ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R06–OAR–2021–0801, EPA–HQ–OAR–2021–0663; FRL–9338–01–R6]

Air Plan Disapproval; Arkansas, Louisiana, Oklahoma, and Texas; Interstate Transport of Air Pollution for the 2015 8-Hour Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA or Agency) is proposing to disapprove State Implementation Plan (SIP) submittals from Arkansas, Louisiana, Oklahoma and Texas regarding interstate transport for the 2015 8-hour ozone national ambient air quality standard (NAAQS). This provision requires that each state's SIP contain adequate provisions to prohibit emissions from within the state from significantly contributing to nonattainment or interfering with maintenance of the NAAQS in other states. The ''good neighbor'' or ''interstate transport'' requirement is part of the broader set of ''infrastructure'' requirements, which are designed to ensure that the structural components of each state's air quality management program are adequate to meet the state's responsibilities under the CAA. This disapproval, if finalized, will establish a 2-year deadline for the EPA to promulgate a Federal Implementation Plan (FIP) to address the relevant interstate transport requirements, unless the EPA approves a subsequent SIP submittal that meets these requirements. Disapproval does not start a mandatory sanctions clock.

DATES: Written comments must be received on or before April 25, 2022.

ADDRESSES: You may send comments, identified as Docket No. EPA–R06–OAR–2021–0801, by any of the following methods: Federal eRulemaking Portal at *https://www.regulations.gov* following the online instructions for submitting comments or via email to *fuerst.sherry@epa.gov.* Include Docket ID No. EPA–R06–OAR–2021–0801 in the subject line of the message.

Instructions: All comments submitted must include the Docket ID No. for this rulemaking. Comments received may be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the ''Public Participation'' heading of the **SUPPLEMENTARY INFORMATION** section of this document. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are open to the public by appointment only to reduce the risk of transmitting COVID–19. Our Docket Center staff also continues to provide remote customer service via email, phone, and webform. For further information on the EPA Docket Center services and the current status, please visit us online at *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Sherry Fuerst, EPA Region 6 Office, AR–SI, 214–665–6454, *fuerst.sherry@epa.gov.* We encourage the public to submit comments via *https://www.regulations.gov,* as there will be a delay in processing mail and no courier or hand deliveries will be accepted. Please call or email the contact above if you need alternative access to material indexed but not provided in the docket.

SUPPLEMENTARY INFORMATION: *Public Participation:* Submit your comments, identified by Docket ID No. EPA–R06–OAR–2021–0801, at *https://www.regulations.gov* (our preferred method), or the other methods identified in the **ADDRESSES** section. Once submitted, comments cannot be edited or removed from the docket. The EPA may publish any comment received to its public docket. Do not submit to the EPA's docket at *https://www.regulations.gov* any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system).

There are two dockets supporting this action, EPA–R06–OAR–2021–0801 and EPA–HQ–OAR–2021–0663. Docket No. EPA–R06–OAR–2021–0801 contains information specific to Arkansas, Louisiana, Oklahoma, and Texas, including the notice of proposed rulemaking, submittals from the states, and the EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document (EPA Region 6 TSD). Docket No. EPA–HQ–OAR–2021–0663 contains additional modeling files, emissions inventory files, technical support documents, and other relevant supporting documentation regarding interstate transport of emissions for the 2015 8-hour ozone NAAQS which are being used to support this action, including Preparation of Emissions Inventories for the 2016v2 North American Emissions Modeling Platform, and Air Quality Modeling TSD for 2015 ozone NAAQS Transport SIP Proposed Actions. All comments regarding information in either of these dockets are to be made in Docket No. EPA–R06–OAR–2021–0801. For additional submission methods, please contact Sherry Fuerst, 214–665–6454, *fuerst.sherry@epa.gov.* For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.* Due to public health concerns related to COVID–19, the EPA Docket Center and Reading Room are open to the public by appointment only. Our Docket Center staff also continues to provide remote customer service via email, phone, and webform. For further information and updates on EPA Docket Center services, please visit us online at *https://www.epa.gov/dockets.*

The EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID–19.

The index to the dockets for this action, Docket No. EPA–R06–OAR–2021–0801 and EPA–HQ–OAR–2021–0663, are available electronically at *https://www.regulations.gov.* While all documents in the docket are listed in the index, some information may not be publicly available due to docket file size restrictions or content (*e.g.,* CBI).

Throughout this document, ''we,'' ''us,'' and ''our'' means the EPA.

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I. Background

A. Description of Statutory Background

On October 1, 2015, the EPA promulgated a revision to the 2015 8-hour ozone NAAQS (2015 ozone NAAQS), lowering the level of both the primary and secondary standards to 0.070 parts per million (ppm).[1] Section 110(a)(1) of the CAA requires states to submit, within 3 years after promulgation of a new or revised standard, SIP submissions meeting the applicable requirements of section 110(a)(2).[2] One of these applicable requirements is found in CAA section 110(a)(2)(D)(i)(I), otherwise known as the ''interstate transport'' or ''good neighbor'' provision, which generally requires SIPs to contain adequate provisions to prohibit in-state emissions activities from having certain adverse air quality effects on other states due to interstate transport of pollution. There are two requirements, often referred to as ''prongs'' within CAA section 110(a)(2)(D)(i)(I). A SIP for a new or revised NAAQS must contain adequate provisions prohibiting any source or other type of emissions activity within the state from emitting air pollutants in amounts that will significantly contribute to nonattainment of the NAAQS in another state (prong 1) or interfere with maintenance of the NAAQS in another state (prong 2). The EPA and states must give independent significance to prong 1 and prong 2 when evaluating downwind air quality problems under CAA section 110(a)(2)(D)(i)(I).[3]

B. Description of the EPA's 4-Step Interstate Transport Regulatory Process

The EPA is using the 4-Step interstate transport framework (or 4-Step framework) described in detail below to evaluate states' SIP submittals addressing the interstate transport provision for the 2015 ozone NAAQS. The EPA has addressed the interstate transport requirements of CAA section 110(a)(2)(D)(i)(I) with respect to prior ozone NAAQS in several regional regulatory actions, including the Cross-State Air Pollution Rule (CSAPR), which addressed interstate transport with respect to the 1997 ozone NAAQS as well as the 1997 and 2006 fine particulate matter standards,[4] and the Cross-State Air Pollution Rule Update (CSAPR Update) [5] and the Revised CSAPR Update, both of which addressed the 2008 ozone NAAQS.[6]

Through the development and implementation of the CSAPR rulemakings and prior regional rulemakings pursuant to the interstate transport provision,[7] the EPA, working in partnership with states, developed the following 4-Step framework to evaluate a state's obligations to eliminate interstate transport emissions under the interstate transport provision for the ozone NAAQS: (1) Identify monitoring sites that are projected to have problems attaining and/or maintaining the NAAQS (*i.e.,* nonattainment and/or maintenance receptors); (2) identify states that impact those air quality problems in other (*i.e.,* downwind) states sufficiently such that the states are considered ''linked'' and therefore warrant further review and analysis; (3) identify the emissions reductions necessary (if any), applying a multifactor analysis, to eliminate each linked upwind state's significant contribution to nonattainment or interference with maintenance of the NAAQS at the locations identified in Step 1; and (4) adopt permanent and enforceable measures needed to achieve those emissions reductions.

[1] ''National Ambient Air Quality Standards for Ozone'', Final Rule, 80 FR 65292 (October 26, 2015). Although the level of the standard is specified in the units of ppm, ozone concentrations are also described in parts per billion (ppb). For example, 0.070 ppm is equivalent to 70 ppb.

[2] SIP revisions that are intended to meet the applicable requirements of section 110(a)(1) and (2) of the CAA are often referred to as infrastructure SIPs and the applicable elements under section 110(a)(2) are referred to as infrastructure requirements.

[3] *See North Carolina* v. *EPA,* 531 F.3d 896, 909–11 (D.C. Cir. 2008).

[4] *See* ''Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals'', 76 FR 48208 (Aug. 8, 2011).

[5] *See* ''Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS'', 81 FR 74504 (Oct. 26, 2016).

[6] In 2019, the D.C. Circuit Court of Appeals remanded the CSAPR Update to the extent it failed to require upwind states to eliminate their significant contribution by the next applicable attainment date by which downwind states must come into compliance with the NAAQS, as established under CAA section 181(a). *Wisconsin* v. *EPA,* 938 F.3d 303, 313 (D.C. Cir. 2019). The Revised CSAPR Update for the 2008 Ozone NAAQS, 86 FR 23054 (April 30, 2021), responded to the remand of the CSAPR Update in *Wisconsin* and the vacatur of a separate rule, the ''CSAPR Close-Out,'' 83 FR 65878 (December 21, 2018), in *New York* v. *EPA,* 781 F. App'x. 4 (D.C. Cir. 2019).

[7] In addition to the CSAPR rulemakings, other regional rulemakings addressing ozone transport include the ''NO_X SIP Call,'' 63 FR 57356 (October 27, 1998), and the ''Clean Air Interstate Rule'' (CAIR), 70 FR 25162 (May 12, 2005).

C. Background on the EPA's Ozone Transport Modeling Information

In general, the EPA has performed nationwide air quality modeling to project ozone design values (DVs) [8] which are used in combination with measured data to identify nonattainment and maintenance receptors. To quantify the contribution of emissions from specific upwind states on 2023 ozone DVs for the identified downwind nonattainment and maintenance receptors, the EPA performed nationwide, state-level ozone source apportionment modeling for 2023. The source apportionment modeling provided contributions to ozone at receptors from precursor emissions of anthropogenic nitrogen oxides (NO_X) and volatile organic compounds (VOCs) in individual upwind states.

The EPA has released several documents containing projected ozone design values, contributions, and information relevant to evaluating interstate transport with respect to the 2015 ozone NAAQS. First, on January 6, 2017, the EPA published a notice of data availability (NODA) in which we requested comment on preliminary interstate ozone transport data including projected ozone DVs and interstate contributions for 2023 using a 2011 base year platform.[9] In the NODA, the EPA used the year 2023 as the analytic year for this preliminary modeling because that year aligns with the expected attainment year for Moderate ozone nonattainment areas for the 2015 NAAQS.[10] On October 27, 2017, we released a memorandum (October 2017 memorandum) containing updated modeling data for 2023, which incorporated changes made in response to comments on the NODA, and noted that the modeling may be useful for states developing SIPs to address interstate transport obligations for the 2008 ozone NAAQS.[11] On March 27, 2018, we issued a memorandum (March 2018 memorandum) noting that the same 2023 modeling data released in the October 2017 memorandum could also be useful for identifying potential downwind air quality problems with respect to the 2015 ozone NAAQS at Step 1 of the 4-Step framework.[12] The March 2018 memorandum also included the then newly available contribution modeling data to assist states in evaluating their impact on potential downwind air quality problems for the 2015 ozone NAAQS under Step 2 of the 4-Step framework.[13] The EPA subsequently issued two more memoranda in August and October 2018, providing additional information to states developing interstate transport SIP submissions for the 2015 ozone NAAQS concerning, respectively, potential contribution thresholds that may be appropriate to apply in Step 2 of the 4-Step interstate transport framework, and considerations for identifying downwind areas that may have problems maintaining the standard at Step 1 of the 4-Step interstate transport framework.[14]

Since the release of the modeling data shared in the March 2018 memorandum, the EPA performed updated modeling using a 2016-based emissions modeling platform (*i.e.,* 2016v1). This emissions platform was developed under the EPA/Multi-Jurisdictional Organization (MJO)/state collaborative project.[15] This collaborative project was a multi-year joint effort by the EPA, MJOs, and states to develop a new, more recent emissions platform for use by the EPA and states in regulatory modeling as an improvement over the dated 2011-based platform that the EPA had used to project ozone DVs and contribution data provided in the 2017 and 2018 memoranda. The EPA used the 2016v1 emissions to project ozone DVs and contributions for 2023. On October 30, 2020, in the Notice of Proposed Rulemaking for the Revised CSAPR Update, the EPA released and accepted public comment on 2023 modeling that used the 2016v1 emissions platform.[16] *See* 85 FR 68964, 68981. Although the Revised CSAPR Update addressed transport for the 2008 ozone NAAQS, the projected DVs and contributions from the 2016v1 platform are also useful for identifying downwind ozone problems and linkages with respect to the 2015 ozone NAAQS.[17]

Following the Revised CSAPR Update final rule, the EPA made further updates to the 2016 emissions platform to include mobile emissions from the EPA's Motor Vehicle Emission Simulator MOVES3 model [18] and updated emissions projections for electric generating units (EGUs) that reflect the emissions reductions from the Revised CSAPR Update, recent information on plant closures, and other sector trends. The construct of the updated emissions platform, 2016v2, is described in the Technical Support Document (TSD) Preparation of Emissions Inventories for the 2016v2 North American Emissions Modeling Platform, which is included in Docket ID No. EPA–HQ–OAR–2021–0663. The EPA performed air quality modeling of the 2016v2 emissions using the most recent publicly released version of the Comprehensive Air-quality Model with extensions (CAMx) photochemical modeling, version 7.10.[19] The EPA now proposes to rely on the air quality modeling performed using CAMx, version 7.10, and the newly available 2016v2 emissions platform in evaluating states' submissions with respect to Steps

[8] A design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS. Design values are typically used to designate and classify nonattainment areas, as well as to assess progress towards meeting the NAAQS. *See https://www.epa.gov/air-trends/air-quality-design-values#report.*

[9] *See* ''Notice of Availability of the Environmental Protection Agency's Preliminary Interstate Ozone Transport Modeling Data for the 2015 8-hour Ozone National Ambient Air Quality Standard (NAAQS)'', 82 FR 1733 (January 6, 2017).

[10] 82 FR at 1735.

[11] *See* EPA memorandum, ''Information on the Interstate Transport State Implementation Plan Submissions for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Act section 110(a)(2)(D)(i)(I)'', October 27, 2017, (''October 2017 memorandum'') available in Docket ID No. EPA–HQ–OAR–2021–0663 or at *https://www.epa.gov/interstate-air-pollution-transport/interstate-air-pollution-transport-memos-and-notices.*

[12] *See* EPA memorandum, ''Information on the Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards under Clean Air Act section 110(a)(2)(D)(i)(I)'', March 27, 2018, (''March 2018 memorandum'') available in Docket ID No. EPA–HQ–OAR–2021–0663 or at *https://www.epa.gov/interstate-air-pollution-transport/interstate-air-pollution-transport-memos-and-notices.*

[13] The March 2018 memorandum, however, provided, ''While the information in this memorandum and the associated air quality analysis data could be used to inform the development of these SIPs, the information is not a final determination regarding states' obligations under the interstate transport provision. Any such determination would be made through notice-and-comment rulemaking.''

