

INTERSTATE TRANSPORT STATE IMPLEMENTATION PLAN CERTIFICATION

**TO SATISFY THE REQUIREMENTS OF
THE CLEAN AIR ACT § 110(a)(2)(D)(i)(I)
FOR THE 2008 OZONE NAAQS
FOR NEW MEXICO**

New Mexico Environment Department
Air Quality Bureau
Control Strategies Section

Executive Summary

New Mexico submitted its Infrastructure State Implementation Plan Certification (“i-SIP”) for the 2008 ozone National Ambient Air Quality Standard (“NAAQS”) to the Environmental Protection Agency (“EPA”) on 8/27/13, which was approved on 7/24/15¹. Albuquerque – Bernalillo County submitted its i-SIP on 8/16/10 which was approved on 10/19/12.²

Based on EPA guidance from the November 19, 2012 Gina McCarthy Memo “*Next Steps for Pending Redesignation Requests and State Implementation Plan Actions Affected by the Recent Court Decision Vacating the 2011 Cross-State Air Pollution Rule*”, along with discussions with EPA Region VI, New Mexico did not address the 110(a)(2)(D)(i)(I) requirements commonly referred to as the “Good Neighbor Provision”³, in their i-SIPs for the 2008 ozone NAAQS.

On 6/30/15 the EPA signed a final rule; *Findings of Failure to Submit a Section 110 SIP for Interstate Transport for the 2008 NAAQS for Ozone*, effective 8/12/15, which identified 24 states that had failed to submit i-SIPs to address significant contribution to nonattainment, or interference with maintenance, of the 2008 8-hour ozone NAAQS in other states⁴. These findings of failure to submit started a 24-month clock for the EPA to promulgate a FIP to address the interstate transport SIP requirements unless, prior to the EPA promulgating a FIP, the state submits, and the EPA approves, a SIP that meets these requirements. The rule required these 24 states, including New Mexico and Albuquerque-Bernalillo County, to submit a Good Neighbor SIP to EPA for approval by 8/12/2017⁵. This submittal satisfies that requirement.

¹ 80 Fed. Reg. 36246 (June 24, 2015)

² 77 Fed. Reg. 58,032 (Sep. 19, 2012).

³ Stephen D. Page, Director of OAQPS, EPA, Information on the Interstate Transport State Implementation Plan Submissions for the 2008 NAAQS under CAA Section 110(a)(2)(D)(i)(I), January 22, 2015 (“EPA Jan. 2015 Good Neighbor memo”), available at <https://www.epa.gov/ozone-pollution/information-interstate-transport-good-neighbor-provision-2008-ozone-national-ambient> (last accessed February 15, 2018).

⁴ 80 Fed. Reg. 39961

⁵ 80 Fed. Reg. 39961, 39963 (July 13, 2015) (to be codified at 40 CFR Part 52)

I. Introduction

EPA framework for Good Neighbor compliance

EPA has developed what the agency characterizes as a four-step framework under which EPA and states cooperatively address obligations under the CAA's Good Neighbor provisions in regard to ozone. EPA formulated this framework based on a number of rulemakings and related litigation, beginning with the agency's 1997 ozone NAAQS. The result is an EPA interpretation of rulemaking requirements that, in EPA's view, govern state preparation and submittal of Good Neighbor SIPs to EPA.⁶ The four steps in EPA's Good Neighbor rulemaking process are as follows:⁷ 1. Identify downwind air quality problems; 2. Identify upwind states that contribute to downwind air quality problems; 3. Identify emissions reductions needed to prevent downwind problems; and 4. Adopt legally enforceable emission reductions.

Overview of EPA Good Neighbor modeling for ozone

From 2015 to 2018, EPA released six sets of modeling data assessing whether or not a state's emissions of ozone precursors might violate the Good Neighbor provision for the 2008 ozone NAAQS in a downwind state in a particular future year. The years being modeled were 2017, 2018, and 2023, all of which were in the future at the time EPA released the modeling for each.

