 15% reasonable further progress reduction in VOC emissions over six years, reductions that occurred before the baseline year for calculating the 15% would be reflected in a reduced baseline; reductions that occur after the baseline year but during the six-year period could be counted toward the 15% reduction requirement.

The issue of SIP baselines is typically addressed in the ozone implementation rule for a new or revised ozone NAAQS. With respect to the 2015 ozone NAAQS, EPA plans to address SIP baselines in the implementation rule that is expected to be proposed in fall 2016, and finalized by fall 2017. Although the approach that will be taken in the upcoming rule cannot be specified at this point, it is worth noting that in the past EPA has allowed some flexibility in determining the appropriate baseline year.

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[6] EPA encourages states to seek SIP credit for voluntary emission reductions. A variety of guidance materials are available to guide states considering voluntary measures for adoption into a SIP. See Attachment C for some examples; this list is not exhaustive of all guidance on SIP credit.

[7] In order to receive emission reduction credit as a measure in a SIP, the measure would need to be quantifiable, surplus (in terms of not being double counted both as part of the baseline and as a control measure in the SIP), federally enforceable, and permanent. It would also need to meet any other relevant requirement in CAA section 110 and/or 172, and if the measure is voluntary, the state would need to make an enforceable commitment to ensure that the estimated emissions reductions are achieved.

[8] See also Question #4 above regarding eligibility to participate in Ozone Advance.

17. Can EPA guarantee that participating in Ozone Advance will cause an area to remain in attainment?

EPA can provide no guarantees. A participating state, tribe, and/or local government's success in the program depends largely on its/their level of commitment and the effectiveness of the actions taken under Ozone Advance. Evaluating, choosing, and expeditiously implementing measures and programs that result in actual emission reductions will be critical, and in many cases essential, to success. One of the benefits of participating in the program is that governmental entities and citizens become more aware of emission sources and what may cause ozone levels to increase, and may be more likely to react to potential issues before ozone levels rise. Proactive work to address these issues should lead to a greater chance of success in keeping ambient levels of ozone below the level of the NAAQS or, if the area is eventually designated nonattainment, could help prevent a higher classification than the area would otherwise have had (e.g., Marginal instead of Moderate).

18. If Federal measures are likely to provide the reductions needed in order to bring many eventual Marginal areas back into attainment, why should these areas pursue local reductions?

EPA will continue to promulgate Federal measures that reduce NO_x and VOC emissions and that should lead to improved air quality levels in many areas; however, local action is still needed in some areas in order to attain. Marginal areas in particular may attain the ozone NAAQS within three years of designation due to reductions of ozone precursors resulting from a number of Federal and state emission reduction actions that have already been adopted. Such programs include more stringent emission standards for on-road and non-road vehicles and equipment (with associated fleet turnover), regional reductions in power plant emissions to address interstate transport, and other rules such as the boiler maximum achievable control technology (MACT) standards. Often, these reductions in conjunction with other ongoing state and federal controls should be sufficient to bring about attainment for some Marginal areas. In other areas, additional control measures may be needed for timely attainment. While Federal measures are likely to bring some Marginal areas back into attainment, these areas should consider taking steps to better ensure that once they return to attainment, they will remain in attainment. Among other things, Ozone Advance can facilitate actions that reduce emissions to provide an improved buffer against future air quality violations that may lead to nonattainment.

19. How should transported air pollution be accounted for within Ozone Advance?

Ozone Advance is not intended to address transport obligations pursuant to Clean Air Act section 110(a)(2)(D). Ozone Advance participants should be aware of their area's potential to adversely affect downwind air quality, as well as the potential impact of upwind air quality on

the area. For more information on EPA's programs related to interstate air pollution transport, see www.epa.gov/airmarkets/interstate-air-pollution-transport.

20. Can a state seek to incorporate measures into its SIP even if it is not currently subject to nonattainment area planning requirements?

Yes. A state can consider submitting adopted measures as a SIP revision at any time, even if there are no Clean Air Act requirements to do so. Assuming EPA approves the SIP revision, it will strengthen the SIP, ensure that control measures are Federally enforceable, and provide the mechanism to allow credit for the emission reductions associated with the measures for any future reasonable further progress (RFP) or attainment plan requirements, assuming they are not counted in the baseline.

Program Participation

21. What are the steps in participating in Ozone Advance?

Step 1 – Send a Sign-Up Letter to EPA

Participation in Ozone Advance is begun by the state, tribe, and/or local government submitting a sign-up letter to EPA, and EPA accepting them into the program following a review to ensure the eligibility criteria described in #4 above are met. There is no particular format that must be followed in this letter; refer to the program website (www.epa.gov/advance) for examples of letters submitted by current participants. The letter should express the willingness of all of the signatories to coordinate with each other and with EPA and to quickly implement measures and other programs to reduce ozone. Specific measures do not need to be identified in the sign-up letter, although if the applicant would like to highlight any existing measures and programs, they are welcome to do so. The letter should be signed by the appropriate local, state, and/or tribal official(s) with the authority to implement the program and to assist in leveraging staff and program funds as needed.

Step 2 – Identify Available Information Regarding the Area's Ozone Issue

This information could relate to the sources of ozone precursors, the degree of the local contribution to ozone based on available modeling by EPA or others, the appropriate area from which emissions reductions should occur, and existing or upcoming control measures and programs affecting sources in the area.[9] It would be helpful if this information were shared

[9] One source of information on the emissions sources in the area is the National Emissions Inventory (NEI). NEI data can be found at www.epa.gov/chief/.

informally with EPA, so that we may direct you to available information and resources that may assist you with needs you have identified.

Step 3 – Secure Stakeholder Participation

It is important to identify, contact, and secure the participation of key stakeholders. This is commonly accomplished by the formation of a local air quality committee consisting of representatives from local government, industry, environmental and citizens groups (such as environmental justice organizations), and other interested parties. Stakeholders may need to be added as emissions sources and control measures are identified.

Step 4 – Coordinate Control Strategy Selections and Develop Path Forward

Ozone Advance emphasizes expeditious, local action to reduce ozone; to keep the focus on taking steps to reduce ozone, as opposed to prolonged planning, participants should coordinate their control strategy options with area stakeholders, make their selections, and document their selections in a Path Forward within no more than a year after joining the program. It is important not to remain in planning mode for too long before starting to implement the plan.

Ozone Advance participants should consider a variety of emission reduction measures and programs, which may include traditional control measures as well as other measures, policies, and programs related to, for example, energy efficiency and mobile sources. EPA is available to assist areas that are interested in exploring their options for potential measures and programs that could be included in their Ozone Advance Path Forward.

The participating state, tribe, and/or local government will lead coordination efforts with stakeholders and with EPA. EPA will work with the participant(s) early in the process as needed to identify and help them resolve technical and other issues and provide information about emission reduction and public awareness/education options. EPA's technical assistance will generally be in the form of directional advice; EPA does not anticipate, for example, conducting new modeling on behalf of a particular Ozone Advance area. The participant(s) will be the lead on any technical efforts they decide are appropriate, with EPA's guidance. The state should be included in these discussions to ensure technical consistency.

The control measures an area chooses to implement may require businesses, industries, and citizens to comply with ordinances, codes, or other binding state or local regulations, or may encourage voluntary actions that reduce ozone precursors. The geographic area covered by such measures should be based on the location and nature of sources, or other factors important to the area and to achieving reduction of ozone precursor emissions. Other programs that relate to

public education and awareness may be considered as well. The process should offer opportunities for discussion and debate among stakeholders; these opportunities should be provided and led by the participating state, tribe, and/or local governments.

States, tribes and EPA can provide valuable information for local governments. It may be helpful to meet with the state/tribal and EPA representatives to discuss issues and options before the Path Forward is submitted. EPA will review and provide comments on the area's preliminary decisions and will work with local technical or policy committees and the state/tribe(s). Local plans should complement current or potential future state/tribal or Federal efforts for the area. Local governments participating in Ozone Advance should identify the state-level controls and programs that may impact local ozone, and, similarly, participating states should identify any local controls and programs that may have an effect in the local area.