[14] *See* EPA memorandums, ''Analysis of Contribution Thresholds for Use in Clean Air Act section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards'', August 31, 2018 (''August 2018 memorandum''), and ''Considerations for Identifying Maintenance Receptors for Use in Clean Air Act section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards'', October 19, 2018 (''October 2018 memorandum''), available in Docket ID No. EPA–HQ–OAR–2021–0663 or at *https://www.epa.gov/airmarkets/memo-and-supplemental-information-regarding-interstate-transport-sips-2015-ozone-naaqs.*

[15] The results of this modeling, as well as the underlying modeling files, are included in Docket ID No. EPA–HQ–OAR–2021–0663.

[16] *See* 85 FR 68964, 68981 (Oct. 30, 2020).

[17] *See* the Air Quality Modeling Technical Support Document for the Final Revised Cross-State Air Pollution Rule Update, available in Docket ID No. EPA–HQ–OAR–2021–0063 for this action.

[18] Additional details and documentation related to the MOVES3 model can be found at *https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves.*

[19] Ramboll Environment and Health, January 2021, *www.camx.com.*

1 and 2 of the 4-Step framework and generally referenced within this action as 2016v2 modeling for 2023. By using the updated modeling results, the EPA is using the most current and technically appropriate information for this proposed rulemaking. Sections II–V of this action and the Air Quality Modeling TSD for 2015 ozone NAAQS Transport SIP Proposed Actions, included in Docket ID No. EPA–HQ–OAR–2021–0663 for this proposal, contain additional detail on the EPA's 2016v2 modeling. In this action, the EPA is inviting public comment on this updated 2023 modeling, which uses a 2016v2 emissions platform. Per the instructions in the Supplementary Information section above, all public comments, including comments on the EPA's air quality modeling should be submitted in the Regional docket for this action, Docket ID No. EPA–R06–OAR–2021–0801. Comments are not being accepted in Docket No. EPA–HQ–OAR–2021–0663.

States may have chosen to rely on the results of EPA modeling and/or alternative modeling performed by states or Multi-Jurisdictional Organizations (MJOs) to evaluate downwind air quality problems and contributions as part of their submissions. In Sections II–V of this action, we evaluate how the states used air quality modeling information in their submissions.

D. The EPA's Approach to Evaluating Interstate Transport SIPs for the 2015 Ozone NAAQS

The EPA proposes to apply a consistent set of policy judgments across all states for purposes of evaluating interstate transport obligations and the approvability of interstate transport SIP submittals for the 2015 ozone NAAQS. These policy judgments reflect consistency with relevant case law and past agency practice as reflected in the CSAPR and related rulemakings. Nationwide consistency in approach is particularly important in the context of interstate ozone transport, which is a regional-scale pollution problem involving many smaller contributors. Effective policy solutions to the problem of interstate ozone transport going back to the 1998 NO_X SIP Call [20] have necessitated the application of a uniform framework of policy judgments in order to ensure an ''efficient and equitable'' approach. *See EME Homer City Generation, LP* v. *EPA,* 572 U.S. 489, 519 (2014).

In the March, August, and October 2018 memoranda, the EPA recognized that states may be able to establish alternative approaches to addressing their interstate transport obligations for the 2015 ozone NAAQS that vary from a nationally uniform framework. The EPA emphasized in these memoranda, however, that such alternative approaches must be technically justified and appropriate in light of the facts and circumstances of each particular state's submittal. In general, the EPA continues to believe that deviation from a nationally consistent approach to ozone transport must be substantially justified and have a well-documented technical basis that is consistent with relevant case law. Where states submitted SIPs that rely on any such potential ''flexibilities'' as may have been identified or suggested in the past, the EPA will evaluate whether the state adequately justified the technical and legal basis for doing so.

The EPA notes that certain concepts included in an attachment to the March 2018 memorandum require unique consideration, and these ideas do not constitute agency guidance with respect to transport obligations for the 2015 ozone NAAQS. Attachment A to the March 2018 memorandum identified a ''Preliminary List of Potential Flexibilities'' that could potentially inform SIP development.[21] However, the EPA made clear in Attachment A that the list of ideas were not suggestions endorsed by the Agency but rather ''comments provided in various forums'' on which the EPA sought ''feedback from interested stakeholders.'' [22] Further, Attachment A stated, ''EPA is not at this time making any determination that the ideas discussed below are consistent with the requirements of the CAA, nor are we specifically recommending that states use these approaches.'' [23] Attachment A to the March 2018 memorandum, therefore, does not constitute agency guidance, but was intended to generate further discussion around potential approaches to addressing ozone transport among interested stakeholders. To the extent states sought to develop or rely on these ideas in support of their SIP submittals, the EPA will review the technical and legal justifications for doing so.

The remainder of this section describes the EPA's proposed framework with respect to analytic year, definition of nonattainment and maintenance receptors, selection of contribution threshold, and multifactor control strategy analysis.

1. Selection of Analytic Year

In general, the states and the EPA must implement the interstate transport provision in a manner ''consistent with the provisions of [title I of the CAA.]'' CAA section 110(a)(2)(D)(i). This requires, among other things, that these obligations are addressed consistently with the timeframes for downwind areas to meet their CAA obligations. With respect to ozone NAAQS, under CAA section 181(a), this means obligations must be addressed ''as expeditiously as practicable'' and no later than the schedule of attainment dates provided in CAA section 181(a)(1).[24] Several D.C. Circuit court decisions address the issue of the relevant analytic year for the purposes of evaluating ozone transport air quality problems. On September 13, 2019, the D.C. Circuit issued a decision in *Wisconsin* v. *EPA,* remanding the CSAPR Update to the extent that it failed to require upwind states to eliminate their significant contribution by the next applicable attainment date by which downwind states must come into compliance with the NAAQS, as established under CAA section 181(a). 938 F.3d at 313.

On May 19, 2020, the D.C. Circuit issued a decision in *Maryland* v. *EPA* that cited the *Wisconsin* decision in holding that the EPA must assess the impact of interstate transport on air quality at the next downwind attainment date, including Marginal area attainment dates, in evaluating the basis for the EPA's denial of a petition under CAA section 126(b). *Maryland* v. *EPA,* 958 F.3d 1185, 1203–04 (D.C. Cir. 2020). The court noted that ''section 126(b) incorporates the Good Neighbor Provision,'' and, therefore, ''EPA must find a violation [of section 126] if an upwind source will significantly contribute to downwind nonattainment at the *next downwind attainment deadline.* Therefore, the agency must evaluate downwind air quality at that deadline, not at some later date.'' *Id.* at 1204 (emphasis added). The EPA interprets the court's holding in *Maryland* as requiring the states and the Agency, under the interstate transport provision, to assess downwind air quality as expeditiously as practicable and no later than the next applicable

[20] *See* 63 FR 57356. The NO_X SIP Call required 22 eastern states and the District of Columbia to submit state implementation plans (SIPs) that set statewide ozone season NOx budgets which would reduce emissions of NO_X.

[21] March 2018 memorandum, Attachment A.

[22] *Id.* at A–1.

[23] *Id.*

[24] For attainment dates for the 2015 8-hour ozone NAAQS, refer to CAA section 181(a), 40 CFR 51.1303, and ''Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards'', 83 FR 25776 (June 4, 2018, effective Aug. 3, 2018).

attainment date,[25] which is now the Moderate area attainment date under CAA section 181 for ozone nonattainment. The Moderate area attainment date for the 2015 ozone NAAQS is August 3, 2024.[26] The EPA believes that 2023 is now the appropriate year for analysis of interstate transport obligations for the 2015 ozone NAAQS, because the 2023 ozone season is the last relevant ozone season during which achieved emissions reductions in linked upwind states could assist downwind states with meeting the August 3, 2024, Moderate area attainment date for the 2015 ozone NAAQS.

The EPA recognizes that the attainment date for nonattainment areas classified as Marginal for the 2015 ozone NAAQS was August 3, 2021. Under the *Maryland* holding, any necessary emissions reductions to satisfy interstate transport obligations should have been implemented by no later than this date. At the time of the statutory deadline to submit interstate transport SIPs (October 1, 2018), many states relied upon the EPA modeling of the year 2023, and no state provided an alternative analysis using a 2021 analytic year (or the prior 2020 ozone season). However, the EPA must act on SIP submittals using the information available at the time it takes such action. In this circumstance, the EPA does not believe it would be appropriate to evaluate states' obligations under CAA section 110(a)(2)(D)(i)(I) as of an attainment date that is wholly in the past, because the Agency interprets the interstate transport provision as forward looking. *See* 86 FR at 23074; *see also Wisconsin,* 938 F.3d at 322. Consequently, in this proposal the EPA proposes to use the analytical year of 2023 to evaluate each state's CAA section 110(a)(2)(D)(i)(I) SIP submission with respect to the 2015 ozone NAAQS.

2. Step 1 of the 4-Step Interstate Transport Framework

In Step 1, the EPA identifies monitoring sites that are projected to have problems attaining and/or maintaining the NAAQS in the 2023 analytic year. Where the EPA's analysis shows that a site does not fall under the definition of a nonattainment or maintenance receptor, that site is excluded from further analysis under the EPA's 4-Step framework. For sites that are identified as a nonattainment or maintenance receptor in 2023, we proceed to the next step of our 4-Step framework by identifying the upwind state's contribution to those receptors.

The EPA's approach to identifying ozone nonattainment and maintenance receptors in this action is consistent with the approach used in previous transport rulemakings. The EPA's approach gives independent consideration to both the ''contribute significantly to nonattainment'' and the ''interfere with maintenance'' prongs of CAA section 110(a)(2)(D)(i)(I), consistent with the D.C. Circuit's direction in *North Carolina* v. *EPA.*[27]

For the purpose of this proposal, the EPA identifies ''nonattainment'' receptors as those monitoring sites that are projected to have average DVs in 2023 that exceed the NAAQS and that are also measuring nonattainment based on the most recent monitored DVs. This approach is consistent with prior transport rulemakings, such as the CSAPR Update, where the EPA defined nonattainment receptors as those areas that both currently measure nonattainment and that the EPA projects will be in nonattainment in the future analytic year (*i.e.,* 2023).[28]

In addition, in this proposal, the EPA identifies a receptor to be a ''maintenance'' receptor for purposes of defining interference with maintenance, consistent with the method used in the CSAPR and upheld by the D.C. Circuit in *EME Homer City Generation, L.P.* v. *EPA,* 795 F.3d 118, 136 (D.C. Cir. 2015).[29] Specifically, the EPA identified maintenance receptors as those receptors that would have difficulty maintaining the relevant NAAQS in a scenario that takes into account historical variability in air quality at that receptor. The variability in air quality was determined by evaluating the ''maximum'' future DV at each receptor based on a projection of the maximum measured DV over the relevant period. The EPA interprets the projected maximum future DV to be a potential future air quality outcome consistent with the meteorology that yielded maximum measured concentrations in the ambient data set analyzed for that receptor (*i.e.,* ozone conducive meteorology). The EPA also recognizes that previously experienced meteorological conditions (*e.g.,* dominant wind direction, temperatures, air mass patterns) promoting ozone formation that led to maximum concentrations in the measured data may reoccur in the future. The maximum DV gives a reasonable projection of future air quality at the receptor under a scenario in which such conditions do, in fact, reoccur. The projected maximum DV is used to identify upwind emissions that, under those circumstances, could interfere with the downwind area's ability to maintain the NAAQS.

Recognizing that nonattainment receptors are also, by definition, maintenance receptors, the EPA often uses the term ''maintenance-only'' to refer to those receptors that are not nonattainment receptors. Consistent with the concepts for maintenance receptors, as described above, the EPA identifies ''maintenance-only'' receptors as those monitoring sites that have projected average DVs above the level of the applicable NAAQS, but that are not currently measuring nonattainment based on the most recent official DVs. In addition, those monitoring sites with projected average DVs below the NAAQS, but with projected maximum DVs above the NAAQS are also identified as ''maintenance only'' receptors, even if they are currently measuring nonattainment based on the most recent official DVs.

3. Step 2 of the 4-Step Interstate Transport Framework

In Step 2, the EPA quantifies the contribution of each upwind state to each receptor in the 2023 analytic year. The contribution metric used in Step 2 is defined as the average impact from each state to each receptor on the days with the highest ozone concentrations at the receptor based on the 2023 modeling. If a state's contribution value does not equal or exceed the threshold of 1 percent of the NAAQS (*i.e.,* 0.70 ppb for the 2015 ozone NAAQS), the upwind state is not ''linked'' to a downwind air quality problem, and the EPA, therefore, concludes that the state does not significantly contribute to

[25] We note that the court in *Maryland* did not have occasion to evaluate circumstances in which the EPA may determine that an upwind linkage to a downwind air quality problem exists at Steps 1 and 2 of the 4-Step interstate transport framework by a particular attainment date, but for reasons of impossibility or profound uncertainty the Agency is unable to mandate upwind pollution controls by that date. *See Wisconsin,* 938 F.3d at 320. The D.C. Circuit noted in *Wisconsin* that upon a sufficient showing, these circumstances may warrant flexibility in effectuating the purpose of the interstate transport provision.

[26] *See* CAA section 181(a); 40 CFR 51.1303; ''Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards'', 83 FR 25776 (June 4, 2018, effective Aug. 3, 2018).

[27] *See North Carolina* v. *EPA,* 531 F.3d 896, 910–11 (D.C. Cir. 2008) (holding that the EPA must give ''independent significance'' to each prong of CAA section 110(a)(2)(D)(i)(I)).

[28] *See* 81 FR 74504 (October 26, 2016). This same concept, relying on both current monitoring data and modeling to define nonattainment receptor, was also applied in CAIR. *See* 70 FR at 25241, 25249 (January 14, 2005); *see also North Carolina,* 531 F.3d at 913–14 (affirming as reasonable EPA's approach to defining nonattainment in CAIR).