In brief, EPA's approach was to perform photochemical modeling of long-distance ozone transport throughout the United States (and adjoining portions of the Pacific and Atlantic oceans, Mexico and Canada). The modeling used 2011 emissions and meteorology data, along with design value monitor data from three different periods (2009-11, 2010-12, and 2011-13), to generate three sets of simulated monitor data for each of the five model runs. For the future year being modeled, these three data sets projected a range of estimated measurements of ambient ozone levels at more than 1,000 monitor sites across the United States. The modeling to generate this data used certain assumptions about future emissions increases and control methods to help obtain projected design values for the future year being examined. EPA also performed a separate calculation to obtain an "average contribution metric" in each modeled year, estimating how much of the projected ozone levels at each monitor site resulted from NO_x and VOC emissions in specific upwind states, as opposed to sources within the state.

EPA adjusted its data inputs and refined its modeling techniques over the course of the 2015 to 2018 model runs, based on input from stakeholders, but the overall approach to modeling and

⁶ Stephen D. Page, Director of OAQPS, EPA, Supplemental Information on the Interstate Transport SIP Submissions for the 2008 NAAQS under CAA Section 110(a)(2)(D)(i)(I), October 27, 2017 ("EPA Oct. 2017 Memo), pp. 2-3 (describing EPA's four step framework for ozone transport obligations). Note that EPA also applies its four-step process to Good Neighbor provisions for PM NAAQS. *Id.*, p. 3.

⁷ EPA Oct. 2017 Memo and EPA Jan. 2015 Good Neighbor memo, *passim*. These two sources describe EPA's four step rulemaking approach to Good Neighbor SIPs for ozone NAAQS. The discussion of the four-step process in the main text of this SIP is based on these two sources.

assessing a state's future compliance with Good Neighbor obligations remained as described above.

Demonstration that no new control measures are necessary for New Mexico

Based on its modeling, EPA found that a state might contribute to future nonattainment of the ozone NAAQS in a downwind state, or interfere with maintenance of the ozone NAAQS in a downwind state, if conditions 1 and 2, below, were both met.

1. Any ambient air quality monitor site in a downwind state showed either of the following to be true.
 - a. The modeling for a future year (2017, 2018, or 2023) showed that the projected **average** design value (calculated from three projected design values generated by the model) at a monitor site for the May through September ozone formation season was 76 parts per billion or greater, indicating that the monitor site is projected to be in nonattainment for the 2008 ozone NAAQS. EPA calls such a site a "**nonattainment receptor**."
 - b. The modeling for 2017, 2018, or 2023 showed a single, projected **maximum** design value (identified from among three design values generated by the model) at a monitor site for the May through September ozone formation season that was 76 parts per billion or greater, indicating that the monitor site would have difficulty maintaining attainment for the 2008 ozone NAAQS. EPA calls such a site a "**maintenance receptor**."
2. In addition to either of the conditions in point 1 being true, the modeling for 2017, 2018, or 2023 must also show that the upwind state's average contribution metric for ambient ozone levels at a given downwind nonattainment or maintenance receptor was at least 0.75 parts per billion (i.e., a significance level of one percent of the 2008 ozone NAAQS of 75 parts per billion). EPA adopted this one percent threshold from the Cross-State Air Pollution Rule (CSAPR) developed earlier for states east of the Mississippi River, to limit ozone transport due to emissions from electric generating units (EGUs). However, EPA adopted the CSAPR approach with the caveat that a uniform approach to Good Neighbor obligations in the East was appropriate because electric generating units were the principle contributor to interstate ozone transport. EPA has stated that assessing Good Neighbor obligations in the Western states will be done on a case-by-case basis. In this SIP certification, NMED and EHD have applied the one percent threshold in their analysis.

If modeling shows that the above conditions are met, EPA concludes that emissions from the upwind state may contribute to future attainment or maintenance difficulties at the downwind receptor. EPA has stated that this conclusion does not definitively show a violation of the Good Neighbor Provision. Rather, it shows that further evaluation is necessary to determine whether there is a violation.