EPA suggests that participating areas consider enhancing the area's Path Forward by including background related to the area's ozone issue and additional detail about the area's plans for addressing it. Helpful information to include would be, for example, an executive summary, list of measures to be implemented and a detailed implementation schedule, discussion of roles and responsibilities, air quality trends, demographic information, a map of the area, information about important NOx or VOC-reducing measures that have been completed or that are already underway, and provisions for public/stakeholder involvement. Providing additional information of this sort is not a requirement for participation in Ozone Advance. However the inclusion of this information in a Path Forward could allow it to serve as a useful blueprint for the area to work from in working with stakeholders and as a focal point for public recognition of the area's efforts to improve air quality. Virtually all of the Ozone Advance participants to date have elected to develop Paths Forward that include such additional information. See Attachment A for further information.

Some participating areas may also consider technical work (e.g., emissions inventory development/refinement, air quality modeling, looking at intrastate transport and the effect of planned new sources outside the Ozone Advance area) to support their work to address ozone. Although the development of technical analyses is not a requirement of the program, to the extent a program participant elects to pursue appropriate technical work, EPA encourages these efforts and will be available to provide advice to the program participant(s) who wish to develop these analyses. The development of technical support should be of particular interest to areas that are very close to, or already violating the ozone NAAQS, in order to best align their efforts under Ozone Advance with any eventual SIP requirements.

Once the area has sought stakeholder involvement and input and has selected control measures and programs, the selections should be documented as the area's Path Forward. There is no particular format that must be followed; refer to the program website

(www.epa.gov/advance) for examples of Paths Forward submitted by current participants. The Path Forward should be sent to EPA via mail or e-mail to the EPA contact noted in #7 above..

Step 5 – Implement Control Strategy Per Schedule and Provide Annual Status Updates

Program participants should begin implementing the measures and programs specified in the Path Forward immediately. Participants should stay in communication with EPA periodically throughout the program. In addition, each year from the time the Path Forward is sent to EPA, a participating area should briefly summarize the status of each of the area's measures and programs undertaken under Ozone Advance (including a comparison between current status for each measure/program with the schedule laid out in the Path Forward), current air quality, stakeholder meetings/events, and any other information the area would like to highlight. These status updates should be provided via letter or e-mail to the EPA contact noted in #7 above.

Step 6 – Apply for Federal Grants, if Desired

The Federal grants website www.grants/gov may be of interest to program participants. The website enables agencies and organizations to electronically find and apply for competitive grant opportunities from all Federal grant-making agencies. Over 1,000 grant programs offered by the 26 Federal grant-making agencies can be accessed from the website, and some of these may be useful in the context of this program.

One such grant program is EPA's Diesel Emissions Reduction Act (DERA) program, which provides grant funding to eligible entities to reduce diesel emissions by retrofitting, repowering, and replacing older diesel engines. Funding for eligible entities to complete diesel emission reduction projects is periodically offered through a competitive process (such as the national grants competition) or through lottery (such as the rebate program). Additional information on the DERA program, including availability of funding and requirements for applicants can be found at www.epa.gov/cleandiesel/.

There is currently no funding associated specifically with the Ozone Advance program, however EPA may provide preferred status to Ozone Advance participants when applying for grants programs.

22. Must a participating area undertake emissions inventory refinement or modeling as part of participation in Ozone Advance?

No. Compliance with existing emissions inventory requirements is necessary in order to join and continue participating in Ozone Advance, specifically, the Air Emissions Reporting

Requirements rule (AERR, 40 CFR Part 51). However, further emissions inventory refinement and modeling are not otherwise necessary prerequisites to participation in the program. EPA encourages participating areas to (1) consider existing emissions inventories and modeling information and/or develop new analyses as necessary in order to characterize the nature of the ozone issue in the area (i.e., is the area NO_x or VOC limited, is the area upwind of nonattainment areas, might the area be considered to affect ozone levels downwind in any future revised ozone NAAQS), (2) provide a technical foundation for control selections and schedules, and (3) ensure that available resources are used efficiently and effectively. Attachment B provides a general discussion of emissions inventories, modeling, and controls.

23. What happens if the ozone concentrations in an area violate the ozone NAAQS?

The success of Ozone Advance for a given area will lie in the area's willingness to undertake new measures that result in real emission reductions. EPA recognizes that some areas are affected by the transport of upwind pollution; however, it is still important for local reductions to be achieved, where possible. Similarly, an area's emissions may affect an ozone nonattainment area downwind. As soon as an area determines that the air quality is deteriorating, the area should act quickly to supplement the measures and programs as listed in its Path Forward with additional measures/programs. If the air quality in the area deteriorates and air quality violations occur, EPA may revise the area's designation to nonattainment; pending any decision, EPA will continue working with the area to see what additional measures can be taken to help improve the air quality.

24. Must a participating area commit to contingency measures?

No. Ozone Advance does not require that areas commit to adopt and implement specific contingency measures in the event the area violates the ozone NAAQS. EPA has attempted to streamline the program to the extent possible in order to encourage areas to keep their focus on actually taking proactive steps to improve their air quality. The goal is to encourage areas to take action to reduce ozone concentrations even though they are not currently required to do so. In lieu of contingency measures, Ozone Advance participants should consider quickly implementing additional measures should the quality of the air in their area begin to deteriorate; while participants are not required to develop contingency measures, they should begin to consider their options regarding additional measures well before they are needed. Measures undertaken should not be discontinued even if the area continues to remain in attainment, in order to protect against increases in local as well as downwind transported ozone concentrations.

25. What implementation schedule will participating areas follow?

EPA recommends that an area commit to Ozone Advance for a five-year term, with an option to renew at the end of the term and each successive term. An area's ambient air quality over the next several years would potentially affect designations following any possible revisions to the NAAQS in the future; therefore, it is important that the area work to improve air quality for a sustained period in order to best ensure it remains in attainment. The Path Forward should provide a schedule for implementation of the indicated measures. Significant actions that are necessary or may affect control measure implementation, such as required reviews/approvals, acquisition of equipment, etc., should be included in the schedule.

The Ozone Flex program specified the submission of a semi-annual program report, which could become an annual report if the area's design value was maintained or decreased. EPA contemplated eliminating these reports in order to further streamline the administration of Ozone Advance and the level of state/tribal/local resources directed to the program. However, EPA believes that some level of information sharing is beneficial to ensure that all parties are kept informed about program progress. The intention is that the status updates submitted to EPA each year will be informal (e.g., in the form of a check-in e-mail or letter) and will provide a brief, general summary of the status of each of the area's measures and programs undertaken under Ozone Advance (including a comparison of current status for each measure/program with the schedule laid out in the Path Forward), current air quality, stakeholder meetings/events, and any other information the area would like to highlight.

26. What provisions should be made for public and stakeholder involvement?

Support for the proposed measures in the area's list of Ozone Advance commitments from organizations and institutions in the area is vital. Local officials can determine the best means to seek and respond to input from groups or individuals interested in or affected by the measures. We recommend that the commitments be developed by a local air quality committee that includes environmental, health, and citizens groups, as well as representatives from local industry and government. Input on appropriate measures from environmental and health groups, citizens groups, industry representatives, the general public, states/tribes, and EPA should be given thoughtful consideration by the committee.

27. How long should an area plan on participating in Ozone Advance?

Participation should last for a period of five years or longer as needed/desired. Participants may terminate their involvement in Ozone Advance at any time, with notice to EPA. Similarly, EPA may end a state's, tribe's or local government's participation in the program at any time, such as where a participant does not demonstrate any effort to make air quality improvements during the course of the program.

28. How does the Ozone Advance timeline compare with the schedule for implementation of the ozone NAAQS?

Ozone Advance participants should keep the NAAQS implementation dates in mind when deciding upon the extent and timing of the measures and programs to be put in place. In particular, areas likely to be designated nonattainment with a Marginal classification should be aware of their window of opportunity to effect change before reclassification to a higher classification may occur.