[29] *See* 76 FR 48208 (August 8, 2011). CSAPR Update and Revised CSAPR Update also used this approach. See 81 FR 74504 (October 26, 2016) and 86 FR 23054 (April 30, 2021).

nonattainment or interfere with maintenance of the NAAQS in the downwind states. However, if a state's contribution equals or exceeds the 1 percent threshold, the state's emissions are further evaluated in Step 3, considering both air quality and cost of controls as part of a multifactor analysis, to determine what, if any, emissions might be deemed ''significant'' and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I). The EPA is proposing to continue to rely in the first instance on the 1 percent threshold for the purpose of evaluating a state's contribution to nonattainment or maintenance of the 2015 ozone NAAQS (*i.e.,* 0.70 ppb) at downwind receptors. This is consistent with the Step 2 approach that the EPA applied in CSAPR for the 1997 ozone NAAQS, which has subsequently been applied in the CSAPR Update when evaluating interstate transport obligations for the 2008 ozone NAAQS. For ozone, as the EPA found in the Clean Air Interstate Rule (CAIR), CSAPR, and CSAPR Update, a portion of the nonattainment problem from anthropogenic sources in the U.S. results from the combined impact of relatively small contributions from many upwind states, along with contributions from in-state sources and, in some cases, substantially larger contributions from a subset of upwind states. The EPA's analysis shows that much of the ozone transport problem being analyzed in this proposed rule is still the result of the collective impacts of contributions from many upwind states. Therefore, application of a consistent contribution threshold is necessary to identify those upwind states that should have responsibility for addressing their contribution to the downwind nonattainment and maintenance problems to which they collectively contribute. Continuing to use 1 percent of the NAAQS as the screening metric to evaluate collective contribution from many upwind states also allows the EPA (and states) to apply a consistent framework to evaluate interstate emissions transport under the interstate transport provision from one NAAQS to the next. *See* 81 FR at 74518. *See also* 86 FR at 23085 (reviewing and explaining rationale from CSAPR); 76 FR at 48237–38 (for selection of 1 percent threshold).

The EPA's August 2018 memorandum recognized that in certain circumstances, a state may be able to establish that an alternative contribution threshold of 1 ppb is justifiable. Where a state relies on this alternative threshold, and where that state determined that it was not linked at Step 2 using the alternative threshold, the EPA will evaluate whether the state provided a technically sound assessment of the appropriateness of using this alternative threshold based on the facts and circumstances underlying its application in the particular SIP submission.

4. Step 3 of the 4-Step Interstate Transport Framework

Consistent with the EPA's longstanding approach to eliminating significant contribution or interference with maintenance, at Step 3, states linked at Steps 1 and 2 are generally expected to prepare a multifactor analysis of potential emissions controls. The EPA's analysis at Step 3 in prior Federal actions addressing interstate transport requirements has primarily focused on an evaluation of cost-effectiveness of potential emissions controls (on a marginal cost-per-ton basis), the total emissions reductions that may be achieved by requiring such controls (if applied across all linked upwind states), and an evaluation of the air quality impacts such emissions reductions would have on the downwind receptors to which a state is linked; other factors may potentially be relevant if adequately supported. In general, where the EPA's or alternative air quality and contribution modeling establishes that a state is linked at Steps 1 and 2, it will be insufficient at Step 3 for a state merely to point to its existing rules requiring control measures as a basis for approval. In general, the emissions-reducing effects of all existing emissions control requirements are already reflected in the air quality results of the modeling for Steps 1 and 2. If the state is shown to still be linked to one or more downwind receptor(s), states must provide a well-documented evaluation determining whether their emissions constitute significant contribution or interference with maintenance by preparing a multifactor assessment that evaluates additional available control opportunities. While the EPA has not prescribed a particular method for this assessment, the EPA expects states at a minimum to present a sufficient technical evaluation. This would typically include information on emissions sources, applicable control technologies, emissions reductions, costs, cost effectiveness, and downwind air quality impacts of the estimated reductions, before concluding that no additional emissions controls should be required.[30]

[30] As examples of general approaches for how such an analysis could be conducted for their sources, states could look to the CSAPR Update, 81 FR 74504, 74539–51; CSAPR, 76 FR 48208, 48246–63; CAIR, 70 FR 25162, 25195–229; or the NO_X SIP Call, 63 FR 57356, 57399–405. *See also* Revised CSAPR Update, 86 FR 23054, 23086–23116. Consistently across these rulemakings, the EPA has developed emissions inventories, analyzed different levels of control stringency at different cost thresholds, and assessed resulting downwind air quality improvements.

5. Step 4 of the 4-Step Interstate Transport Framework

In Step 4, states (or the EPA) develop permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary in Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. For a state linked in Steps 1 and 2 to rely on an emissions control measure in Step 3 to address its interstate transport obligations, that measure must be included in the state's SIP so that it is permanent and federally enforceable. *See* CAA section 110(a)(2)(D) (''Each such [SIP] shall . . . contain adequate provisions. . . .''). *See also* CAA section 110(a)(2)(A); *Committee for a Better Arvin* v. *U.S. E.P.A.,* 786 F.3d 1169, 1175–76 (9th Cir. 2015) (holding that measures relied on by state to meet CAA requirements must be included in the SIP).

II. Arkansas SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS and the EPA Evaluation of the SIP Submission

A. Summary of ADEQ SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS

On October 10, 2019, the Arkansas Division of Environmental Quality (ADEQ) of the Arkansas Department of Energy and Environment made a SIP submission addressing interstate transport of air pollution for the 2015 ozone NAAQS. The ADEQ SIP submission provided an analysis of Arkansas's air emissions impact to downwind states using the EPA's 4-Step framework and an analytic year of 2023 and concluded that the State's air emissions will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states.

To identify downwind monitors projected to be in nonattainment and/or have maintenance issues in 2023 (Step 1), ADEQ relied on the EPA's interstate transport modeling results that are included as an attachment to the March 2018 memorandum. The EPA modeling results included with the March 2018 memorandum provide: (1) Projected

average DV and maximum DV for the future year 2023 (fy 2023) for ozone monitors projected to be potential nonattainment or maintenance receptors in the 48 contiguous States and (2) the expected contribution of State emissions to the projected ozone concentrations at each ozone monitor.

At Step 2, ADEQ identified those states to which Arkansas contributes emissions and then applied a 1 ppb contribution threshold to determine projected nonattainment and/or maintenance receptors in other states that might be significantly impacted by emissions from Arkansas. ADEQ provided three rationales as a basis to support their decision to rely on a 1 ppb contribution threshold. First, ADEQ cited to the August 2018 memorandum [31] that compares the collective contribution captured by three different contribution thresholds: 1 Percent of the NAAQS, 1 ppb, and 2 ppb. ADEQ summarized the August 2018 memorandum and concluded that the 1 percent and 1 ppb contribution thresholds are generally comparable. Second, ADEQ referenced an April 2018 memorandum [32] in which the EPA examined the use of a significant impact level (SIL) value of 1 ppb for determining whether a proposed prevention of significant deterioration (PSD) source causes or contributes to a violation of the corresponding 2015 ozone NAAQS. Despite recognizing that a contribution threshold is not the same as a significance level, ADEQ claimed that a contribution threshold and significance level are sufficiently analogous to support the use of a 1 ppb contribution threshold. The final rationale ADEQ provided was based on the consistency with the reported precision of Federal reference monitors for ozone and the rounding requirements found in 40 CFR part 50, Appendix U, Interpretation of the Primary and Secondary National Ambient Air Quality Standards for Ozone. ADEQ noted that the 1 percent contribution threshold of 0.7 ppb is lower than the manufacturer's reported precision of Federal reference monitors for ozone and that the requirements found in Appendix U truncates monitor values of 0.7 ppb to 0 ppb.

As stated previously, ADEQ identified all potential nonattainment and maintenance receptors for fy 2023 showing a contribution of emissions from Arkansas.[33] These receptors are included in Table AR–1.

TABLE AR–1—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS IDENTIFIED BY ARKANSAS BASED ON THE EPA'S MARCH 2018 MEMORANDUM

Receptor (site ID, county, state)	2023 average DV (ppb)	2023 maximum DV (ppb)	Arkansas contribution (ppb)
260050003, Allegan, MI	69	71.7	1.64
482011039, Harris, TX	71.8	73.5	0.99
480391004, Brazoria, TX	74	74.9	0.90
484392003, Tarrant, TX	72.5	74.8	0.78
481210034, Denton, TX	69.7	72	0.58
482011034, Harris, TX	70.8	71.6	0.54
551170006, Sheboygan, WI	72.8	75.1	0.51
550790085, Milwaukee, WI	71.2	73	0.40
482010024, Harris, TX	70.4	72.8	0.29
261630019, Wayne, MI	69	71	0.27
240251001, Harford, MD	70.9	73.3	0.17
90019003, Fairfield, CT	73	75.9	0.13
90013007, Fairfield, CT	71	75	0.13
361030002, Suffolk, NY	74	75.5	0.12
360810124, Queens, NY	70.2	72	0.09
90099002, New Haven, CT	69.9	72.6	0.08
90010017, Fairfield, CT	68.9	71.2	0.07
80590006, Jefferson, CO	71.3	73.7	0.03
80590011, Jefferson, CO	70.9	73.9	0.02
81230009, Weld, CO	70.2	71.4	0.02
80350004, Douglas, CO	71.1	73.2	0.01

Based on a 1 ppb contribution threshold, ADEQ identified only one fy 2023 projected maintenance receptor, Allegan County, MI, and no fy 2023 projected nonattainment receptors linked to Arkansas. ADEQ also cited other modeling performed by TCEQ and Midwest Ozone Group, which showed that when different modeling protocols were employed, future year DV projections and contributions could differ considerably. ADEQ therefore elected to consider other evidence regarding its linkage to air quality in Allegan County, MI. Specifically, ADEQ analyzed back trajectory information to infer that there is no consistent or persistent relationship between elevated ozone days in Allegan County, MI and air traveling through Arkansas. ADEQ assessed wind patterns on elevated ozone days—days with a maximum daily average 8-hour ozone (MDA8) greater than 70.9 ppb in Allegan County,

[31] ''Analysis of Contribution Thresholds for Use in Clean Air Act section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards'', August 31, 2018, available in Docket ID No. EPA–HQ–OAR–2021–0663 or at *https://www.epa.gov/airmarkets/memo-and-supplemental-information-regarding-interstate-transport-sips-2015-ozone-naaqs.*

[32] *See* EPA memorandum from Peter Tsirigotis, Director of the Office of Air Quality planning and Standards, April 17, 2018, ''Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program'' (''SILs Guidance'' or ''April 2018 memorandum''), available at: *https://www.epa.gov/sites/default/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf.*

[33] Table AR–1 lists all sites that the EPA projected to have a fy 2023 average DV or fy 2023 maximum DV greater than 70.9 ppb in our March 2018 memorandum. As Arkansas stated in the SIP submission, the EPA considers sites matching these criteria to be projected nonattainment areas and projected maintenance areas, respectively. ADEQ ranked these sites by Arkansas's potential contribution, which the EPA determined based on the daily eight-hour average contributions on the top ten concentration days in 2023.

MI. ADEQ used the National Oceanic and Atmospheric Administration (NOAA) HYbrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) [34] model to evaluate wind back trajectories from over a 10-year period (2008–2017).[35] Over the course of the 10-year period, ADEQ identified 95 elevated ozone days (MDA8 > 70.9 ppb) for the Allegan County, MI monitor.[36] Next, ADEQ identified the maximum ozone value within these elevated ozone days.[37] Using HYSPLIT, ADEQ ran 72-hour back trajectories using the hour of the maximum ozone value for each elevated day as the back trajectory start time. To consider the effects of vertical variations in wind flows on transport patterns, ADEQ used the following starting heights above ground level: 100m, 500m, 1000m, and 1500m. ADEQ obtained 40 km grid meteorological data for the back trajectory analysis using Eta Data Assimilation System (EDAS) data.[38] In total, ADEQ ran 152 back trajectories for each mixing height.[39] ADEQ filtered the back trajectories to determine whether further analysis is warranted using two criteria. First, ADEQ filtered out back trajectories that had a starting hour mixing height below the back trajectory start height because ADEQ asserted these air parcels would not have reached ambient air [40] at the Allegan County, MI monitor site. Second, ADEQ filtered out any back trajectory that did not have a path through any portion of Arkansas. After ADEQ applied their filter criteria, 41 out of 608 back trajectories (6.74%) remained from 22 out of the 95 elevated ozone days (23%) examined. Of the 10 years examined, ADEQ also found that air passing through Arkansas only reached Allegan County, MI on four or more days in one year: 2012.[41] For 2012, HYSPLIT analyses indicated 14 Arkansas-Allegan County, MI linked back trajectories for 7 days in total in 2012, whereas for 2011, 2013, 2014, and 2016 the HYSPLIT analyses indicated three, two, zero and one days with Arkansas-Allegan County, MI linked back trajectories, respectively. For the 10 years ADEQ's performed HYSPLITs, ADEQ's HYSPLIT analysis indicated on average 2.2 days per year had trajectories with Arkansas-Allegan County, MI linked back trajectories. ADEQ also noted that these trajectories passed through other states and through Metropolitan Statistical Areas (MSAs) [42] both before and after traversing through Arkansas. Specifically, ADEQ stated that 37 trajectories passed through the Chicago-Naperville-Elgin, IL–IN–WI MSA prior to reaching Allegan County, MI. Based on these results, ADEQ concluded that other states and MSAs were more likely to have influenced ozone concentrations at the Allegan County, MI monitor on the days with back trajectories linked to Arkansas.

In Step 3, ADEQ also considered air quality trends in Allegan County, MI, emission trends in other upwind states, relative contribution from other upwind states, and cost factors. ADEQ presented that ozone DVs in Allegan County, MI fluctuated over the 2008–2017 period with higher concentration occurring from 2012 through 2014 but declining since 2014. ADEQ also mentioned that despite the most recent 2017 DV for the Allegan County monitor continuing to show an exceedance of the 2015 ozone NAAQS, the EPA-projected 2023 ozone average DV at the Allegan County, MI monitor, based on data provided in the March 2018 memorandum, is 69.0 ppb, which would be in attainment of the 2015 ozone NAAQS in 2023.

Next, ADEQ included an evaluation of the relative contribution and the emission trends from the eight states [43] with contributions greater than 1 ppb to the Allegan County, MI receptor. The emission trends evaluation examined ozone precursors, nitrogen oxides (NO_X) and volatile organic compounds (VOC), from 2011 to 2017 and the model projected fy 2023 emissions level. ADEQ noted that the two states with the highest contributions to Allegan County, MI—Illinois and Indiana—have both experienced year-over-year decreases in NO_X emissions in excess of 20,000 tons of NO_X reduced per year. Arkansas had also experienced decreases in NO_X emissions each evaluated year and emitted less NO_X than any other of the potentially linked states. In addition, ADEQ referenced the EPA projections showing that most potentially linked states will continue to realize reductions in NO_X, as well as VOCs, through 2023. ADEQ confirmed that based on this analysis, the overall general trends of NO_X and VOC emissions are declining from Arkansas and the other linked states. The continuation of trends in the emissions reductions observed, particularly from Illinois and Indiana, are anticipated by ADEQ to result in air quality improvements in Allegan County, MI.