Photochemical modeling performed by EPA showed that New Mexico has a significant impact on two monitors in Jefferson County, Colorado: one nonattainment monitor (Rocky Flats – North) and one maintenance monitor (NREL). The results of EPA’s modeling are shown in Table 1.

TABLE 1: EPA modeled New Mexico contributions to interstate ozone transport (red text indicates modeled New Mexico violation of Good Neighbor provision)

DESCRIPTION MODELING	JEFFERSON COUNTY, CO.	
	Rocky Flats - North Monitor site # 80590006	NREL Monitor site # 80590011
January 2015		
Average design value, 2018	73.0 ppb	72.1 ppb
Maximum design value, 2018	75.5 ppb	75.1 ppb
New Mexico contribution, 2018	0.95 ppb	0.47 ppb
August 2015		
Average design value, 2017	76.3 ppb	75.8 ppb
Maximum design value, 2017	78.8 ppb	78.9 ppb
New Mexico contribution, 2017	1.05 ppb	0.54 ppb
September 2016		
Average design value, 2017	75.7 ppb	74.9 ppb
Maximum design value, 2017	78.2 ppb	78.0 ppb
New Mexico contribution, 2017	0.63 ppb	0.77 ppb
December 2016		
Average design value, 2023	70.5 ppb	69.7 ppb
Maximum design value, 2023	72.9 ppb	72.7 ppb
New Mexico contribution, 2023	0.35 ppb	0.41 ppb
October 2017		
Average design value, 2023	71.3 ppb	70.9 ppb
Maximum design value, 2023	73.7 ppb	73.9 ppb
New Mexico contribution 2023	Not available	Not available
March 2018		
Average design value, 2023	71.3 ppb	70.9 ppb
Maximum design value, 2023	73.7 ppb	73.9 ppb
New Mexico contribution 2023	0.70 ppb	0.38 ppb

Based on their analysis of the modeling data, EPA, NMED, and EHD agreed on a “weight of evidence” approach to preparing the Good Neighbor SIP submittals. A description of the approach and the conclusion reached by applying it is described below. The conclusion is that New Mexico and Albuquerque – Bernalillo County do not need to implement additional control measures, beyond those already in existence or scheduled to be implemented, to meet obligations under the Good Neighbor Provision. Any additional control measures implemented by New Mexico would result in overcontrol.

1. **Insignificance of modeled New Mexico contribution by 2023⁸.** EPA’s own modeling data suggests that New Mexico’s contribution to attainment difficulties at two Jefferson County monitors will decline substantially over time, becoming insignificant, as defined by EPA, by 2023. At all of the remaining monitor sites throughout the United States, New Mexico’s contribution to attainment difficulties will be insignificant through 2023.

EPA’s initial round of modeling for future year 2017, released in August of 2015, showed a potential New Mexico contribution at the Rocky Flats - North monitor site # 80590006 of 1.05 ppb, exceeding the 0.75 ppb EPA threshold of Good Neighbor concern by 0.3 ppb at a site that EPA’s methodology deemed a “**nonattainment receptor**.” Because New Mexico’s monitored contribution was above EPA’s 1% threshold for a potentially significant contribution, EPA’s Good Neighbor framework requires additional evaluation. This additional evaluation was furnished by further runs of EPA modeling for (then) future years 2017, 2018, and 2023 which showed no exceedance of the contribution threshold at the same monitor. These additional model runs used updated data and approaches, as described in EPA’s technical support documentation.