Sample Timeline; Some Dates Are Tentative

July 2015	2008 ozone NAAQS Marginal area attainment date; attainment demonstration/rate of progress (ROP)/reasonable further progress (RFP) SIPs due for areas classified as Moderate or higher for the 2008 ozone NAAQS
Oct. 2015	Final 2015 ozone NAAQS
Oct. 2016	State/tribal recommendations for 2015 ozone NAAQS designations (expected to be based on 2013-2015 and preliminary 2014-2016 air quality data, including any exceptional event considerations)
Oct. 2017	Final designations for 2015 ozone NAAQS (expected to be based on 2014-2016 air quality data; early certified 2017 air quality data may also be relevant)
Late 2017/ Early 2018	Effective date for final 2015 ozone NAAQS designations.
July 2018	2008 ozone NAAQS Moderate area attainment date (based on 2015-2017 air quality data)
Late 2020/ Early 2021	2015 ozone NAAQS Marginal area attainment date (based on the three most recent, complete years of data); attainment demonstration/ROP/RFP SIPs due for areas classified as Moderate or higher for the 2015 ozone NAAQS
Late 2023/ Early 2024	2015 ozone NAAQS Moderate area attainment date (based on the three most recent, complete years of data)
2018-2019	2008 ozone NAAQS revoked

29. Who did EPA coordinate with prior to beginning the Ozone Advance program?

OAQPS asked the EPA Regional Offices to talk with their states about our plans to offer Ozone Advance. We briefed the National Association of Clean Air Agencies (NACAA) criteria pollutants committee and the National Tribal Air Association, and described our plans to the Environmental Council of the States (ECOS) and multijurisdictional organizations. We also

discussed the program with the American Lung Association and EPA's Clean Air Act Advisory Committee.

The draft guidance was distributed to states, tribes, local governments; state, tribal, and local organizations; environmental, health, and transportation organizations; and industry representatives for review and comment. During the review period we provided a webinar to summarize the draft guidance and respond to questions; this presentation was attended by over 200 individuals from 44 states and the District of Columbia (including state environmental and transportation agencies, regional organizations and Councils of Government, and local governments); 12 tribes; several state, local and tribal organizations, environmental, health, and transportation organizations, and industry representatives. We also spoke directly with several individual states and local areas who had questions about the program, as well as some of the states and areas participating in the Ozone Flex program.

The draft guidance was modified to reflect the input from these discussions, and this final guidance will be clarified via supplemental questions and answers which we will provide via the program website: www.epa.gov/advance.

30. EPA Contacts

Questions about Ozone Advance may be referred to Laura Bunte, Office of Air Quality Planning and Standards (OAQPS), (919) 541-0889 or advance@epa.gov, or to the appropriate EPA Regional Office. Questions about mobile sources may be directed to Rudy Kapichak, Office of Transportation and Air Quality (OTAQ), (734) 214-4574 or kapichak.rudolph@epa.gov.

EPA Regional Office contacts for Ozone Advance include:

Region 1	Anne Arnold	(617) 918-1047
Region 2	Matt Laurita	(212) 637-3895
Region 3	Ellen Schmitt	(215) 814-5787
Region 4	Kelly Sheckler	(404) 562-9222
	Jane Spann	(404) 562-9029
Region 5	Steve Rosenthal	(312) 886-6052
Region 6	Carrie Paige	(214) 665-6521
	Kenneth Boyce	(214) 665-7259
Region 7	Lachala Kemp	(913) 551-7214
	Amy Bhesania	(913) 551-7147
Region 8	Jody Ostendorf	(303) 312-7814
Region 9	John Kelly	(415) 947-4151
	Karina O'Connor	(775) 434-8176

Region 10 Claudia Vaupel (206) 553-6121

The EPA Regional Office contacts generally serve as the main EPA point of contact for participating areas within the Region and will work with participating states, tribes, and local governments directly, in coordination with OAQPS. In some Regions, OAQPS may serve as the primary EPA point of contact for participating areas and will engage with participants directly, in coordination with the EPA Regional Office.

Thank you for your interest in the Ozone Advance program!

Attachment A
Ozone Advance
Path Forward

The focus of Ozone Advance is on participating areas' implementation ofmeasures and programs that will achieve emission reductions of ozone precursors to help these areas remain in attainment of the ozone NAAQS and to increase the chances that they will be in attainment for any future revised NAAQS that may be promulgated. The program does not require extensive upfront analysis and planning, such as is required as part of the SIP process. However, participating areas may have an interest in developing a Path Forward that goes beyond the minimum, which is a list of measures and programs the area plans to implement and a schedule for the implementation of each measure and program. Paths Forward are not just meant to inform EPA, but also to inform area stakeholders and the public about ozone and what is being done locally to address it.

In order to more fully communicate with these audiences, Advance participants often include additional information such as a brief description of what ozone is and its health and environmental effects, what the Advance program is and why they are participating, the current status of the area's air quality issues including recent monitoring information and design value trends, any technical analyses undertaken by the area, such as modeling to understand the area's emission sources and appropriate controls, the key sources of NOx and VOC in the area per National Emissions Inventory information or other more refined local information, a summary of past and ongoing measures and programs in the area that have helped to reduce ozone, provisions for public and stakeholder involvement, etc. The Path Forward can serve as the area's blueprint for actions into the future, and can help focus stakeholder and public understanding of the amount of pollution reduction needed in order to ensure the plan will be effective, as well as the steps the area is taking to ensure continued protection of citizens' health.

There is no specific format that must be followed for a Path Forward, so participating areas can select a format that makes sense to them. Many examples of Paths Forward developed by Advance participants can be found on the program website, www.epa.gov/advance, and EPA can provide you with tips as you work to develop a Path Forward for your area.

EPA suggests that the following sections be included in a Path Forward, at a minimum:

- Introduction
- Description of the measures and programs to be implemented, responsible parties, how the measure will be implemented
- Implementation schedule for each measure and program
- Provisions for public and stakeholder involvement

A. Introduction

In the introductory section, information should be provided about ozone and its health and environmental effects, what the Advance program is and why the participant(s) have opted to join. The introduction should generally describe the area to be covered by the plan, including the rationale for choosing the geographic boundaries. At a minimum, the geographic area should include the urbanized area, where applicable.[10] A map showing the geographic boundaries would be helpful. It is important to include brief information about the participating groups/agencies, and the general objectives of the plan.

The number and location of ozone monitors, and the number and extent of ozone concentrations above the ozone NAAQS should be provided, along with observed trends in emissions and ozone concentrations. If any modeling has been conducted, it should be mentioned as well.

Information on the sources (i.e., point, area, non-road, and on-road) and the total amounts of NOx and VOC emissions should be summarized. To the extent known, indicate the local sources of these pollutants and the extent to which each type or specific source contributes to the total emissions in the area. Large sources in adjacent areas should be identified. EPA can supply you with local emissions information from the National Emissions Inventory.

B. Description of Measures to be Implemented and Responsible Parties

The specific control measures or programs the local government, state, tribe, and/or community organizations commit to undertake as a result of Ozone Advance should be described in detail. The description for each measure should indicate how, where, when, and by whom the measure will be implemented. At a minimum, the list of measures should be designed to keep ozone levels below the current ozone NAAQS. More stringent air quality targets can be agreed to by the interested parties. Reductions should be achieved as expeditiously as practicable to provide maximum benefits.

The measures and programs may be mandatory or voluntary, and may additionally include educational or awareness-building efforts. The plan should include details about the means of ensuring the implementation of any measures and programs selected by the area, such as regulations, agreed orders, and verification mechanisms. It should also discuss how the effectiveness of voluntary measures might be assessed. The effectiveness of these measures may vary depending on the extent of participation or other circumstances.

[10] An urban area generally consists of a large central place and adjacent densely settled census blocks that together have a total population of at least 2,500 for urban clusters, or at least 50,000 for urbanized areas. An urban area can be in a metropolitan or non-metropolitan area.