In terms of cost analysis, ADEQ focused only on the cost of NO_X controls at electric generating units (EGUs) in the State because EGUs are the largest source of NO_X emissions that ADEQ regulates. In its analysis, ADEQ found that the costs to install additional NO_X controls (selective catalytic reduction, SCR and selective noncatalytic reduction, SNCR) at EGUs exceed the EPA's cost thresholds used for the CSAPR and CSAPR Update rules.[44] Based on ADEQ's evaluation of the evidence, ADEQ concluded that no additional controls beyond pre-existing

[34] HYbrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) model is a complete system for computing both simple air parcel trajectories and complex dispersion and deposition simulations. The model is designed to support a wide range of simulations related to the atmospheric transport and dispersion of pollutants and hazardous materials to the Earth's surface.

[35] ADEQ analyzed ten years of HYSPLIT back trajectories to examine potential relationships between elevated ozone days at the Allegan County, MI monitor and emissions from Arkansas. In the SIP submission ADEQ stated their rationale for looking at an extended period of time is to gain a more complete picture of how Arkansas's emissions might contribute to elevated ozone in Allegan County, MI, rather than relying entirely on the EPA's modeling simulation, which is based on a single base year.

[36] *See* the AirNow-Tech website at *https://www.airnowtech.org/*. AirNow-Tech is a website for air quality data management analysis, and decision support used by the Federal, State, Tribal, and local air quality organizations.

[37] If the same maximum eight-hour value occurred multiple times a day, ADEQ evaluated all incidences of the value for that day.

[38] EDAS is an intermittent data assimilation system that uses successive three-hour model forecasts to generate gridded meteorological fields that reflect observations covering the continental United States. EDAS is accessible at *https://ready.arl.noaa.gov/edas40.php*.

[39] Mixing heights (m), defined as the height above ground level of the layer adjacent to the ground over which an emitted or entrained inert non-buoyant tracer will be mixed by turbulence.

[40] Ambient air is the ''portion of the atmosphere, external to buildings, to which the general public has access.'' 40 CFR 50.1(e).

[41] The number of days in a given year and the number of consecutive years is of particular relevance for the ozone NAAQS, which is calculated based the annual fourth-highest daily maximum eight-hour concentration averaged over three consecutive years.

[42] MSA is defined as a geographic region with a high population density at its core and close economic ties throughout the area.

[43] The eight linked states include Illinois, 42%; Indiana, 15%; Michigan, 7%; Missouri, 6%; Texas, 5%; Wisconsin, 4%; Oklahoma, 3% and Arkansas, 4%. The remaining contribution is labeled at ''Other''. The linkages are based on the EPA's modeling results that are attached to the March 2018 memorandum.

[44] The EPA's Revised CSAPR Update, 86 FR 23054 (April 20, 2021), states ''. . . EPA adjusted its representative cost for optimizing existing SNCR control to $1,800 per ton in response to comments received on the proposed rule . . . EPA views $1,600 per ton for optimization of existing SCR control and installation of state-of-the are NO_X combustion controls and $1,800 per ton for optimization of existing SNCRs as comparable for policy purposes.'' ADEQ's screening analysis using the EPA tools (referencing the EPA's Air Pollution Control Cost Estimation Spreadsheet for SCR) shows that cost-effectiveness values for ozone-season operation of SCR and SNCR are: $12,605–$31,580/ton for SCR and $4,221–$45,581 for SNCR. ADEQ notes that any costs imposed to install controls at the examined EGUs would be passed on to Arkansas ratepayers.

state and Federal regulations were warranted for Arkansas sources to satisfy interstate transport obligations for the 2015 ozone NAAQS.

Based on the determinations made by ADEQ at Steps 1 through 3, ADEQ did not include any new control measures in the SIP submission to reduce ozone precursor emissions as part of a Step 4 analysis.

B. EPA Evaluation of the ADEQ SIP Submission

The EPA is proposing to find that ADEQ's October 10, 2019, SIP submission does not meet the State's obligations with respect to prohibiting emissions that contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state based on the EPA's evaluation of the SIP submission using the 4-Step interstate transport framework, and the EPA is therefore proposing to disapprove ADEQ's SIP submission.

1. Evaluation of Information Provided by ADEQ Regarding Step 1

At Step 1 of the 4-Step framework, ADEQ relied on the EPA modeling released in the March 2018 memorandum to identify nonattainment and maintenance receptors in 2023. As described in Section I of this action, the EPA has recently performed updated modeling using the 2016v2 platform to evaluate interstate transport of ozone for a fy 2023.[45] The EPA proposes to primarily rely on the EPA's modeling using the 2016v2 platform (EPA 2016v2 modeling), to identify projected nonattainment and maintenance receptors in fy 2023. Updating the base period from 2011 (base period used in data included in the March 2018 memorandum) to a more recent year (2016) allows for better projections of which monitors will have problems attaining and/or maintaining the 2015 ozone NAAQS and factors in more recent base year DVs. The EPA notes that with a switch from 2011 base period meteorology to 2016 base period meteorology, it is normal and expected that the potential downwind nonattainment or maintenance receptors would change due to the different weather patterns that occurred in the different base periods, which impacts both the transport of pollutants from upwind states and what receptors have higher monitored values within nonattainment/maintenance regions.[46] Modeling using both the 2011 and 2016 based years consistently project that certain areas will have problems attaining and/or maintaining the 2015 ozone NAAQS including receptors in Texas.

2. Evaluation of Information Provided by ADEQ Regarding Step 2

As noted earlier, ADEQ utilized a 1 ppb threshold at Step 2 to identify whether the State was ''linked'' to a projected downwind nonattainment or maintenance receptor. ADEQ identified linkages for Arkansas to one 2023 projected maintenance receptor, Allegan County, MI, and no 2023 projected nonattainment receptors.

As discussed in the EPA's August 2018 memorandum, with appropriate additional analysis it may be reasonable for states to use a 1 ppb contribution threshold as an alternative to a 1 percent threshold, at Step 2 of the 4-Step interstate transport framework, for the purposes of identifying linkages to downwind receptors. However, the EPA's August 2018 memorandum provided that whether or not a 1 ppb threshold is appropriate must be based on an evaluation of state-specific circumstances, and no such evaluation was included in the state's submittal. Instead, ADEQ cited to the EPA's SILs Guidance as a basis to support the use of a 1 ppb threshold; however, ADEQ did not explain the relevance of the SILs Guidance to ADEQ's statutory obligation under the interstate transport provision. The SILs Guidance relates to a different provision of the Clean Air Act regarding implementation of the prevention of significant deterioration (PSD) permitting program, *i.e.,* a program that applies in areas that have been designated attainment of the NAAQS. The SILs Guidance is not applicable to the interstate transport provision, which requires states to eliminate significant contribution or interference with maintenance of the NAAQS at known and ongoing air quality problem areas in other states. The EPA does not, in this action, agree that the State has justified its application of the 1 ppb threshold. In any case, both the EPA's most recent modeling, EPA 2016v2 modeling, and the modeling relied on by ADEQ in its SIP submittal, indicate that the State is projected to contribute greater than both the 1 percent and alternative 1 ppb thresholds. While the EPA does not, in this action, propose to approve of the State's application of the 1 ppb threshold, because the State has linkages greater than 1 ppb to projected downwind nonattainment or maintenance receptors, (as shown in Table AR–2) the State's use of this alternative threshold at Step 2 of the 4-Step interstate framework would not alter our review and proposed disapproval of this SIP submittal.

Additionally, the EPA here shares further evaluation of its experience since the issuance of the August 2018 memorandum regarding use of alternative thresholds at Step 2. This experience leads the Agency to now believe it may not be appropriate to continue to attempt to recognize alternative contribution thresholds at Step 2. The August 2018 memorandum stated that ''it may be reasonable and appropriate'' for states to rely on an alternative threshold of 1 ppb threshold at Step 2. (The memorandum also indicated that any higher alternative threshold, such as 2 ppb, would likely not be appropriate.) However, the EPA also provided that ''air agencies should consider whether the recommendations in this guidance are appropriate for each situation.'' Following receipt and review of 49 interstate transport SIP submittals for the 2015 ozone NAAQS, the EPA's experience has been that nearly every state that attempted to rely on a 1 ppb threshold did not provide sufficient information and analysis to support a determination that an alternative threshold was reasonable or appropriate for that state.

For instance, in nearly all submittals, the states did not provide the EPA with analysis specific to their state or the receptors to which its emissions are potentially linked. In one case, the proposed approval of Iowa's SIP submittal, the EPA expended its own resources to attempt to supplement the information submitted by the state, in order to more thoroughly evaluate the state-specific circumstances that could

[45] Per the instructions in the Supplementary Information section above, all public comments, including comments on the EPA's air quality modeling should be submitted in the Regional docket for this action, Docket ID No. EPA–R06–OAR–2021–0801. Comments are not being accepted in Docket No. EPA–HQ–OAR–2021–0663.

[46] We note that ADEQ identified additional modeling performed by TCEQ and Midwest Ozone Group, but simply concluded that different modeling can lead to differences in DV projections and ozone contributions of these two alternative modeling analyses, only TCEQ's modeling using a 2012 base year identified receptors in Texas that projected different DVs for the Texas receptors identified in the EPA's 2011 base year. We discuss the EPA's review of the TCEQ's modeling elsewhere in this action and the Technical Support Document for this action ''EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document'' (EPA Region 6 2015 Ozone Transport SIP TSD.pdf) included in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801), but we do conclude that TCEQ and recent monitoring data indicate that there are problematic receptors that are expected to be either nonattainment or maintenance receptors in 2023 including the Texas receptors that the EPA identified in our March 2018 memorandum with Arkansas linkages.

support approval.[47] It was at the EPA's sole discretion to perform this analysis in support of the state's submittal, and the Agency is not obligated to conduct supplemental analysis to fill the gaps whenever it believes a state's analysis is insufficient. The Agency no longer intends to undertake supplemental analysis of SIP submittals with respect to alternative thresholds at Step 2 for purposes of the 2015 ozone NAAQS.

Furthermore, the EPA's experience since 2018 is that allowing for alternative Step 2 thresholds may be impractical or otherwise inadvisable for a number of additional policy reasons. For a regional air pollutant such as ozone, consistency in requirements and expectations across all states is essential. Based on its review of submittals to-date and after further consideration of the policy implications of attempting to recognize an alternative Step 2 threshold for certain states, the Agency now believes the attempted use of different thresholds at Step 2 with respect to the 2015 ozone NAAQS raises substantial policy consistency and practical implementation concerns.[48] The availability of different thresholds at Step 2 has the potential to result in inconsistent application of interstate transport obligations based solely on the strength of a state's SIP submittal at Step 2 of the 4-Step interstate transport framework. From the perspective of ensuring effective regional implementation of interstate transport obligations, the more important analysis is the evaluation of the emissions reductions needed, if any, to address a state's significant contribution after consideration of a multifactor analysis at Step 3, including a detailed evaluation that considers air quality factors and cost. Where alternative thresholds for purposes of Step 2 may be ''similar'' in terms of capturing the relative amount of upwind contribution (as described in the August 2018 memorandum), nonetheless, use of an alternative threshold would allow certain states to avoid further evaluation of potential emission controls while other states must proceed to a Step 3 analysis. This can create significant equity and consistency problems among states.

Further, it is not clear that national ozone transport policy is best served by allowing for less stringent thresholds at Step 2. The EPA recognized in the August 2018 memorandum that there was some similarity in the amount of total upwind contribution captured (on a nationwide basis) between 1 percent and 1 ppb. However, the EPA notes that while this may be true in some sense, that is hardly a compelling basis to move to a 1 ppb threshold. Indeed, the 1 ppb threshold has the disadvantage of losing a certain amount of total upwind contribution for further evaluation at Step 3 (*e.g.,* roughly seven percent of total upwind state contribution was lost according to the modeling underlying the August 2018 memorandum; [49] in EPA 2016v2 modeling, the amount lost is five percent). Considering the core statutory objective of ensuring elimination of all significant contribution to nonattainment or interference of the NAAQS in other states and the broad, regional nature of the collective contribution problem with respect to ozone, there does not appear to be a compelling policy imperative in allowing some states to use a 1 ppb threshold while others rely on a 1 percent of NAAQS threshold.

Consistency with past interstate transport actions such as CSAPR, and the CSAPR Update and Revised CSAPR Update rulemakings (which used a Step 2 threshold of 1 percent of the NAAQS for two less stringent ozone NAAQS), is also important. Continuing to use a 1 percent of NAAQS approach ensures that as the NAAQS are revised and made more stringent, an appropriate increase in stringency at Step 2 occurs, so as to ensure an appropriately larger amount of total upwind-state contribution is captured for purposes of fully addressing interstate transport. *Accord* 76 FR 48237–38.

Therefore, notwithstanding the August 2018 memorandum's recognition of the potential viability of alternative Step 2 thresholds, and in particular, a potentially applicable 1 ppb threshold, the EPA's experience since the issuance of that memorandum has revealed substantial programmatic and policy difficulties in attempting to implement this approach. Nonetheless, the EPA is not, at this time, rescinding the August 2018 memorandum. The basis for the EPA's proposed disapproval of ADEQ's SIP submission with respect to the Step 2 analysis is, in the Agency's view, warranted even under the terms of the August 2018 memorandum. The EPA invites comment on this broader discussion of issues associated with alternative thresholds at Step 2. (See Supplementary Information section above for details and docket to submit comments). Depending on public comments received in relation to this action and further evaluation of this issue, the EPA may determine to rescind the 2018 memorandum in the future.

ADEQ included information in its SIP submission regarding back trajectories, emissions trends, and EGU cost controls to conclude that emissions from Arkansas should not be considered to contribute significantly to nonattainment or interfere with maintenance of the NAAQS in other states because there is not a persistent and consistent pattern of contribution from the State. While it is not entirely clear whether ADEQ was analyzing these factors under Step 2 or Step 3, the EPA is evaluating such arguments under Step 3, as we view these statements in the SIP submission to speak to whether or not a contribution is ''significant'' once a linkage is established.

3. Results of the EPA's Step 1 and Step 2 Modeling and Findings for Arkansas

As described in Section I of this action, the EPA performed air quality modeling using the 2016v2 emissions platform to project DVs and contributions for 2023 (EPA 2016v2 modeling). This data was examined to determine if Arkansas contributes at or above the threshold of 1 percent of the 2015 ozone NAAQS (0.70 ppb) to any downwind nonattainment or maintenance receptor. As shown in Table AR–2, the data [50] indicate that in 2023, emissions from Arkansas contribute greater than 1 percent of the standards to nonattainment or maintenance-only receptors in Texas: Denton County (Monitor ID. 481210034), Brazoria County (Monitor ID. 480391004), Harris County (Monitor ID. 482010055, Monitor ID. 482011034,

[47] ''Air Plan Approval; Iowa; Infrastructure State Implementation Plan Requirements for the 2015 Ozone National Ambient Air Quality Standard'', 85 FR 12232 (March 2, 2020). The agency received adverse comments on this proposed approval and has not taken final action with respect to this proposal.