For the NREL monitor site #80590011, one model run for future year 2017 showed a very slight exceedance of EPA’s 1% contribution threshold, by 0.02 ppb. EPA’s methodology deemed this site a 2017 “**maintenance**” receptor. In this modeling, EPA projected that New Mexico would contribute more than 1% of the NAAQS to ambient ozone levels at this monitor. However, additional EPA modeling, based on updated methodology, showed that the very slight modeled NAAQS exceedance for 2017 was no longer present by 2023. EPA’s modeling incorporated expected emission reductions across the United States due to federal and state regulations scheduled to be implemented through 2023, such as reductions due to mobile source standards. EPA’s data provides evidence that any slight New Mexico exceedance of the 1% significant contribution threshold will decline below that threshold by 2023.

Thus, for both of the monitor sites discussed above, the most recent EPA modeling projections show both sites to be in attainment for the 2008 ozone NAAQS by 2023. New Mexico’s modeled emissions will not contribute more than 1% of the NAAQS at either site in 2023. Therefore, EPA’s modeling indicates that New Mexico and Albuquerque – Bernalillo County meet their obligations under the Good Neighbor provision of the Clean Air Act. Other evidence discussed later in this SIP certification will further reinforce this conclusion.

2. **“On the books” control measures scheduled to be implemented through 2023 that were incorporated into EPA modeling.** Significant, legally enforceable NO_x emission reduction measures will be implemented in New Mexico through 2023. Implementation of these measures, along with modeling data showing insignificant New Mexico downwind

⁸ EPA believes that 2023 is a reasonable year to assess downwind air quality to evaluate any remaining requirements under the good neighbor provision for the 2008 ozone NAAQS. A detailed rationale is found in Stephen D. Page, Director of OAQPS, EPA, *Supplemental Information on the Interstate Transport SIP Submissions for the 2008 NAAQS under CAA Section 110(a)(2)(D)(i)(I)*, October 27, 2017 (“EPA Oct. 2017 Memo),

ozone contributions, further suggests that no new emission control measures are needed in New Mexico to address Good Neighbor obligations under the 2008 ozone standard. The control measures that will be implemented through 2023 are as follows.

- a. Federal Tier III mobile source standards for 2017 to 2025. During these model years for newly produced cars, the federal government will phase in emission control requirements that will reduce emissions of NO_x. These will result in emission reductions as the vehicle fleet in New Mexico “turns over,” i.e., the introduction of newer, cleaner vehicles over time that will replace older models complying with less stringent standards.
- b. San Juan Generating Station (“SJGS”) Unit Shutdowns. Public Service Co. of New Mexico (PNM) completed the shutdown of two of the four units (Units 2 and 3) of its SJGS near Farmington, NM in December 2017 as part of the Regional Haze Best Available Retrofit Technology (“BART”) SIP⁹. This eliminated the combined Maximum Allowable Emission Limit of 12,408 tons per year (tpy) NO_x from Units 2 and 3.¹⁰ Actual 2017 emissions from Unit 2 were 3,208 tpy, and for Unit 3 were 5,378 tpy, which will be avoided in 2018. This agreement also required installation of selective non-catalytic reduction (“SNCR”) on the remaining two units, with an emission rate of no greater than 0.23 lb/mmBtu, which lowers the facility’s potential to emit, and will decrease potential NO_x emissions from Units 1 and 4 by 23%.¹¹ New Mexico estimates that implementation of the BART controls at SJGS will result in NO_x reductions of approximately 13,000 tons per year (tpy) (from 21,000 tpy to 8,011 tpy).¹²
- c. Incorporation by Reference (“IBR”) of NSPS, NESHAPs and MACTs.

New Mexico has incorporated NSPS, NESHAPs and MACTs promulgated by EPA, including those promulgated since 2008, into its *New Source Performance Standards*, 20.2.77 NMAC, *Emission Standards for Hazardous Air Pollutants*, 20.2.78 NMAC, and *Maximum Achievable Control Technology Standards for Source Categories of Hazardous Air Pollutants*, 20.2.82 NMAC respectively¹³. Aspects of many of these rules control the emissions of ozone and its precursors. For example, 40 CFR 60, Subpart OOOO, *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015*, and OOOOa, *Standards of Performance for*