EPA encourages participants to include a diverse set of measures and programs that relate to the various sources of NOx and VOC in the area. These typically include measures and programs addressing mobile source emissions (e.g., reducing miles traveled, minimizing congestion, fleet management strategies, diesel reduction projects, alternative fuels), point and area source emissions (e.g., programs that trigger on high ozone days or throughout the ozone season), and energy-related programs (e.g., energy efficiency, green infrastructure). Most Advance participants additionally opt to include awareness-building or educational programs.

Any existing background explaining how the list of measures was selected, such as any technical analysis conducted, would be helpful. Areas should consider developing or refining emissions inventories, assessing whether VOC or NO_x emission controls are most needed, and conducting photochemical modeling. While this work is not required in order to participate in the program, it would be helpful; EPA and Regional Planning Organizations can provide assistance in the direction and scope of these efforts, such that available resources can be used most effectively. If existing modeling is unavailable for reference and new analyses are not conducted by the area, the action plan should explain what means were used to select the measures in the plan. These technical efforts provide a foundation for an area's plan, and can be used to identify and analyze the sources of emissions in the area. Such information will suggest which control strategies may be most effective in reducing emissions that lead to ozone formation, and could help the area most efficiently use its limited resources. Attachment B contains more detailed information about the emissions inventory, modeling, control measures and selection.

EPA encourages use of the latest planning assumptions and emissions models available to evaluate and accurately estimate the benefits that control measures provide. Examples of assumptions include estimates of current and future population, employment, activity, projections and growth factors, and vehicle age and fleet mix. For on-road and non-road mobile source emission estimations, the current emissions model is MOVES (Motor Vehicle Emissions Simulator) (www.epa.gov/otaq/models/moves/index.htm). The most current version should be used. Areas in California would use the latest Emission Factors (EMFAC) model.

The measures and programs in the plan should, as a group, achieve emission reductions beyond those already being achieved in the area, given that the program is aimed at taking action to keep ozone levels below the level of the NAAQS. However, participants are encouraged to highlight past and ongoing measures along with new, planned measures in order to fully represent the proactive work to maintain/improve air quality in the area. To the extent possible, the amount of NO_x and/or VOC emission reduction anticipated from each measure or combination of measures should be estimated. The plan should not include measures that are

required under state/tribal or Federal law, such as the measures included in approved maintenance plans.

The state, tribe, and/or local government should commit to adjusting the list of measures and programs as appropriate in order to speed up progress in achieving reductions, and to ensure continued attainment in light of any future revised ozone NAAQS.

C. Implementation Schedule

EPA recommends that an area commit to Ozone Advance for a five-year term, with an option to renew at the end of the term and each successive term. See sample timeline in #29 above. The Path Forward should provide a schedule for implementation of the indicated measures. Significant actions that are necessary or that may affect control measure implementation, such as required reviews/approvals, acquisition of equipment, etc., should be included in the schedule.

D. Provisions for Public/Stakeholder Involvement

Support for the proposed measures in Ozone Advance commitments is vital. Local officials can determine the best means to seek and respond to input from groups or individuals interested in or affected by the measures. We recommend that the commitments be developed by a local air quality committee that includes environmental and citizens groups, as well as representatives from local industry and government. Input on appropriate measures from environmental groups, citizens groups, industry representatives, the general public, states/tribes, and EPA should be given thoughtful consideration by the committee.

Attachment B
Ozone Advance
Emissions Inventory, Modeling, and Controls

Emissions inventory (EI) work and source apportionment, dispersion, or other modeling are not required as part of Ozone Advance. However, the use of an emissions inventory and technical support for the selection of control measures is encouraged, and EPA will provide technical advice to participating areas who seek it. The state should be included in these discussions to ensure technical consistency. Areas with well-developed emissions inventories and technical support are better positioned to target and select control measures that maximize emission reductions that will result in air quality improvements given local conditions and characteristics.

Emissions Inventory

One of the first steps in determining how to improve air quality in an area is to gather information on the sources and amounts of emissions. In many cases, existing state, multijurisdictional or regional planning organization (MPO/RPO), and Federal EIs may provide a guide in targeting sources of interest in a particular local area to enable appropriate control selections. Ozone Advance participants are not required to develop a baseline emissions inventory for NO_x and VOCs; however, they are encouraged to do so in order to identify the level of emissions that would represent continued attainment for the area and to monitor growth.

The extent of the geographic area inventoried will vary by community. The EPA recommends evaluating the Metropolitan Statistical Area/Consolidated Metropolitan Statistical Area (MSA/CMSA) (or the county or parish if there is no MSA) and enlarging the area if necessary. Local EIs can help an area identify, target, and obtain emission reductions that are feasible and that are most likely to lead to reduced ozone formation in the area. EPA's protocol for developing an EI and additional information on EIs are available at www.epa.gov/air-emissions-inventories. In particular, information regarding EPA's Emission Inventory Improvement Program (EIIP) can be found at www.epa.gov/air-emissions-inventories/emission-inventory-improvement-program-eiip. While some aspects of the EIIP website, such as mobile source information, are out of date, much of the information provided may be useful to participating states, tribes, and local governments that want basic information about how to further develop and refine their EIs. In addition, EPA's latest NAAQS inventory guidance is available at www.epa.gov/air-emissions-inventories/emissions-inventory-guidance-documents.

Emissions are generated by stationary sources (industrial or commercial facilities), mobile sources (on and off-road vehicles, aircraft, ships and locomotives), and area sources (gas

stations, dry cleaners, auto body paint shops, etc). Emissions of NO_x and VOC contribute to ozone formation and should be the focus of EI efforts.

Information should be gathered on the number and types of emission sources in the area and the types and amounts of pollutants emitted. It is important to summarize the extent and availability of information on NO_x and VOC emissions which contribute to ozone formation in the area. To the degree it is known, the extent to which each type of source or specific source contributes to the release of the total emissions in the area should be specified.

Expected emission reductions from planned efforts or controls should be identified and should be quantifiable, to the extent possible. Emission reductions from some measures may be difficult to quantify (e.g., voluntary measures due to unknown levels of participation), but it may be possible to specify a percentage, range, or time-adjusted sequence of anticipated emission reductions from each or a combination of these "hard to estimate" measures.

The following steps outline the process for emissions inventory development:

Step 1: Determine if inventory information currently exists
The state/tribe may have information on the sources and emissions in the area. EPA and MPOs/RPOs may have additional information. EPA compiles the NEI every three years. The most recent NEI includes 2011 emissions, and the 2014 NEI is expected to be released in the summer of 2016 with a final revision by the summer of 2017. States are required by the Air Emissions Reporting Requirements (AERR) rule to submit emissions inventory information every three years. Ozone Advance participants should identify information sources and compile the information relevant to their area.

Step 2: Determine the extent of available information
The extent of available EI information varies from area to area. The state/tribe or EPA can provide guidance on the types of EI information that has been collected for your area and which may be useful for your local efforts.

Step 3: Gather additional information as necessary
In addition to specific EI data from the state/tribe or EPA, the following information may be of use to local EI development:

Information about VOCs of particular concern in an area:

- National-Scale Air Toxics Assessment (NATA), www.epa.gov/national-air-toxics-assessment.

Stationary source data:

- VOC/NO_x sources/emissions not included in the state/tribal emissions inventory
- Development of the most current EI possible for a year with high ozone observed in the area

Mobile source data:

- Useful mobile source information that could improve estimates available from other sources such as the NEI
- Non-road vehicle, engine and equipment types, numbers, emissions, hours/frequency of operation
- On-road vehicle types, numbers, emissions, vehicle miles traveled (possible data sources include local Metropolitan Planning Organizations and the local Department of Transportation)
- For additional information on the use of MOVES for estimating on-road and non-road emissions please see: www.epa.gov/otaq/models/moves/index.htm.

Additional useful information regarding EIs is available electronically through www.epa.gov/chief/.