[48] We note that Congress has placed on the EPA a general obligation to ensure the requirements of the CAA are implemented consistently across states and regions. *See* CAA section 301(a)(2). Where the management and regulation of interstate pollution levels spanning many states is at stake, consistency in application of CAA requirements is paramount.

[49] *See* August 2018 memorandum, at page 4.

[50] Design values and contributions at individual monitoring sites nationwide are provided in the file: 2016v2_DVs_state_contributions.xlsx which is included in docket ID No. EPA–HQ–OAR–2021–0663.

and Monitor ID. 482011035).[51] [52] Therefore, based on the EPA's evaluation of the information submitted by ADEQ, and based on the EPA model 2016v2 results for 2023, the EPA proposes to find that Arkansas is linked at Steps 1 and 2 and has an obligation to assess potential emissions reductions from sources or other emissions activity at Step 3 of the 4-Step framework.

TABLE AR–2—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS WITH ARKANSAS LINKAGES IN 2023 BASED ON EPA 2016V2 MODELING

Receptor (site ID, county, state)	Nonattainment/ maintenance	2023 average DV (ppb)	2023 maximum DV (ppb)	Arkansas contribution (ppb)
481210034, Denton, TX	Maintenance	70.4	72.2	0.76
480391004, Brazoria, TX	Maintenance	70.1	72.3	1.39
482010055, Harris, TX	Nonattainment	71.0	72.0	1.00
482011034, Harris, TX	Maintenance	70.3	71.6	1.38
482011035, Harris, TX	Maintenance	68.0	71.6	1.34

We recognize that the results of the EPA modeling released in the March 2018 memorandum (2011 base year) and the EPA 2016v2 modeling (2016 base year) identified different receptors and linkages at Steps 1 and 2 of the 4-Step framework. These differing results about receptors and linkages can be affected by the varying meteorology from year to year, but we do not think the differing results mean that the modeling or the EPA methodology for identifying receptors or linkages is inherently unreliable. Rather, these separate modeling runs indicated (1) that there were receptors that would struggle with nonattainment or maintenance in the future, and (2) that Arkansas was linked to some set of these receptors, even if the receptors and linkages differed from one another in their specifics (*e.g.,* a different set of receptors were identified to have nonattainment or maintenance problems, or Arkansas was linked to different receptors in one modeling run versus another). We think this common result indicates that Arkansas's emissions were substantial enough to generate linkages at Steps 1 and 2 to some set of downwind receptors, under varying assumptions and meteorological conditions, even if the precise set of linkages changed between modeling runs. Under these circumstances, we think it is appropriate to proceed to a Step 3 analysis to determine what portion of Arkansas's emissions should be deemed ''significant.'' In doing so, we are not considering our own earlier modeling results included in EPA's March 2018 memorandum to be of equal reliability relative to more recent EPA 2016v2 modeling. However, where alternative or older modeling generated linkages, even if those linkages differ from linkages in EPA 2016v2 modeling, that information provides further evidence, not less, in support of a conclusion that the state is required to proceed to Step 3 to further evaluate its emissions.

4. Evaluation of Information Provided by ADEQ Regarding Step 3

At Step 3 of the 4-Step framework, a state's emissions are further evaluated, in light of multiple factors, including air quality and cost considerations, to determine what, if any, emissions contribute significantly to nonattainment or interfere with maintenance and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

ADEQ included in their SIP submission a further analysis of its modeled linkage to Allegan, MI (the only linked receptor it analyzed, based on its application of a 1 ppb threshold). Arkansas stated that the purpose and its conclusion of this analysis was that it would not contribute significantly to the Allegan, MI monitor because the state's emissions did not result in a consistent and persistent pattern of ozone contribution. As stated earlier, EPA 2016v2 modeling projects that the Allegan County, MI receptor will be attaining and is not expected to have difficulty maintaining the standard in 2023. As such, the EPA is not relying on the comparative analysis of emissions trends that ADEQ provided in order to conclude that Arkansas's emissions do not contribute significantly to a nonattainment or maintenance problem in Allegan, MI. We note however, that ADEQ's SIP submission and response to comments do not clearly define what ADEQ considers to be persistent and consistent pattern of contribution. Rather, the SIP submission simply states that contribution should be deemed ''significant'' only if there is a persistent and consistent pattern of several days with elevated ozone.

To be clear, the modeling establishing linkages of Arkansas to downwind nonattainment and maintenance receptors already establishes that there is a consistent and persistent pattern of contribution on elevated ozone days from Arkansas to other states. That is because EPA's methodology for projecting future year ozone concentrations accounts for precisely these concerns—the relative response factor[53] that is applied to historic monitored data to generate projections is calculated by looking only at days with elevated ozone levels (ten days is preferred with a minimum of five days). The EPA notes that monitored attainment with the ozone standard is determined by averaging the fourth high value recorded each year for three years. So, the EPA believes it is important to

[51] These modeling results are consistent with the results of a prior round of 2023 modeling using the 2016v1 emissions platform which became available to the public in the fall of 2020 in the Revised CSAPR Update, as noted in Section I of this action. That modeling showed that Arkansas had a maximum contribution greater than 0.70 ppb to at least one nonattainment or maintenance-only receptor in 2023. These modeling results are included in the file ''Ozone Design Values And Contributions Revised CSAPR Update.xlsx'' in docket EPA–HQ–OAR–2021–0663.

[52] Allegan County Monitor ID. 260050003 is not a receptor in 2023 in the EPA 2016v2 modeling. 2023 avg DV is 67.3 ppb and 2023 Max. DV is 68.4 ppb, so the Allegan County monitor is not a receptor in 2023 for nonattainment or maintenance.

[53] The relative response factor (RRF) is a ratio developed using the modeled changes between the base case and future case for high ozone modeled days. Typically, the 10 highest MDA8 modeled days in the base case are found and the maximum value from the 3x3 grid centered on the monitor for each day is used to calculate a 10-day average base case modeled value. Then a similar concentration average is developed for same 10 base case days and the same grid cell that provided the base case concentration to calculate a future year 10-day average modeled value using the future year modeling results. The RRF is then calculated by using this future year 10-day average model value divided by the base case year 10-day average model value to develop a ratio representing the change in modeled ozone. The RRF is then multiplied times the base DV value to result in a projected future year DV.

estimate impacts on the days with highest projected ozone levels. The EPA's approach, as detailed in the Air Quality Modeling Technical Support Document for 2015 Ozone NAAQS Transport SIP Proposed Actions included in Docket ID No. EPA–HQ–OAR–2021–0663, does this by estimating the average fy 2023 impact from an upwind state on the days with the highest projected ozone levels at the downwind nonattainment or maintenance receptor. The days chosen to analyze the future impacts are chosen initially by the selecting the ten highest days in the base period modeling that are projected to be above 65 ppb in the base period. If there are not ten days above 65 ppb at a potential receptor, the number of days above 65 ppb are used as long as there is at least five days above 65 ppb in the base period. If the air quality modeling shows fewer than five days above 65 ppb in the base period, then the data for impacts at that receptor in fy 2023 are not calculated. The base and future year modeling for these five to ten days is then used to project fy 2023 ozone DVs to determine whether it is projected to be a nonattainment or maintenance receptor in 2023. For the same five to ten days identified, the future year modeling provides the estimated daily contribution at a potential receptor's future year daily MDA8 and these daily contributions are averaged for the five to ten days to result in the average contribution from the upwind area.

As mentioned previously, ADEQ used HYSPLIT back trajectories to assess wind patterns on elevated ozone days in an attempt to demonstrate that there is not persistent and consistent pattern of contribution from Arkansas to the Allegan County, MI receptor. HYSPLIT back trajectory analyses use archived meteorological modeling that includes actual observed data (surface, upper air, airplane data, etc.) and modeled meteorological fields to estimate the most likely route of an air parcel transported to a receptor at a specified time. The method essentially follows a parcel of air backward in hourly steps for a specified length of time. HYSPLIT estimates the central path in both the vertical and horizontal planes. The HYSPLIT central path represents the centerline with the understanding that there are areas on each side horizontally and vertically that also contribute to the concentration at the end point monitor. The horizontal and vertical areas that potentially contribute to the end point concentration grow wider from the centerline the further back in time the trajectory goes. Therefore, a HYSPLIT centerline does not have to pass directly over emissions sources or emission source areas but merely relatively near emission source areas for those areas to contribute to concentrations at the endpoint. The EPA relies on back trajectory analysis as a corollary analysis along with observation-based meteorological wind fields at multiple heights to examine the general plausibility of the photochemical model ''linkages.'' Since the back trajectory calculations do not account for any air pollution formation, dispersion, transformation, or removal processes as influenced by emissions, chemistry, deposition, etc., the trajectories cannot be used to develop quantitative contributions. Therefore, back trajectories cannot be used to quantitatively evaluate the magnitude of the existing photochemical contributions from upwind states to downwind receptors. Chemical transport models, such as the one relied upon by Arkansas to establish the linkage between Arkansas and those downwind receptors in the first instance, do take these factors into account and therefore provide a more robust assessment of ozone contribution.

During ADEQ's public comment period, the EPA submitted comments noting concerns regarding the methodology ADEQ used in their HYSPLIT back trajectories analysis.[54] While we are not providing a detailed evaluation of ADEQ's HYSPLIT analysis in this rulemaking, we do note that our review identified a number of concerns with how ADEQ screened out a number of back trajectories, which invalidates ADEQ's conclusions.[55] While we disagree with ADEQ's methodologies and conclusions, we note that ADEQ's HYSPLIT back trajectory information did not show that the base years used in the EPA modeling (2011 and 2016) demonstrated an unusual amount of transport of air parcels from Arkansas to nonattainment or maintenance receptors in downwind states (*i.e.,* the modeling years used by the EPA do not skew the results toward finding linkages).[56] Therefore, although Arkansas asserted that its additional air quality factor analysis using back trajectory analysis is a permissible way to interpret which contributions are ''significant'' because that analysis examines whether there was a ''persistent and consistent pattern of contribution on several days with elevated ozone,'' the modeled linkage at Step 2 is a superior approach for assessing the persistence of a state's contribution. It is superior because it is based on the average of the contributions on the five to ten highest ozone days. Considering the form of the standard, this is a sufficient number of days to determine if an impact is persistent enough to impact an area's ability to attain or maintain the standard. The modeling is also a better method because it accounts for dispersion while back trajectory analysis as performed by Arkansas only shows the centerline of air parcel travel and otherwise will leave out days when Arkansas would have contributed to downwind problems. Finally, because the modeling accounts for dispersion and chemical reactions, it can provide a quantitative estimate of contribution.

ADEQ also contested the significance of its modeled contribution above 1 ppb based on the relatively larger contributions of other upwind states to the receptor to which it was linked. The EPA disagrees that a state's small contribution relative to other upwind states is a permissible basis for finding no obligation under the interstate transport provision. CAA 110(a)(2)(D)(i)(I) requires states and the EPA to address interstate transport of air pollution that *contributes to* downwind states' ability to attain and maintain the NAAQS. Whether emissions from other states also contribute to the same downwind air quality issue is irrelevant in assessing whether a downwind state has an air quality problem, or whether an upwind state is significantly contributing to that problem. States are not obligated under CAA section 110(a)(2)(D)(i)(I) to reduce emissions sufficient on their own to resolve

[54] The EPA reviewed the ADEQ SIP submission and provided comments during the State's public comment period for the proposed SIP action. The EPA's comment letter and ADEQ's response to comments are included in ADEQ's October 19, 2019, SIP submission, which is available in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801).

[55] Concerns included removing of HYSPLIT back trajectories based on start height, the start time that Arkansas used for the back trajectories and removing of back trajectories when the centerline passed near but not through Arkansas because Arkansas has some very large point sources near the Arkansas state line that could be contributing. Texas also screened their HYPSLIT back trajectories similarly to Arkansas and we have further discussed our concerns and why such screening invalidates conclusions from the HYSPLIT back trajectory analyses. *See* EPA's review and conclusions in discussion of TCEQ's HYSPLIT analyses in the ''EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document'' (EPA Region 6 2015 Ozone Transport SIP TSD.pdf) included in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801).

[56] ADEQ's summary of trajectories indicated that 2011 had three linked back trajectories and 2016 had one linked back trajectories and the EPA calculated the average for 2008–2017 in ADEQ's table was 2.2 linked back trajectories per year.

downwind receptors' nonattainment or maintenance problems. Rather, states are obligated to eliminate their own ''significant contribution'' or ''interference'' with the ability of other states to attain or maintain the NAAQS. Indeed, the D.C. Circuit in *Wisconsin* specifically rejected arguments suggesting that upwind states should be excused from interstate transport obligations on the basis that some other source of emissions (whether international or another upwind state) could be considered the ''but-for'' cause of downwind air quality problem. 938 F.3d 303 at 323–324. The court viewed these arguments as essentially an argument ''that an upwind State 'contributes significantly' to downwind nonattainment only when its emissions are the sole cause of downwind nonattainment.'' 938 F.3d 303 at 324. The court explained that ''an upwind State can 'contribute' to downwind nonattainment even if its emissions are not the but-for cause.'' *Id.* At 324–325. *See also Catawba County* v. *EPA,* 571 F.3d 20, 39 (D.C. Cir. 2009) (rejecting the argument ''that 'significantly contribute' unambiguously means 'strictly cause''' because there is ''no reason why the statute precludes EPA from determining that [an] addition of [pollutant] into the atmosphere is significant even though a nearby county's nonattainment problem would still persist in its absence''); *Miss. Comm'n on Envtl. Quality* v. *EPA,* 790 F.3d 138, 163 n.12 (D.C. Cir. 2015) (observing that the argument that ''there likely would have been no violation at all . . . if it were not for the emissions resulting from [another source]'' is ''merely a rephrasing of the but-for causation rule that we rejected in *Catawba County*.''). Therefore, a state is not excused from eliminating its significant contribution on the basis that emissions from other states also contribute some amount of pollution to the same receptors to which the state is linked.