⁹ Approval and Promulgation of Implementation Plans; New Mexico; Regional Haze and Interstate Transport Affecting Visibility State Implementation Plan Revisions, Final Rule [79 FR 60985, 10/9/14]

¹⁰ Page A14 of A61, Title V Permit # P062R3

¹¹ Regional Haze and the SJGS. Pat Vincent-Collawn and Maureen Gannon. EM Magazine. http://digitaladmin.bnmedia.com/publication/?i=207791&article_id=1704096&view=articleBrowser&ver=html5#{%22issue_id%22:207791,%22view%22:%22articleBrowser%22,%22article_id%22:%221704096%22}

¹² Approval and Promulgation of Implementation Plans; New Mexico; Regional Haze Five-Year Progress Report State Implementation Plan, Proposed Rule [80 FR 67684-5, 11/3/15]

¹³ 83 Fed. Reg. 15964 (Promulgated 4/13/18, and effective 6/12/18).

Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015. New Mexico will continue to update its IBR through 2023 and beyond. Albuquerque – Bernalillo County follows a similar protocol.

3. **Attainment demonstration for Denver area.** On May 31, 2017, the State of Colorado submitted to EPA a proposed SIP revision for the Denver Metro/North Front Range (“DMNFR”) Moderate nonattainment area under the 2008 ozone NAAQS. The submittal included an attainment demonstration, base and future year emission inventories, a reasonable further progress (“RFP”) demonstration, a reasonably available control measures (“RACM”) analysis, a motor vehicle inspection and maintenance (“I/M”) program in Colorado Regulation Number 11, a nonattainment new source review (“NNSR”) program, a contingency measures plan, 2017 motor vehicle emissions budgets (“MVEBs”) for transportation conformity, and revisions to Colorado Regulation Number 7 – *Control of Ozone via Ozone Precursors and Control of Hydrocarbons via Oil and Gas Emissions (Emissions of Volatile Organic Compounds and Nitrogen Oxides)*.¹⁴

Taken as a whole, this evidence indicates that EPA’s modeled nonattainment and maintenance difficulties for two Jefferson County monitors in the (then) future year 2017 are not consistent with actual monitored concentrations. Rather, as discussed below, the Colorado evidence shows that DMNFR monitors are on course to return to attainment status.

- a. Colorado’s proposed SIP revision, adopted by the state in November 2016, implements control measures designed to bring the Denver area into attainment for the standard by July 20, 2018. As part of this proposed SIP revision, the CAA required Colorado to submit an attainment demonstration, laying out the quantitative evidence showing that the control measures would, in fact, succeed in bringing the area back into attainment. According to EPA guidance, this evidence must be sufficient to support a “conclusive determination regarding the future attainment status of the area[.]”¹⁵
- b. Colorado’s attainment demonstration relied in part on photochemical grid modeling, undertaken with support from the Western States Air Resources Council (“WESTAR”) and its technical analysis unit, the Western Regional Air Partnership (“WRAP”). The modeling simulated emissions of ozone precursors, formation and transport of ozone as affected by meteorological conditions, and changes in projected ambient ozone concentrations in an area encompassing most of the United States west of the Mississippi River, as well as portions of northern Mexico and

¹⁴ Promulgation of SIP Revisions; Colorado; Attainment Demonstration for the 2008 8-Hour Ozone Standard for the DMNFR Nonattainment Area, and Approval of Related Revisions. 83 FR 14807, 4/6/18

¹⁵ Colorado Department of Public Health & Environment, SIP for the 2008 8-Hour Ozone NAAQS, Approved by Colorado Air Quality Control Commission November 17, 2016, p. 5-1 (“Denver Attainment SIP 2016”). This SIP submittal, and related TSD are available at http://raqc.org/our_programs/state_implementation_plans/ (last accessed March 7, 2018).