Modeling and Data Analysis

Photochemical air quality modeling that can predict the effectiveness of a proposed control strategy or a proposed control measure in reducing the local ozone concentration, and other modeling or data analyses are not required for participation in Ozone Advance. However, these types of analyses could be used as a tool in the program to help areas identify which emissions may be the most beneficial to reduce. Before beginning any modeling effort, an area should contact the state/tribe or EPA Regional Office for suggestions regarding whether sufficient relevant modeling information for the area already exists, and, if not, what types of analyses are appropriate. A review of any existing modeling could add credence to the selection of control measures and could conserve both time and money. If the area intends to perform modeling, it should follow EPA or state-approved modeling protocols; see the EPA modeling information at www.epa.gov/scram/.

Other considerations include:

A. Photochemical Grid Modeling

If used, photochemical grid modeling should be SIP-quality and developed according to current EPA ozone modeling guidance. This modeling can help answer questions such as:

- Is it more effective for Ozone Advance efforts to concentrate on reductions of VOCs, NO_x, or both?
- If a combination of both VOC and NO_x reductions appears to be called for, what percentage of each would be appropriate to maintain attainment?
- What amounts of reductions are necessary to make a difference in ozone concentrations?
- Which control measures will result in emission reductions that would be most effective at reducing ozone concentrations in the area?

Photochemical grid modeling may also be used to assess the effectiveness of a control strategy in helping to reduce ambient ozone levels. In such a demonstration, there may be a need for assessing some future year(s), and for developing future emissions inventories.

B. Air Quality Data Analysis

In some cases, it may be possible to address the questions posed in the previous section without the use of time and resource-intensive photochemical grid modeling via careful statistical analysis of monitored ambient ozone, ozone precursor, and meteorological data. This analysis is used to produce a meteorologically-adjusted ozone trend that reflects summertime average ozone levels under typical meteorological conditions. Data analysis efforts designed to answer the questions listed below can also be used to support and confirm any modeling results.

- Which meteorological conditions are most often associated with elevated ozone concentrations in the area?
- Does the meteorologically-adjusted trend confirm that summertime average ozone concentrations in the area are decreasing?
- Has there been a relationship in the recent past between local ozone precursor emissions reductions and the meteorologically-adjusted trends?

C. Data and Time Periods of the Assessment

If a participating state, tribal, or local government decides, in consultation with EPA, that analyses are needed in order to understand the area's air quality issues, decisions will need to be made regarding which data will be used, and the period(s) to be modeled. The following questions are among those that would need to be answered:

- How many and which sources should be modeled?
- What types of pollutants and amounts of emissions from each source should be evaluated?
- Are the emissions inventory and other necessary data (i.e., meteorological data) available?

- Should modeling be done for an extended period such as five years or for shorter periods, such as each year?

D. Use of an Appropriate Model

Different models are available to predict air quality impacts. Participating local governments should consult with the state/tribe and EPA regarding which models would be appropriate for the purpose intended as well as the area, pollutants and sources to be evaluated. As stated earlier, a review of existing modeling analyses, if they exist, could simplify the selection of control measures and conserve resources.

Pollution Reduction Measures and Programs

Once the sources and types and amount of emissions are generally known, a list of potential air quality improvement and/or emission pollution reduction options can be developed. These options should be different from actions required by state/tribal or Federal law prior to or during the agreement term. These options may include, for example, public awareness, notification, and participation in local programs; requiring the installation of control devices or implementation of procedures by stationary sources; or mobile source control options. Other options may include voluntarily adopting state/tribal or certain Federal measures like those designed and mandated for ozone nonattainment areas.[11] To the extent that it is possible, these measures could be implemented on a voluntary basis and adapted as necessary. Consideration of multi-pollutant benefits (such as maximizing reductions in both NO_x and PM) should be incorporated into any selection of measures and programs.

Emission reduction measures are specific emission reduction commitments from specific facilities or industrial sources, broader measures applicable to an entire area, measures which target a specific group of emission sources or category of emissions (e.g., sources with VOC emissions greater than 25 tons per year), or voluntary programs such as those that encourage behavior change in order to achieve reductions (e.g., transportation programs that reduce vehicle miles traveled). Public notification and education programs include activities to inform and educate the public of the impact of their daily activities and to encourage them to participate in efforts to improve local air quality and to take actions to protect their health when exposed to poor air quality.

New state/tribal or Federal requirements may impact the emissions in an area. In order to best ensure continued attainment of the ozone NAAQS, Ozone Advance participants may need to

[11] Some federal measures are not available for state or local adoption because they are preempted legally. Vehicle emission standards and fuel standards are examples of this. Please consult your EPA Regional Office early in your process for considering measures.

consider going beyond Federal and state/tribal requirements that are already in place or that are anticipated in the near term. Consequently, in order to effectively evaluate potential control measures to adopt, local governments should become informed of requirements that already apply or are scheduled to apply within the area. Even where Federal, state, and tribal controls are generally expected to be sufficient to keep an area in attainment, local measures may provide an extra buffer against future violations, and will help to ensure continued public health benefits.

A variety of sources provide information about air quality improvement options that areas may want to explore. These include, for example, the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate (RACT/BACT/LAER) Clearinghouse (cfpub.epa.gov/RBLC/), the National Clean Diesel Campaign and Diesel Emissions Reduction program (DERA) grants (www.epa.gov/cleandiesel), and the State and Local Transportation Resources website, www.epa.gov/otaq/stateresources/index.htm. EPA will be available to provide assistance in identifying options that may best suit an area's unique needs and priorities.

Also consider contacting other states, tribes, and/or local governments, particularly those with similar sources and air quality issues, for information on measures they have considered or implemented. A list of some general categories of control measures follows, but Ozone Advance participants are not limited to these categories for sources of controls. Additional information on emission control options for specific sources can be obtained from EPA. Also, see Attachment C for a list of guidance documents that apply to a wide variety of control measures for stationary, area, and mobile sources.

Control Measure Selection

Emissions, modeling, source, and control information can be analyzed to select appropriate control measures that will help achieve emission reductions and prevent ozone levels that may exceed the level of the NAAQS. Specific Ozone Advance Paths Forward can tailor the use, combination, and timing of specific measures to meet local needs. Aside from control measures/programs identified in the plans, the plans may contain public education and awareness programs. Factors which may be considered in selecting control measures include, but are not limited to:

A. Determination of amount/type of emission reductions

The type and amounts of emission reductions impacts the selection of controls. An area with air quality affected predominantly by mobile sources and needing NO_x emission reductions would need different control measures than an area with air quality affected predominantly by

large stationary sources of VOCs. Emissions inventory and modeling data may be beneficial in making these determinations. Considerations include:

- Is ozone formation in the area driven by NO_x or VOC emissions or a combination of the two?
- What are the primary types of NO_x and VOC emissions sources in the area? For example, are mobile or stationary sources emitting most of the NO_x or VOC in the area?
- Are there a few very large emitters of NO_x or VOC, many smaller ones, or a combination?
- Are there additional air quality improvements, such as toxic emissions reductions, that result from implementation of the controls under consideration for this program?
- Are there possible benefits to environmental justice communities?

B. Analysis of available control measures

Even if the types and amounts of emission reductions that would provide the greatest benefits are known, the availability and ease of implementation of emission control options may impact selection of a particular measure. Considerations include:

- What available control technologies/measures would be feasible to implement?
- What is the effectiveness of these control technologies/measures in achieving emission reductions?
- What are the timeframes necessary to implement the measure and see results?
- What is the cost (dollars/resources) necessary to implement the measure?
- What are the challenges to "selling" the measure to specific companies, decision makers or citizens?

It is worth noting that, although local ordinances imposing mandatory control measures may or may not satisfy the requirements associated with eventual SIP "credit," these measures are certainly acceptable in terms of actions that may be taken as part of a participant's proactive work under Ozone Advance.

C. Selecting the proposed control measures

The state/tribe and EPA can assist in evaluating data and in reviewing the modeling for control options. Cooperative discussions with stakeholders can help determine the most appropriate control measures. Other states/tribes or local governments with similar sources and air quality issues could be contacted for additional ideas or measures to consider.