ADEQ did not provide additional analysis for other receptors to which it was linked above 1 percent in the air quality modeling upon which it relied, and to which it continues to be linked in EPA 2016v2 modeling. To effectively evaluate which emissions in the state should be deemed ''significant'' and therefore prohibited, states generally should prepare an accounting of sources and other emissions activity for relevant pollutants and assess potential, additional emissions reduction opportunities and resulting downwind air quality improvements. The EPA has consistently applied this general approach (*i.e.,* Step 3 of the 4-Step interstate transport framework) when identifying emissions contributions that the Agency has determined to be ''significant'' (or interfere with maintenance) in each of its prior Federal, regional ozone transport rulemakings, and this interpretation of the statute has been upheld by the Supreme Court. *See EME Homer City,* 572 U.S. 489, 519 (2014). While the EPA has not directed states that they must conduct a Step 3 analysis in precisely the manner the EPA has done in its prior regional transport rulemakings, state implementation plans addressing the obligations in CAA section 110(a)(2)(D)(i)(I) must prohibit ''any source or other type of emissions activity within the State'' from emitting air pollutants which will contribute significantly to downwind air quality problems. Thus, states must complete something similar to the EPA's analysis (or an alternative approach to defining ''significance'' that comports with the statute's objectives) to determine whether and to what degree emissions from a state should be ''prohibited'' to eliminate emissions that will ''contribute significantly to nonattainment in, or interfere with maintenance of'' the NAAQS in any other state. As discussed below, ADEQ did not conduct an adequate analysis in their SIP submission. We therefore propose that ADEQ was required to analyze emissions from the sources and other emissions activity from within the State to determine whether its contributions were significant, and we propose to disapprove its submission because Arkansas failed to adequately do so.

In analyzing potential additional NO_X controls, ADEQ found that additional controls on its EGUs would exceed the cost-effectiveness thresholds identified in the CSAPR and CSAPR Update rules. For the cost analysis, Arkansas only focused on the potential costs of NO_X controls for EGUs. As stated above, Arkansas found that the costs to install additional NO_X controls (selective catalytic reduction, SCR, and selective noncatalytic reduction, SNCR) at electric generating units (EGUs) exceed EPA's cost thresholds used for the CSAPR and CSAPR Update rules. Based on the projected cost of these controls relative to the thresholds used in those two prior EPA rules, Arkansas concluded that no new controls beyond those Federal and State regulations already in existence were cost-effective, especially considering that Allegan County, MI is projected to be in attainment with the 2015 ozone NAAQS and Arkansas's small contribution relative to other states potentially linked to Allegan County, MI based on EPA's modeling.

Arkansas's analysis is inadequate because its focus is only on EGUs.[57] *See Wisconsin,* 938 F.3d at 318–20. We also find Arkansas's conclusions as to the availability of cost-effective controls for EGUs to be inadequate. Relying on the CSAPR Update's (or any other CAA program's) determination of cost-effectiveness without further Step 3 analysis is not approvable. Cost-effectiveness must be assessed in the context of the specific CAA program; assessing cost-effectiveness in the context of ozone transport should reflect a more comprehensive evaluation of the nature of the interstate transport problem, the total emissions reductions available at several cost thresholds, and the potential air quality impacts of those reductions at downwind receptors. While the EPA has not established a benchmark cost-effectiveness value for 2015 ozone NAAQS interstate transport obligations, because the 2015 ozone NAAQS is a more stringent and more protective air quality standard, it is reasonable to expect control measures or strategies to address interstate transport under this NAAQS to reflect higher marginal control costs. ADEQ's submission failed to provide a justification for why the $1400/ton threshold used in the CSAPR Update is appropriate to rely on for the 2015 ozone NAAQS. ADEQ's analysis does not consider any air quality impacts of assessed controls at downwind receptors. As stated above, assessing cost-effectiveness in the context of ozone transport requires more than just assessing the cost of controls per ton of NO_X removed. As such, ADEQ's assessment of the cost of controls and reliance on the marginal cost threshold of $1,400/ton used for the CSAPR Update is inadequate. Furthermore, EPA 2016v2 modeling captures all existing CSAPR trading programs in the baseline and confirms that these control programs were not sufficient to eliminate Arkansas's linkage at Steps 1 and 2 under the 2015 ozone NAAQS. The State was therefore obligated at Step 3 to assess *additional* control measures using a multifactor analysis.

[57] In 2017, National Emission Inventory (NEI) NO_X emissions from EGU sources represent 56% percent of the total NOx emissions categories in Arkansas that report emissions to the NEI. *See* AR NOx.xlsx datasheet included in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801).

5. Evaluation of Information Provided by ADEQ Regarding Step 4

Step 4 of the 4-Step interstate transport framework calls for the development of permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. ADEQ's SIP submission, which looked only at additional NO_X controls at EGUs and dismissed such controls as not cost-effective relative to the thresholds established in earlier EPA transport rules, did not constitute an adequate emission reduction analysis at Step 3. Based on its conclusions, ADEQ did not revise its SIP to include any emission reductions. As a result, the EPA proposes to disapprove ADEQ's submittal on the separate, additional basis that Arkansas has not developed or included permanent and enforceable emissions reductions in its SIP necessary to meet the obligations of CAA section 110(a)(2)(D)(i)(I).

6. Conclusion

Based on the EPA's evaluation of ADEQ's SIP submission, the EPA is proposing to find that ADEQ's October 19, 2019, SIP submission addressing CAA section 110(a)(2)(D)(i)(I) does not meet the State's interstate transport obligations because it fails to contain the necessary provisions to eliminate emissions that will contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state.

III. Louisiana SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS and the EPA Evaluation of the SIP Submission

A. Summary of LDEQ SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS

On November 13, 2019, the Louisiana Department of Environmental Quality (LDEQ) made a SIP submission addressing the State of Louisiana's interstate transport of air pollution for the 2015 ozone NAAQS. The SIP submission provided LDEQ's analysis of Louisiana's impact to downwind states and concluded that emissions from Louisiana will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states.

The LDEQ's SIP submission provided an analysis of Louisiana's air emissions impact to downwind states using a 3-Step alternative framework similar to the EPA's 4-Step framework. LDEQ's 3-Step alternative framework includes: Step 1: Identify monitors projected to be in nonattainment or have maintenance issues in a future year; Step 2: Identify projected nonattainment and/or maintenance monitors in other states that might be impacted by emissions from Louisiana, tagging them for further review; and, Step 3: Determine if emissions from Louisiana contribute significantly to nonattainment or interfere with maintenance at the monitors tagged for review in Step 2. LDEQ noted that its Step 1 is identical to the EPA's Step 1, and its Steps 2 and 3 are equivalent to the EPA's Step 2. Louisiana further noted that Steps 3 and 4 of the EPA's 4-Step framework are relevant only if emissions from Louisiana contribute significantly to nonattainment or interfere with maintenance at downwind monitors in another state.

LDEQ's Step 1 was to identify downwind monitors projected to be in nonattainment and/or have maintenance issues in future year 2023 (fy 2023). At this step, LDEQ relied on the EPA's interstate transport modeling results that are included as an attachment to the March 2018 memorandum. The EPA March 2018 modeling results provided: (1) Projected average DV and maximum DV for 2023 for the ozone monitors (or ''receptors'') in the 48 contiguous states and (2) the expected contribution of state emissions to the projected ozone concentrations at each ozone monitor.

LDEQ used a contribution threshold of 1 ppb in LDEQ's Step 2 to identify projected nonattainment and/or maintenance receptors in other states that might be impacted by emissions from Louisiana and tagged them for further review. To support a 1 ppb contribution threshold, LDEQ's submission stated that a 1 percent threshold is inappropriate because that value is not detectable by a monitor and the value of 1 percent of the 2015 ozone NAAQS would be truncated to zero if calculated in accordance with the method for determining DVs for the ozone NAAQS. LDEQ also stated that the more stringent threshold of 1 percent of the NAAQS (0.7 ppb) is an order of magnitude smaller than the biases and errors typically documented for regional photochemical modeling.[58] Based on LDEQ's approach of evaluating linkages at the 1 ppb threshold, five Texas receptors were identified by Louisiana for analysis. The Texas receptors and corresponding receptor data presented in Louisiana's SIP are summarized further in this notice in Table LA–1.[59] The March 2018 memorandum identified monitors in Allegan, Michigan and Milwaukee and Sheboygan, Wisconsin as potential nonattainment and maintenance-only receptors linked to emissions from Louisiana based on 1 percent of the NAAQS threshold. However, Louisiana did not include the Allegan, Michigan and Milwaukee and Sheboygan, Wisconsin receptors in the State's analysis because the March 2018 memorandum shows that Louisiana's projected modeled contribution values to each receptor is less than 1 ppb.

TABLE LA–1—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS IDENTIFIED BY LOUISIANA BASED ON THE EPA'S MARCH 2018 MEMORANDUM

Receptor (site ID, county, state)	2023 Average DV (ppb) [60]	2023 Maximum DV (ppb) [61]	Louisiana Contribution (ppb)
480391004, Brazoria, TX	74.0	74.9	3.80

[58] The Louisiana SIP submittal did not provide a specific citation to the Simon et al., 2012 reference to support this assertion. However, we believe the reference is associated with the following article: Simon, H., Baker, K.R., Phillips, S., 2012. ''Compilation and interpretation of photochemical model performance statistics published between 2006 and 2012''. Atmospheric Environment 61, 124–139.

[59] The five potential nonattainment and maintenance receptor monitors identified by LDEQ are from the Dallas-Fort Worth and Houston-Galveston-Brazoria, TX nonattainment areas for the 2015 ozone NAAQS. The Louisiana SIP submittal appears to have inadvertently omitted Harris County, TX Monitor ID No. 482011034 for analysis. EPA's March 2018 memorandum identified this monitor as a maintenance receptor with a contribution of 3.38 ppb from Louisiana emissions.

TABLE LA–1—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS IDENTIFIED BY LOUISIANA BASED ON THE EPA'S MARCH 2018 MEMORANDUM—Continued

Receptor (site ID, county, state)	2023 Average DV (ppb) [60]	2023 Maximum DV (ppb) [61]	Louisiana Contribution (ppb)
482011039, Harris, TX	71.8	73.5	4.72
484392003, Tarrant, TX	72.5	74.8	1.71
481210034, Denton, TX	69.7	72.0	1.92
482010024, Harris, TX	70.4	72.8	4.72

ForLDEQ's Step 3, Louisiana stated that an air emission contribution from the State should only be considered significant if there is a persistent and consistent pattern of contribution on several days with elevated ozone. In trying to determine whether there is a persistent and consistent pattern of contribution, LDEQ analyzed seasonal weather patterns, surface wind directions, and periodic back trajectories. LDEQ used the National Oceanic and Atmospheric Administration (NOAA) Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) [62] model to perform 99 back trajectories for exceedances from the receptor monitors identified in Table LA–1 for 2016, 2017, and 2018. Based on an analysis of the HYSPLIT results, LDEQ stated that approximately 28% of the trajectories travel in or through Louisiana, and only 8% of those back trajectories originate in the State. The SIP submission also stated that a comparison of the EPA's modeled contribution between Texas and Louisiana monitors indicates that a far greater proportion of the total ozone detected in Louisiana originates in Texas rather than vice versa. Therefore, Louisiana concluded that the impact from the State's air emissions was insignificant to the overall attainment at the receptor monitors identified in Table LA–1 and does not significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states.

B. EPA Evaluation of the LDEQ SIP Submission

The EPA is proposing to find that LDEQ's November 13, 2019, SIP submission does not meet the State's obligations with respect to prohibiting emissions that contribute significantly to nonattainment or interfere with maintenance of the 2015 NAAQS in any other state based on the EPA's evaluation of the SIP submission using the 4-Step interstate transport framework, and the EPA is therefore proposing to disapprove Louisiana's SIP submission.

1. Evaluation of Information Provided by LDEQ Regarding Steps 1 and 2

At Step 1 of the 4-Step interstate transport framework, LDEQ relied on EPA modeling released in the March 2018 memorandum to identify nonattainment and maintenance receptors in 2023. At Step 2 of the 4-Step interstate transport framework, LDEQ relied on the EPA modeling released in the March 2018 memorandum to identify upwind state linkages to nonattainment and maintenance receptors in 2023. LDEQ additionally utilized a 1 ppb threshold at Step 2 to identify whether the state was ''linked'' to a projected downwind nonattainment or maintenance receptor. As discussed in the EPA's August 2018 memorandum, with appropriate additional analysis it may be reasonable for states to use a 1 ppb contribution threshold, as an alternative to a 1 percent threshold, at Step 2 of the 4-Step interstate transport framework, for the purposes of identifying linkages to downwind receptors. In any case, the State is projected to contribute greater than both the 1 percent and the alternative 1 ppb thresholds to receptors in Texas, regardless of whether we look at LDEQ's analysis (which relied on the EPA's older modeling) or updated modeling the EPA has performed in advance of this proposal. As seen in the tables LA–1 and LA–2, Louisiana contributes nearly five times the 1 ppb threshold to nonattainment or maintenance receptors in Texas. Therefore, while the EPA does not, in this action, approve of the State's application of the 1 ppb threshold, because the State has linkages greater than 1 ppb to projected downwind nonattainment or maintenance receptors, the State's use of this alternative threshold at Step 2 of the 4-Step interstate framework would not alter our review and proposed disapproval of this SIP submittal.

The EPA here shares further evaluation of its experience since the issuance of the August 2018 memorandum regarding use of alternative thresholds at Step 2. This experience leads the Agency to now believe it may not be appropriate to continue to attempt to recognize alternative contribution thresholds at Step 2. The August 2018 memorandum stated that ''it may be reasonable and appropriate'' for states to rely on an alternative threshold of 1 ppb threshold at Step 2.[63] (The memorandum also indicated that any higher alternative threshold, such as 2 ppb, would likely not be appropriate.) However, the EPA also provided that ''air agencies should consider whether the recommendations in this guidance are appropriate for each situation.'' Following receipt and review of 49 interstate transport SIP submittals for the 2015 ozone NAAQS, the EPA's experience has been that nearly every state that attempted to rely on a 1 ppb threshold did not provide sufficient information and analysis to support a determination that an alternative threshold was reasonable or appropriate for that state.

For instance, in nearly all submittals, the states did not provide the EPA with analysis specific to their state or the receptors to which its emissions are potentially linked. In one case, the proposed approval of Iowa's SIP submittal, the EPA expended its own resources to attempt to supplement the information submitted by the state, in order to more thoroughly evaluate the state-specific circumstances that could support approval.[64] The Agency no longer intends to undertake supplemental analysis of SIP submittals with respect to alternative thresholds at Step 2 for purposes of the 2015 ozone NAAQS.

Furthermore, the EPA's experience since 2018 is that allowing for alternative Step 2 thresholds may be

[60] Information added from the EPA's March 2018 memorandum.