southwestern Canada. Colorado supplemented its modeling with extensive analysis of trends in real world emission controls, emission inventories, and monitoring data. Based on this body of evidence, the State concluded that the Denver area, including monitor sites in Jefferson County, would be in attainment for the 2008 ozone standard by the deadline of July 20, 2018, based on design value data from ambient air monitors for the calendar years 2015 to 2017.¹⁶

- c. EPA proposed approval of the Colorado attainment demonstration on April 6, 2018.¹⁷ Thus, EPA proposes to include that the DMNFR area, including the two Jefferson County monitors addressed in this Good Neighbor certification for New Mexico and Albuquerque – Bernalillo County, will meet the attainment deadline of July 20, 2018, based on design value data for the calendar years 2015 to 2017. This evidence indicates that EPA’s modeling overestimated future year projections, when compared to modeling performed with actual monitoring data. Thus, EPA’s modeled projections of a significant New Mexico contribution in 2017 can also be viewed as an overestimation.

EPA has advised EHD and NMED that they may cite Colorado’s attainment demonstration for the DMNFR area in support of their own demonstration of how they meet Good Neighbor obligations under the 2008 ozone NAAQS.

- 4. **Exceptional Event Demonstration for Denver area.** On April 5, 2018, the State of Colorado issued a proposed ozone Exceptional Events Demonstration, under EPA’s exceptional events data exclusion rule (“Exceptional Events Rule”),¹⁸ for wildfire events that occurred on September 2 and 4, 2017.¹⁹ These non-anthropogenic events elevated ozone levels at ambient air monitors in the DMNFR area, including at the two Jefferson County monitor sites discussed in this Good Neighbor SIP certification for New Mexico and Albuquerque – Bernalillo County. As discussed below, these elevated ozone models do not invalidate the attainment demonstration for the DMNFR area for the 2008 ozone NAAQS.

EPA’s Exceptional Events Rule allows a state to exclude air monitor data influenced by certain natural events from determinations of NAAQS exceedances or violations. Colorado’s exceptional events demonstration for the DMNFR area would allow the exclusion of ozone monitoring data for September 2 and 4, 2017 from design value calculations that would otherwise cause design values at monitoring sites to violate the 2008 ozone NAAQS. In the event of such a violation, Denver’s “moderate” ozone nonattainment area would fail to meet a July 20, 2018 deadline to return to attainment

¹⁶ Denver Attainment SIP 2016, passim.

¹⁷ 83 Fed. Reg. 14,807.

¹⁸ 50 CFR § 50.14.

¹⁹ Colorado Department of Public Health and Environment, Exceptional Event for Ozone on September 2 and 4, 2017 (April 5, 2018), available at https://www.colorado.gov/airquality/tech_doc_repository.aspx#exceptional_events (last accessed May 2, 2018).

status. Colorado's exceptional event demonstration presents data that meet EPA's data exclusion requirements. The data characterizes overall regional climate, weather patterns, ozone formation dynamics, air contaminant emissions, and ambient air monitor readings over varying time spans, including days, months, or years prior to the exceptional event of September 2 and 4, 2017. The purpose of this data is to show that the wildfire events on those days were indeed exceptional, as defined in the EPA rule, and thus should not be included in data determining whether design values for the 2015 to 2017 period violated the 2008 ozone NAAQS. Absent such a violation, the attainment demonstration for the DMNFR area remains valid.

Although EPA has not officially approved the exceptional events demonstration for the September 2 and 4, 2017 wildfires, EPA has indicated by its proposed approval of the attainment demonstration for the Denver area that it expects the area to meet the July 20, 2018 attainment deadline. Further, EPA has informed New Mexico and Albuquerque – Bernalillo County that they may cite to Colorado's exceptional events demonstration in showing that they will meet their Good Neighbor obligations for the 2008 ozone NAAQS.

Collectively, the above four lines of evidence are sufficient for a weight of evidence demonstration that New Mexico, and therefore Albuquerque – Bernalillo County, will not contribute to downwind nonattainment or maintenance difficulties at any monitor in the United States for purposes of compliance with Good Neighbor obligations under the 2008 ozone standard.