New Mexico Environment Department

Ozone Attainment Initiative

Air Quality Bureau, Control Strategies

September 26, 2019

New Mexico Ozone Attainment Initiative Development

Our mission is to protect the inhabitants and natural beauty of New Mexico by preventing the deterioration of air quality.

The NMED will use the following during the development of the Ozone Attainment Initiative (OAI):

- Science: We will use the best available science to inform our decision-making.
- Innovation: We will employ creative engineering and technological solutions.
- Collaboration: We will engage with communities and interested stakeholders in our OAI development strategy.
- Compliance: We will ensure compliance with National Ambient Air Quality Standards and state regulations.

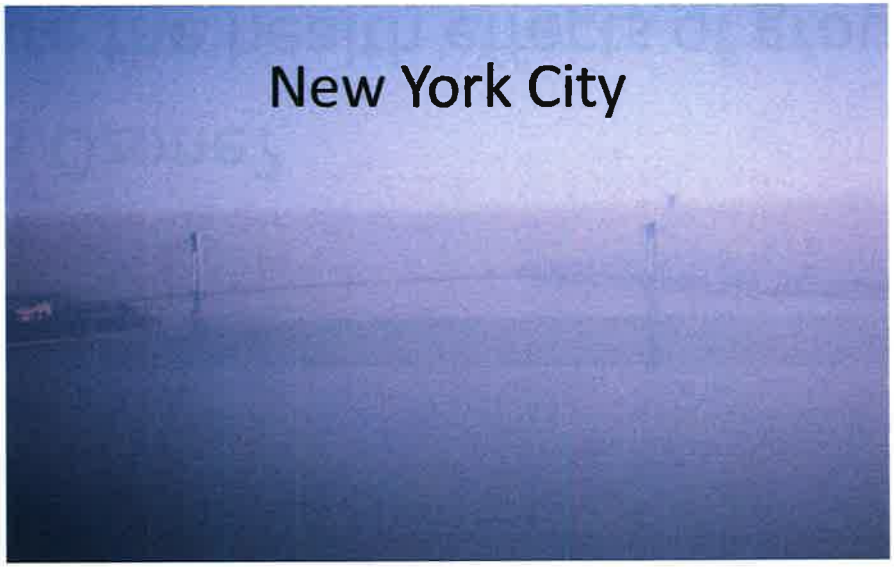
Outline

- What is Ozone?
- What are the health effects of ground level ozone?
- What is the Ozone Attainment Initiative?
- Why do we need the OAI?
- How will NMED implement the OAI?
- Where are the focus areas?
- What is the projected timeline?
- How can stakeholders get involved?

Smog


Denver Colorado

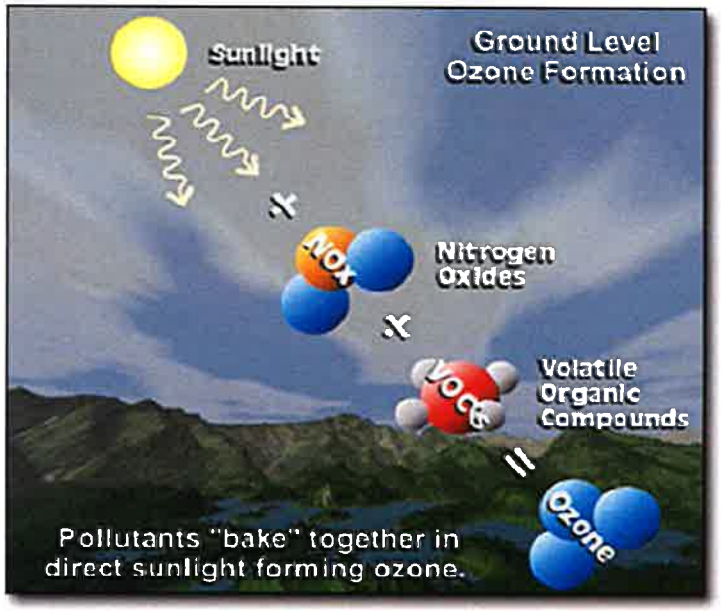

A layer of smog hovers over Los Angeles

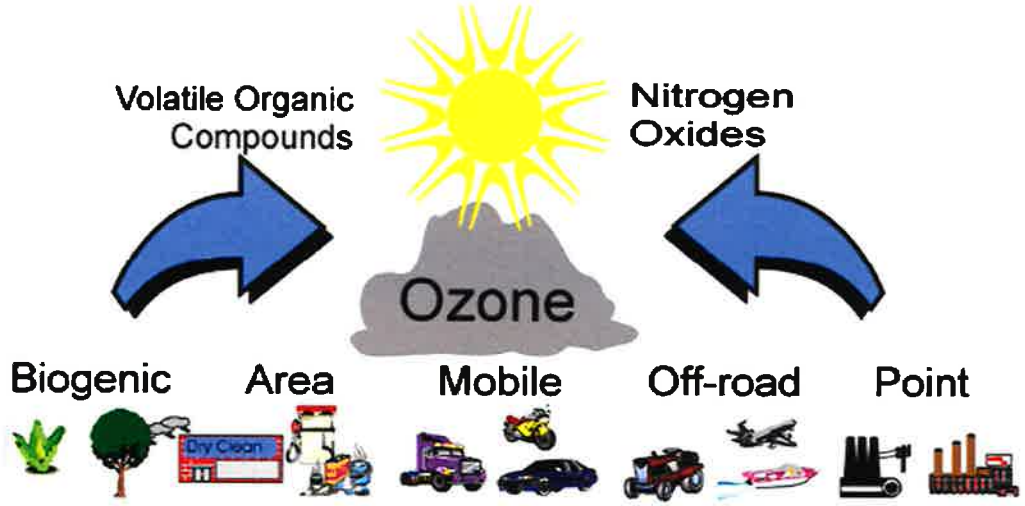

New York City

Ground-level Ozone Formation

The main pollutants that form ozone are oxides of nitrogen (NOx) and volatile organic compounds (VOC).

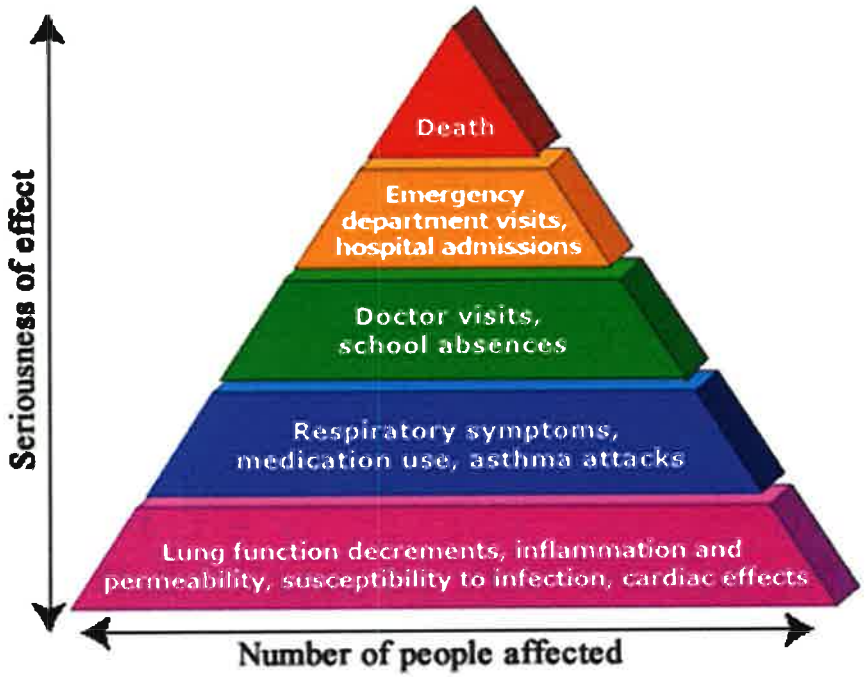
Ground level ozone, is not emitted directly into the air, but is created by chemical reactions between the "precursor" pollutants of nitrogen oxides (NOx) and volatile organic compounds (VOC) in the presence of sunlight.