[61] *Id.*

[62] *See* FN 34.

[63] *See* August 2018 memorandum, at page 4.

[64] ''Air Plan Approval; Iowa; Infrastructure State Implementation Plan Requirements for the 2015 Ozone National Ambient Air Quality Standard'', 85 FR 12232 (March 2, 2020). The Agency received adverse comments on this proposed approval and has not taken final action with respect to this proposal.

impractical or otherwise inadvisable for a number of additional policy reasons. For a regional air pollutant such as ozone, consistency in requirements and expectations across all states is essential. Based on its review of submittals to-date and after further consideration of the policy implications of attempting to recognize an alternative Step 2 threshold for certain states, the Agency now believes the attempted use of different thresholds at Step 2 with respect to the 2015 ozone NAAQS raises substantial policy consistency and practical implementation concerns.[65] The availability of different thresholds at Step 2 has the potential to result in inconsistent application of interstate transport obligations based solely on the strength of a state's SIP submittal at Step 2 of the 4-Step interstate transport framework. From the perspective of ensuring effective regional implementation of interstate transport obligations, the more important analysis is the evaluation of the emissions reductions needed, if any, to address a state's significant contribution after consideration of a multifactor analysis at Step 3, including a detailed evaluation that considers air quality factors and cost. Where alternative thresholds for purposes of Step 2 may be ''similar'' in terms of capturing the relative amount of upwind contribution (as described in the August 2018 memorandum), nonetheless, use of an alternative threshold would allow certain states to avoid further evaluation of potential emission controls while other states must proceed to a Step 3 analysis. This can create significant equity and consistency problems among states.

Further, it is not clear that national ozone transport policy is best served by allowing for less stringent thresholds at Step 2. The EPA recognized in the August 2018 memorandum that there was some similarity in the amount of total upwind contribution captured (on a nationwide basis) between 1 percent and 1 ppb. However, the EPA notes that while this may be true in some sense, that is not a compelling basis to move to a 1 ppb threshold. Indeed, the 1 ppb threshold has the disadvantage of losing a certain amount of total upwind contribution for further evaluation at Step 3 (*e.g.,* roughly seven percent of total upwind state contribution was lost according to the modeling underlying the August 2018 memorandum;[66] in the EPA's updated modeling, the amount lost is five percent). Considering the core statutory objective of ensuring elimination of all significant contribution to nonattainment or interference of the NAAQS in other states and the broad, regional nature of the collective contribution problem with respect to ozone, there does not appear to be a compelling policy imperative in allowing some states to use a 1 ppb threshold while others rely on a 1 percent of NAAQS threshold.

Consistency with past interstate transport actions such as CSAPR, and the CSAPR Update and Revised CSAPR Update rulemakings (which used a Step 2 threshold of 1 percent of the NAAQS for two less stringent ozone NAAQS), is also important. Continuing to use a 1 percent of NAAQS approach ensures that as the NAAQS are revised and made more stringent, an appropriate increase in stringency at Step 2 occurs, so as to ensure an appropriately larger amount of total upwind-state contribution is captured for purposes of fully addressing interstate transport. *Accord* 76 FR 48237–38.

Therefore, notwithstanding the August 2018 memorandum's recognition of the potential viability of alternative Step 2 thresholds, and in particular, a potentially applicable 1 ppb threshold, the EPA's experience since the issuance of that memorandum has revealed substantial programmatic and policy difficulties in attempting to implement this approach. Nonetheless, the EPA is not at this time rescinding the August 2018 memorandum. The basis for a proposed disapproval of LDEQ's SIP submission with respect to the Step 2 analysis we believe is warranted under the terms of the August 2018 memorandum. The EPA invites comment on this broader discussion of issues associated with alternative thresholds at Step 2. Depending on public comments received and further evaluation of this issue, the EPA may determine to rescind the 2018 memorandum in the future.

2. Results of the EPA's Step 1 and Step 2 Modeling and Findings for Louisiana

As described in Section I of this action, the EPA performed air quality modeling using the 2016v2 emissions platform to project DVs and contributions for 2023.[67] This data was examined to determine if Louisiana contributes at or above the threshold of 1 percent of the 2015 ozone NAAQS (0.70 ppb) to any downwind nonattainment or maintenance receptor. As shown in Table LA–2, the data[68] indicate that in 2023, emissions from Louisiana contributed greater than 1 percent of the standards to nonattainment or maintenance-only receptors in Texas.[69] Therefore, based on the EPA's evaluation of the information submitted by LDEQ, and based on the EPA's most recent modeling results for 2023, the EPA proposes to find that Louisiana is linked at Steps 1 and 2 and has an obligation to assess potential emissions reductions from sources or other emissions activity at Step 3 of the 4-Step framework.

TABLE LA–2—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS WITH LOUISIANA LINKAGES BASED ON EPA 2016V2 MODELING

Receptor (site ID, county, state)	Nonattainment/ maintenance	2023 Average DV (ppb)	2023 Maximum DV (ppb)	Louisiana Contribution (ppb)
482010024, Harris, TX	Nonattainment	75.2	76.8	4.31
482010055, Harris, TX	Nonattainment	71.0	72.0	5.39
480391004, Brazoria, TX	Maintenance	70.1	72.3	7.03

[65] We note that Congress has placed on the EPA a general obligation to ensure the requirements of the CAA are implemented consistently across states and regions. *See* CAA section 301(a)(2). Where the management and regulation of interstate pollution levels spanning many states is at stake, consistency in application of CAA requirements is paramount.

[66] *See* August 2018 memorandum, at page 4.

[67] Per the instructions in the Supplementary Information section above, all public comments, including comments on the EPA's air quality modeling should be submitted in the Regional docket for this action, Docket ID No. EPA–R06–OAR–2021–0801. Comments are not being accepted in Docket No. EPA–HQ–OAR–2021–0663.

[68] DVs and contributions at individual monitoring sites nationwide are provided in the file: ''2016v2_DVs_state_contributions.xlsx'', which is included in Docket ID No. EPA–HQ–OAR–2021–0663.

[69] These modeling results are consistent with the results of a prior round of 2023 modeling using the 2016v1 emissions platform, which became available to the public in the fall of 2020 in the Revised CSAPR Update, as noted in Section I of this action. That modeling showed that Louisiana had a maximum contribution greater than 0.70 ppb to at least one nonattainment or maintenance-only receptor in 2023. These modeling results are included in the file ''Ozone DVs And Contributions Revised CSAPR Update.xlsx'' in Docket No. EPA–HQ–OAR–2021–0663.

TABLE LA–2—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS WITH LOUISIANA LINKAGES BASED ON EPA 2016V2 MODELING—Continued

Receptor (site ID, county, state)	Nonattainment/ maintenance	2023 Average DV (ppb)	2023 Maximum DV (ppb)	Louisiana Contribution (ppb)
481210034, Denton, TX	Maintenance	70.4	72.2	3.22
482011034, Harris, TX	Maintenance	70.3	71.6	4.93
482011035, Harris, TX	Maintenance	68.0	71.6	4.77

3. Evaluation of Information Provided by LDEQ Regarding Step 3

At Step 3 of the 4-Step interstate transport framework, a state's emissions are further evaluated, in light of multiple factors, including air quality and cost considerations, to determine what, if any, emissions contribute significantly to nonattainment or interfere with maintenance and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

To effectively evaluate which emissions in the state should be deemed ''significant'' and therefore prohibited, states generally should prepare an accounting of sources and other emissions activity for relevant pollutants and assess potential, additional emissions reduction opportunities and resulting downwind air quality improvements. The EPA has consistently applied this approach (*i.e.,* Step 3 of the 4-Step interstate transport framework) when identifying emissions contributions that the Agency has determined to be ''significant'' (or interfere with maintenance) in each of its prior Federal, regional ozone transport rulemakings, and this interpretation of the statute has been upheld by the Supreme Court. *See EME Homer City,* 572 U.S. 489, 519 (2014). While the EPA has not directed states that they must conduct a Step 3 analysis in precisely the manner the EPA has done in its prior regional transport rulemakings, state implementation plans addressing the obligations in CAA section 110(a)(2)(D)(i)(I) must prohibit ''any source or other type of emissions activity within the State'' from emitting air pollutants which will contribute significantly to downwind air quality problems. Thus, states must complete an analysis similar to the EPA's (or an alternative approach to defining ''significance'' that comports with CAA requirements) to determine whether, and to what degree, emissions from a state should be ''prohibited'' to eliminate emissions that will ''contribute significantly to nonattainment, or interfere with maintenance of'' the NAAQS in any other state. LDEQ did not conduct such an analysis in their SIP submission. Instead LDEQ interpreted the Act's requirements as only requiring an analysis of emission reductions where there was a ''consistent and persistent'' pattern of contribution and conducted an air-quality-only analysis in order to refute such a pattern. We propose to find that LDEQ was required to analyze emissions from the sources and other emissions activity from within Louisiana to determine whether its contributions were significant, and we propose to disapprove its submission because LDEQ did not do so.

As noted, LDEQ stated in its SIP submission that emissions from Louisiana should not be considered to contribute significantly to nonattainment or interfere with maintenance of the NAAQS in other states because there is not a ''persistent and consistent'' pattern of contribution from the State. The SIP submission does not explain what LDEQ considers to be a persistent and consistent pattern of contribution, even after the LDEQ received a comment during its state comment period that requested that the LDEQ define ''persistent and consistent'' in terms of impacts on downwind states. The LDEQ responded, ''Louisiana has defined the pattern and has provided back trajectories on those monitored exceedances for the 2016–2018 ozone seasons, which will show that the definition is applicable to the conclusion.'' [70] We do not agree that this suffices as an explanation as to why LDEQ does not need to further analyze its potential emission reductions under Step 3 before determining it has no statutory obligation under the interstate transport provision. In the case of Louisiana, modeling in the March 2018 memorandum and the EPA's more recent 2016v2 modeling both project that receptors in the Houston-Galveston-Brazoria (HGB) and Dallas-Fort Worth (DFW) ozone nonattainment areas in Texas will have difficulty attaining or maintaining the 2015 ozone NAAQS, and Louisiana's contribution to these areas exceed both a 1 percent or a 1 ppb threshold. While linkages to specific receptors may change with updated modeling, both modeling analyses consistently show emissions from Louisiana impact both downwind nonattainment receptors and downwind maintenance receptors in Texas.

The LDEQ SIP submission stated that Louisiana's contribution should be deemed ''significant'' per CAA section 110(a)(2)(D)(i)(I) only if there is a persistent and consistent pattern of contribution on several days with elevated ozone. LDEQ asserted that its linkages to Texas do not warrant further analysis because, according to LDEQ, emissions from Louisiana do not persistently and consistently contribute on several days of elevated ozone. However, the EPA modeling that LDEQ relied upon to demonstrate linkages in the first instance already establishes that there is a consistent and persistent pattern of contribution from Louisiana to Texas receptors on elevated ozone days. The EPA's methodology for projecting future year ozone concentrations accounts for precisely these concerns—the relative response factor [71] that is applied to historic monitored data to generate projections is calculated by looking only at days with elevated ozone levels. The EPA notes that monitored attainment with the ozone standard is determined by averaging the fourth high value recorded each year for three years. So, the EPA believes it is important to estimate impacts on the days with highest projected ozone levels. The days chosen to analyze the future impacts are chosen initially by the selecting the 10 highest days in the base period modeling that are projected to be above 65 ppb in the base period. If there are not 10 days above 65 ppb at a potential receptor, the number of days above 65 ppb are used so long as there is at least five days above 65 ppb in the base period. If the air quality modeling shows fewer than five days above 65 ppb in the base period, then the data for impacts at that receptor in 2023 are not calculated. The base and future year modeling for these

[70] *See* LDEQ SIP Submission, Appendix A, available in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801).

[71] *See* FN 53.

5–10 days are then used to project 2023 ozone DVs to determine whether it is projected to be a nonattainment or maintenance receptor in 2023. For these same 5–10 days identified, the future year modeling provides the estimated daily contribution at a potential receptor's future year daily MDA8 and these daily contributions are averaged for the 5–10 days to result in the average contribution from the upwind area.

LDEQ's air quality analysis used to dismiss its linkages to Texas receptors as not ''significant'' consists of an evaluation of seasonal weather patterns, surface wind directions, and periodic back trajectories. The State's weather pattern analysis relied on large-scale weather patterns as they relate to commonly observed wind directions rather than weather patterns and conditions that are specifically conducive to ozone formation or tied to specific days when high ozone was monitored in the downwind areas. General weather pattern discussions that are not associated with specific ozone episodes are not generally informative of interstate transport decisions. It is necessary to investigate specific instances of high ozone, because as discussed previously, violations of the ozone standard can be driven by as few as 4 days per year because the compliance with the standard is evaluated based on the average of the fourth high value measured each of three consecutive years.

LDEQ's wind rose analysis is based on surface sites in the Dallas-Fort Worth areas, Houston-Galveston-Brazoria areas, and other areas in Texas and Louisiana, but the analysis does not address transport winds between Louisiana and the Texas areas with receptors on high ozone days at the identified receptors. There are several limitations associated with LDEQ's wind rose analysis: (1) Wind directions measured at the surface are not necessarily good indicators of the wind direction occurring at higher elevations, which tend to have a stronger influence on interstate ozone transport; (2) wind directions change spatially over the range of distance involved in transport from Louisiana to Texas; (3) wind directions change temporally over the range of time involved in ozone transport from Louisiana to Texas; and (4) the wind roses are based on wind data measured throughout the year, not just during either ozone season or monitored ozone episode days. In addition, as discussed previously, LDEQ's wind rose analysis is not limited to the wind conditions that are conducive to high ozone, so it does not provide information directly pertinent to when ozone is high at areas in Texas and whether Louisiana is a contributing area during those specific times.