Ozone Pollution Health Effects

- Effects seen across a wide range of health outcomes
- Sensitive groups include:
  - Asthmatic children and other people with lung disease
  - All children and older adults, especially people active outdoors
  - Outdoor workers



https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-patients-asthma-and-other-chronic

NAAQS and Nonattainment

National Ambient Air Quality Standards (NAAQS)

- Standards for criteria pollutants
- Established by the U.S. Environmental Protection Agency (EPA)
- Nonattainment Area= Can be an area that violates/exceeds one of the NAAQS

Pollutant	Type	Standard	Averaging	Form
Ozone (O_3)	Primary and Secondary	0.070 ppm (70 ppb)	8-hour	Annual 4th high daily maximum 8-hr. avg., averaged over 3 yrs.*

*EPA's calculation methodology can be found at:
https://www.epa.gov/air-trends/air-quality-design-values

What is the Ozone Attainment Initiative (OAI)?

Monitoring data show several areas in the State approaching the level of the National Ambient Air Quality Standard (NAAQS) for Ozone

The OAI aims to:

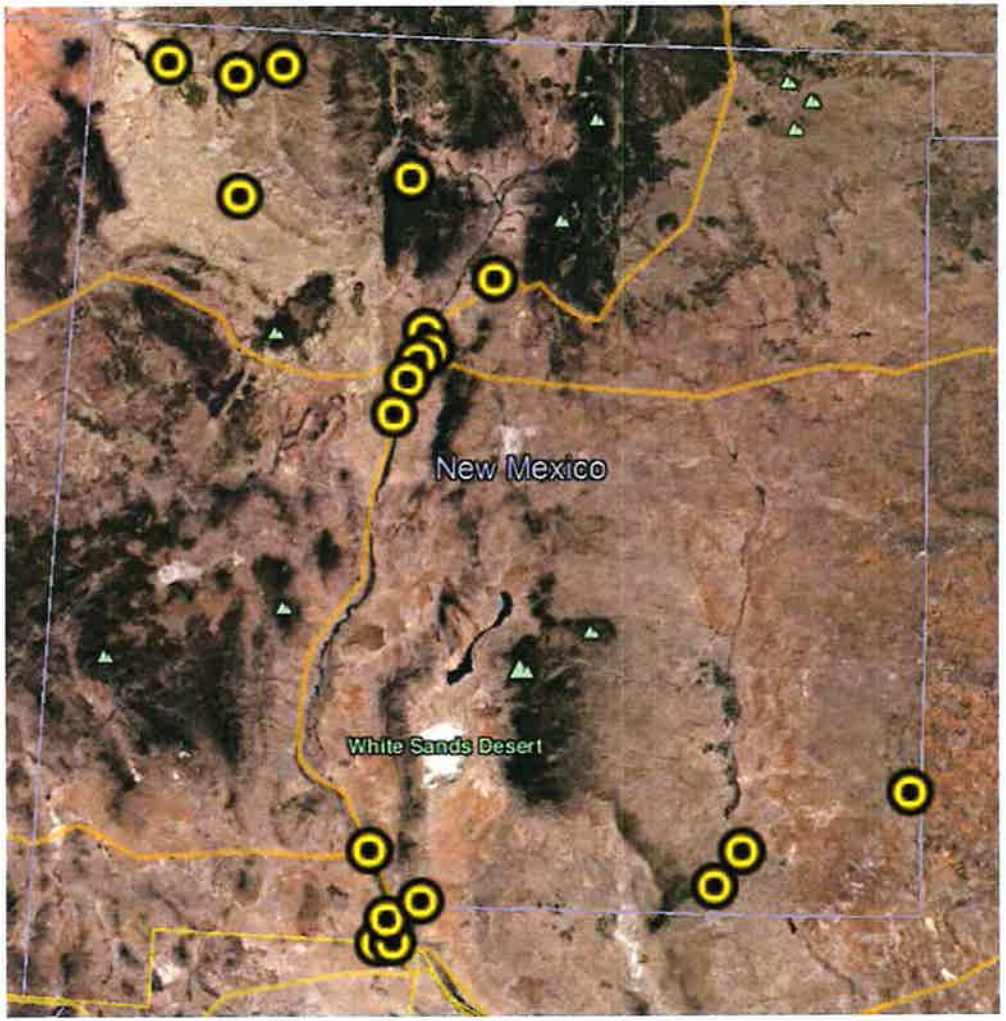
- Protect the attainment/unclassifiable status of all areas in the state
- Ensure the health and welfare of the residents of the state for future generations

Why do we need the OAI?

74-2-5.3 NMSA 1978

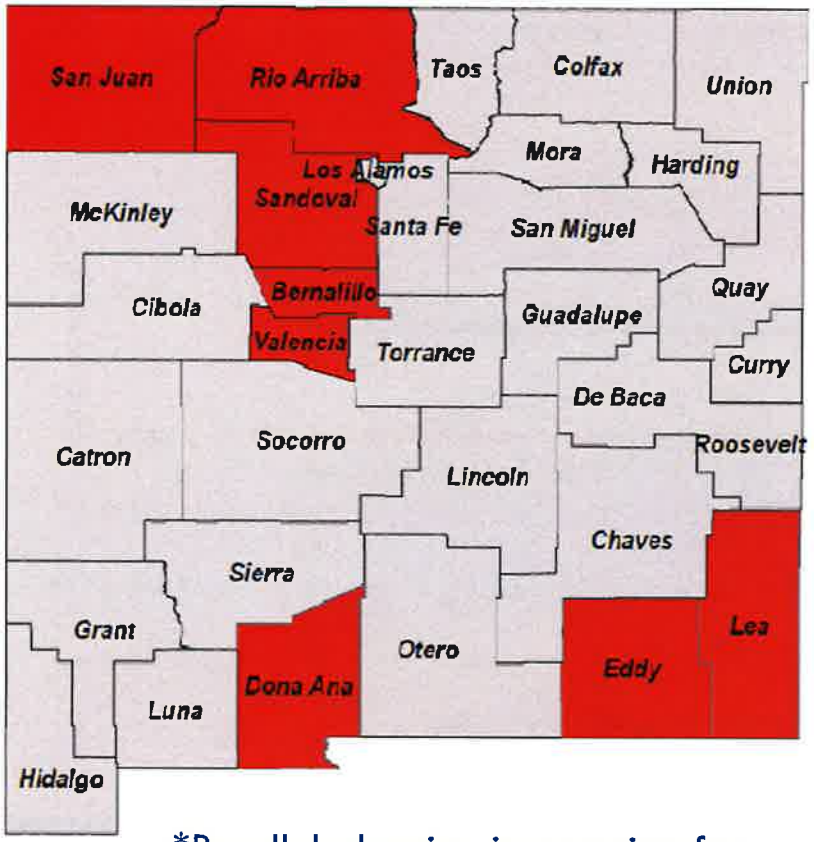
- If the EIB finds that sources cause or contribute to ozone concentrations in excess of ninety-five percent of a national ambient air quality standard for ozone, then
- NMED shall adopt a plan to control oxides of nitrogen and volatile organic compounds.

Affected Monitoring Stations*



- Includes CABQ/EHD O_3 monitoring sites. Each monitoring station includes several air monitors that each monitor a different pollutant.

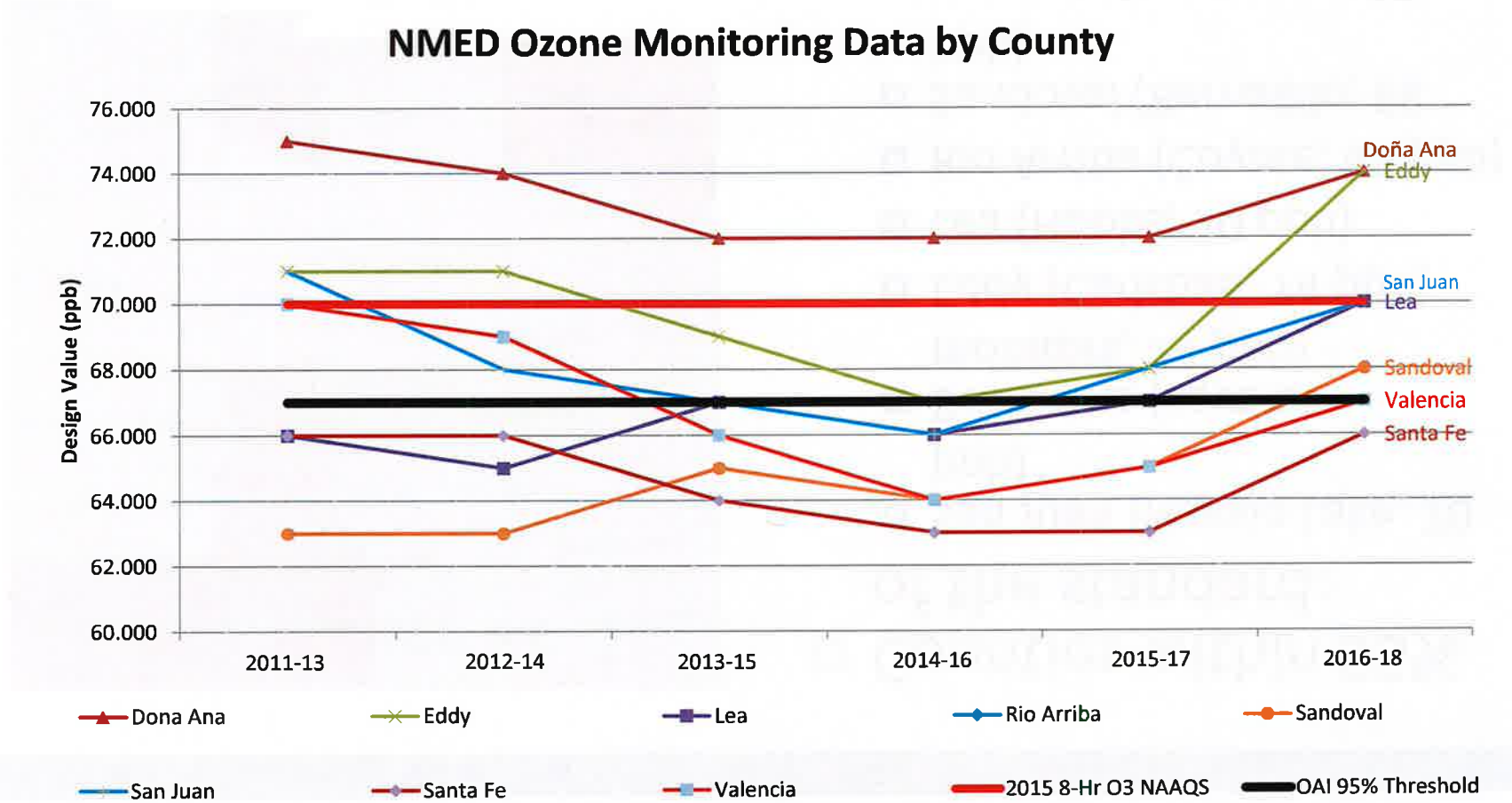
Focus Areas



*Parallel planning is occurring for Bernalillo County through the Albuquerque/Bernalillo County Department of Environmental Health

- Counties within 95% of the standard:
  - San Juan (Navajo Lake, 70 ppb)
  - Doña Ana (several monitors, 74 ppb)
  - Eddy (Carlsbad, 74 ppb)
  - Lea (Hobbs, 70 ppb)
  - Rio Arriba (Coyote, 67 ppb)
  - Sandoval (Bernalillo, 68 ppb)
  - Valencia (Los Lunas, 67 ppb)

NMED Ozone Monitoring Data by County

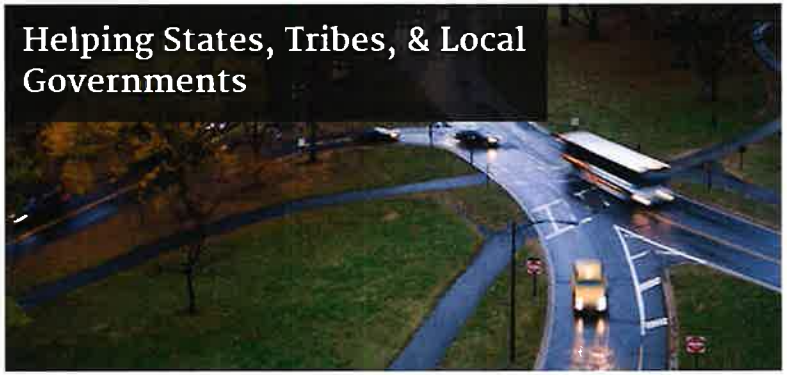


95% of the 70 ppb standard ≥ 67 ppb

How Will NMED Implement the OAI?

- Data Gathering
  - Emissions Inventories, Modeling and Continued Monitoring
    - O_3 and NOx Concentrations
    - Source sector contributions
    - Ozone formation and its transport
- Mandatory and/or Voluntary Measures
  - Normal NMED rulemaking process
  - EPA's Ozone Advance Program
- Robust stakeholder involvement
  - Stay informed through the OAI Listserv!

Ozone Advance



Currently, 38 areas are actively participating in Advance. These areas are located in 21 states and 9 of the 10 EPA Regions. They include 21 Ozone Advance areas, 7 PM Advance areas, and 10 areas that are participating in both Ozone and PM Advance.

- Is a collaborative effort by EPA, states, tribes and local governments to encourage emission reductions to help them continue to meet the NAAQS
- Take near-term steps to improve local air quality and ensure continued health protection
- Flexibility, participant determine their own goals and the measures
- Actions taken could better position an area to handle nonattainment requirements.

https://www.epa.gov/advance

Why are Early Efforts Important

- Local steps to reduce air pollution voluntarily, before becomes a requirement
- Improving air quality to ensure continued health protection
- Proactive efforts could better position areas to stay in attainment.
- Areas working voluntarily to reduce air pollution have more flexibility to choose measures that make sense to them
  - Once a nonattainment designation has occurred, less flexibility is available

Projected Timeline*

- **2018**
  - **Spring**
    - Kick off OAI planning meeting; and
    - Development of outreach and educational materials.
- **2019**
  - **Summer**
    - Initial public outreach including education and initial input request.
  - **Fall/Winter**
    - Conduct modeling;
    - Research and review mandatory or voluntary control measures; and
    - Additional public outreach.
- **2020**
  - **Winter/Spring**
    - Gather input; and
    - More public comment opportunities.
  - **Summer**
    - Analyze input;
    - Develop rules; and
    - Other measures for inclusion in programs.
  - **Fall/Winter**
    - OAI Plan drafted and released with formal comment period; and
    - EIB hearing to adopt proposed plan/rules.

*Note that NMED is in the initial stages of planning, which only includes the educational component and planning for public outreach. No rules/programs have yet been discussed.

Path Forward and Next Steps

Path Forward

- Modeling and Data Analyses
  - Identify source categories causing elevated ozone
  - Predict effectiveness of a proposed strategy or control measure
- Control and pollution reduction measures
  - Once sources and types are identified, a list of potential air quality improvements and/or emission reduction options can be developed

How can stakeholders get involved?

- NMED is committed to a robust, transparent process where feedback and suggestions are encouraged.
- Provide input!
  - Attend public meetings
  - Share comments and suggestions
- Stay current
  - OAI Listserv: public.govdelivery.com/accounts/NMED/subscriber/new
  - OAI webpage: www.env.nm.gov/air-quality/o3-initiative/
  - Air Monitoring Network: https://www.env.nm.gov/air-quality/air-monitoring-network-2/

Questions or comments?

Thank you. We look forward to working with our stakeholders.

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