LDEQ also included 99 back trajectory analyses during the 2016, 2017, and 2018 years for the dates of ozone exceedances at the monitors referenced in Table LA–1 of this action. HYSPLIT back trajectory analyses use archived meteorological modeling that includes actual observed data (surface, upper air, airplane data, etc.) and modeled meteorological fields to estimate the most likely route of an air parcel transported to a receptor at a specified time. The method essentially follows a parcel of air backward in hourly steps for a specified length of time. HYSPLIT estimates the central path in both the vertical and horizontal planes. The HYSPLIT central path represents the centerline with the understanding that there are areas on each side horizontally and vertically that also contribute to the concentrations at the end point. The horizontal and vertical areas that potentially contribute to concentrations at the endpoint grow wider from the centerline the further back in time the trajectory goes. Therefore, a HYSPLIT centerline does not have to pass directly over emissions sources or emission source areas but merely relatively near emission source areas for those areas to contribute to concentrations at the trajectory endpoint. The EPA relies on back trajectory analysis as a corollary analysis along with observation-based meteorological wind fields at multiple heights to examine the general plausibility of the photochemical model ''linkages.'' Since the back trajectory calculations do not account for any air pollution formation, dispersion, transformation, or removal processes as influenced by emissions, chemistry, deposition, etc., the trajectories cannot be used to develop quantitative contributions. Therefore, back trajectories cannot be used to quantitatively evaluate the magnitude of the existing photochemical contributions from upwind states to downwind receptors. LDEQ's HYSPLIT back trajectory analysis for 2016, 2017, and 2018 showed that on high ozone days in Texas at the receptors identified by the EPA in the 2018 memorandum that 28% of the trajectories passed through Louisiana. LDEQ proffered that some of these back trajectories did not pass directly over areas with emissions but did not consider that the back trajectories only represent a centerline and there are areas on either side of the centerline that would be contributing areas. LDEQ's trajectory analysis confirmed that Louisiana is an upwind area for the receptors in Texas often enough to potentially contribute to nonattainment or interfere with maintenance. The analysis did not provide evidence that was contrary to the conclusions of the EPA's photochemical modeling analyses (*i.e.,* the EPA's modeling results in the March 2018 memorandum and EPA 2016v2 model).

Photochemical modeling simulations for ozone interstate transport assessment is relied upon by the EPA to simulate the formation and fate of oxidant precursors, primary and secondary particulate matter concentrations, and deposition over regional and urban spatial scales. Photochemical modeling is the most sophisticated tool available to estimate future ozone levels and contributions to those modeled future ozone levels. Consideration of the different processes that affect primary and secondary pollutants at the regional scale in different locations is fundamental to understanding and assessing the effects of emissions on air quality concentrations. For the 2015 ozone NAAQS interstate transport analysis, the EPA performed nationwide, state-level ozone source apportionment modeling using CAMx to quantify the contribution of NO_X and VOC emissions from all sources in each state to project 2023 ozone concentrations at ozone monitoring sites. Detailed information for the EPA's modeling may be found in the Air Quality Modeling TSD in Docket No. EPA–HQ–OAR–2021–0663.

LDEQ concluded in the SIP submittal, citing an article [72] published in 2012, that the use of 1 percent of the standard for modeled contribution as the sole definition of significant contribution is inappropriate for the 2015 ozone NAAQS. LDEQ's reasoning for this conclusion is that the more stringent 0.7 ppb threshold ''is an order of magnitude smaller than the biases and errors typically documented for regional photochemical modeling.'' First, the EPA does not use the 1 percent threshold as the sole definition of significant contribution; at Step 2 of the analysis, the 1 percent threshold is used to identify contributions between states and downwind problem areas for further analysis at Step 3. Second, photochemical transport models such as CAMx have been extensively peer reviewed and used to support SIPs and explore relationships between inputs and air quality impacts in the U.S. and beyond. The EPA works to continually develop and update both the guidelines

[72] Simon et al., *supra* FN 58.

on using modeling results and the latest versions of photochemical model platforms to support scientific assessments and regulatory determinations. Prior to using photochemical modeling to support a regulatory assessment, a model performance evaluation is completed to establish a benchmark to assess how accurately the model predicts observed concentrations and to identify model limitations. The model performance evaluation provides a better understanding of the model's limitations and biases and serves as a diagnostic evaluation for further model development and improvement. As discussed in Section I of this document and the Air Quality Modeling TSD in Docket No. EPA–HQ–OAR–2021–0663, the EPA follows the most recent established modeling guidance and provides with this action the updated modeling analysis based on the recent CAMx model update. By using the most recent 2016v2 photochemical modeling enhancements (EPA 2016v2 modeling) results are more representative of the projected local and regional air quality as it is based on more recent emission estimates with fewer years between the base case year (2016) and the future year (2023). In addition, to reduce the impact of any potential biases or errors, the EPA uses the modeling results in a relative sense rather than rely on absolute model predictions.[73]

Furthermore, it is not appropriate to compare the bias/error involved in the estimation of total ozone to the potential error in the estimation of the subset of ozone that is contributed by a single state. For example, on a specific day the modeled vs. monitored ozone value may differ by 2 ppb but that is relatively small percentage of the total modeled ozone, which for a receptor of interest would be on the order of 70 ppb. It would be unrealistic to assign all the 2 ppb, in the above example, to the estimated impact from a single state as the 2 ppb error would be the combination of the error from all sources of ozone that contribute to the total, including estimated impacts from other states, the home state of the receptor and natural background emissions.

In sum, the EPA disagrees that the estimates of potential error in the models estimates of total ozone, call into question the use of 1 percent as a threshold for linkage. As noted earlier, in the case of Louisiana, the difference between a 1 percent threshold and a 1 ppb threshold is irrelevant to the decision here because linkages are present at both threshold levels. As to Louisiana's conclusion that the impacts from Louisiana's emissions are not persistent, the contribution analysis is the average impact for at least 5 days and up to 10 days for the 2016 base period which is sufficiently persistent considering the first through fourth high monitored values set the monitored DV.

We recognize that the results of the EPA (2011 and 2016 base year) modeling indicated different receptors and linkages at Steps 1 and 2 of the 4-Step interstate transport framework. These differing results regarding receptors and linkages can be affected by the varying meteorology from year to year, but we do not think the differing results means that the modeling or the EPA or the state's methodology for identifying receptors or linkages is inherently unreliable. Rather, these separate modeling runs all indicated: (1) That there are receptors that would struggle with nonattainment or maintenance in the future; and (2) that Louisiana is linked to some set of these receptors, even if the receptors and linkages differed from one another in their specifics (*e.g.,* Louisiana was linked to a different set of receptors in one modeling run versus another). These results indicates that Louisiana's emissions were substantial enough to generate linkages at Steps 1 and 2 to at least some set of downwind receptors, under varying assumptions and meteorological conditions, even if the precise set of linkages changed between modeling runs.

4. Evaluation of Information Provided by LDEQ Regarding Step 4

Step 4 of the 4-Step interstate transport framework calls for development of permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. As mentioned previously, LDEQ's SIP submission did not contain an evaluation of additional emission control opportunities (or establish that no additional controls are required), thus, no information was provided at Step 4. To the extent that LDEQ discussed emissions reductions, the State only provided a summary of existing already implemented enforceable control regulations. The EPA's 2016v2 modeling analyses have already accounted for the implementation of the regulations cited by LDEQ's submission—including the CSAPR rulemakings and prior regional rulemakings—and even with those reductions in place, the modeling results consistently show receptors that are projected to be in nonattainment or to struggle with maintenance, and Louisiana contributing to those receptors. Relying only on the existing enforceable control regulations is insufficient to address the Louisiana air emission contributions to linked downwind air quality problems. As a result, the EPA proposes to disapprove LDEQ's submittal on the separate, additional basis that the State has not developed permanent and enforceable emissions reductions necessary to meet the obligations of CAA section 110(a)(2)(D)(i)(I).

5. Conclusion

Based on the EPA's evaluation of LDEQ's SIP submission, the EPA is proposing to find that LDEQ's November 13, 2019, SIP submission pertaining to interstate transport of air pollution does not meet the State's interstate transport obligations because it fails to contain the necessary provisions to eliminate emissions that will contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state.

IV. Oklahoma SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS and the EPA Evaluation of the SIP Submission

A. Summary of ODEQ SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS

On October 25, 2018, the Oklahoma Department of Environmental Quality (ODEQ) made a SIP submission addressing interstate transport of air pollution for the 2015 ozone NAAQS. The SIP submission provided ODEQ's analysis of their impact to downwind states using the EPA's 4-Step framework and an analytic year of 2023 and concluded that emissions from Oklahoma will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states.

To identify downwind air quality problems that are linked to emissions

[73] *See* ''Modeling Guidance for Demonstrating Air Quality Goals for Ozone, $PM_{2.5}$ and Regional Haze'', Nov. 29, 2018, at 101, available at *https://www.epa.gov/sites/default/files/2020-10/documents/o3-pm-rh-modeling_guidance-2018.pdf* (''2018 Air Quality Modeling Guidance''). *See also* ''Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze'', Dec. 3, 2014, at 97–98, available at *https://www.epa.gov/sites/default/files/2020-10/documents/draft-o3-pm-rh-modeling_guidance-2014.pdf* (''2014 Draft Air Quality Modeling Guidance'').

from Oklahoma and therefore warrant further review and analysis (Steps 1 and 2), ODEQ used EPA interstate transport modeling results found in the March 2018 memorandum. The EPA modeling results projected: (1) An average DV and a maximum DV for the year 2023 for ozone monitors in the 48 contiguous States and (2) the expected contribution from emissions in each state to the ozone concentrations at each ozone monitor.

ODEQ used the information from the March 2018 EPA memorandum to identify six downwind nonattainment and maintenance receptors [74] with a contribution from Oklahoma of 1 percent of the 2015 ozone NAAQS (0.70 parts ppb) or greater. ODEQ then applied a 1 ppb threshold to remove from further analysis three receptors with a contribution from Oklahoma of less than 1 ppb. ODEQ noted that the possibility of using an alternative contribution threshold was one of the areas of flexibility identified in the March 2018 EPA memorandum and discussed further in the August 2018 EPA memorandum. To support its alternative contribution threshold, ODEQ referenced an EPA memorandum from April 17, 2018, which recommended a Significant Impact Level (SIL) for ozone of 1.0 ppb for proposed sources subject to the Prevention of Significant Deterioration (PSD) permitting program.[75] Table OK–1 provides information on the six nonattainment and maintenance receptors identified by ODEQ, including the three receptors ODEQ identified for further analysis.

TABLE OK–1—NONATTAINMENT AND MAINTENANCE RECEPTORS IDENTIFIED BY ODEQ BASED ON THE EPA'S MARCH 2018 MEMORANDUM

Receptor (site ID, county, state)	2023 average DV (ppb)	2023 maximum DV (ppb)	Oklahoma contribution (ppb)	ODEQ's step 1 and 2 determination
260050003, Allegan, MI	69.0	71.7	1.31	Maintenance receptor identified for further analysis.
481210034, Denton, TX	69.7	72.0	1.23	Maintenance receptor identified for further analysis.
484392003, Tarrant, TX	72.5	74.8	1.71	Nonattainment receptor identified for further analysis.
480391004, Brazoria, TX	74.0	74.9	0.90	Nonattainment receptor with contribution less than 1 ppb; no further analysis.
550790085, Milwaukee, WI	71.2	73.0	0.76	Nonattainment receptor with contribution less than 1 ppb; no further analysis.
551170006, Sheboygan, WI	72.8	75.1	0.95	Nonattainment receptor with contribution less than 1 ppb; no further analysis.

ODEQ further evaluated the two Texas receptors (Tarrant County and Denton County) and the receptor in Allegan County, MI. ODEQ did not further evaluate the contribution from Oklahoma to the receptors in Brazoria County, TX, Milwaukee County, WI, and Sheboygan County, WI because the contributions from Oklahoma to these receptors were less than 1 ppb.

For the two remaining Texas receptors, ODEQ returned to Steps 1 and 2 of the 4-Step interstate transport framework using modeling performed by the Texas Commission on Environmental Quality (TCEQ). The TCEQ modeling results are included in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801). ODEQ stated that the primary difference between the EPA modeling and the TCEQ modeling is that the TCEQ modeling used 2012 as the ''base year'' for assessing interstate transport of ozone pollution in 2023 whereas the EPA modeling used 2011 as the base year for that assessment. In addition, the ODEQ stated that TCEQ used a method different from the EPA's method to identify whether a monitor would have trouble maintaining the 2015 ozone NAAQS (*i.e.,* a maintenance receptor). To identify maintenance receptors, TCEQ calculated a ''maintenance future year (fy) DV'' by projecting to 2023 the most recent regulatory DV that contains the base year (*i.e.,* the 2012–2014 DV for a base year of 2012), whereas the EPA's methodology for identifying maintenance receptors uses the maximum DV, which is the highest monitored DV from among the three DVs that contain the base year (*i.e.,* the 2009–2011, 2010–2012 and 2011–2013 DVs for a base year of 2011).

To assess whether Oklahoma is linked to nonattainment of the 2015 ozone standard at the Denton and Tarrant County sites, ODEQ switched to using the 2023 average DV projected by TCEQ rather than the EPA's projected average DVs. The ODEQ noted that the projected 2023 average DV was 68 ppb for the Denton County site and 66 ppb for the Tarrant County site based on the TCEQ modeling. ODEQ then claimed that these results demonstrate that both of these sites are in attainment in 2023.

To assess whether Oklahoma interferes with maintenance of the 2015 ozone standard at these two sites, ODEQ used (1) the Texas method to calculate a ''maintenance future year DV'' for 2023 and (2) a maximum DV calculated using the highest of the three base year DVs multiplied by a relative response factor derived from TCEQ's modeling (*i.e.,* EPA's method for identifying maintenance receptors but using TCEQ's modeling rather than EPA's modeling). This assessment is summarized in Table OK–2.

[74] Nonattainment receptors are monitoring sites that are anticipated to have problems attaining and maintaining the 2015 ozone NAAQS (*i.e.,* average projected 2023 DV greater than 70.9 ppb). Maintenance receptors are monitoring sites that are anticipated to have problems maintaining the 2015 ozone NAAQS (*i.e.,* maximum projected 2023 DV greater than 70.9 ppb).

[75] *See* FN 32.

TABLE OK–2—SUMMARY OF TCEQ MODELING (2012 BASE PERIOD) USED BY ODEQ TO ASSESS MAINTENANCE RECEPTORS

Receptor (site ID, county, state)	2023 average DV (ppb)	2023 maximum DV (ppb) (EPA method)*	Maintenance DV (ppb)(TCEQ method)	ODEQ's step 1 and step 2 determination
481210034 Denton, TX	68	70.7	65.9	Future DVs project no attainment or maintenance problems.
484392003 Tarrant, TX	66	69.9	62.4	Future DVs project no attainment or maintenance problems.

*These values are not based on calculations made by the EPA. ODEQ calculated these values by using the maximum DV for the 2010–2014 5-year period (*i.e.,* the highest of the DVs in 2012, 2013, and 2014) multiplied by relative response factor for the receptor obtained from TCEQ's modeling.

ODEQ noted in their assessment that based on the TCEQ modeling and TCEQ definition of maintenance receptor, it is expected that the Denton and Tarrant sites will not experience nonattainment or maintenance problems in 2023. Because ODEQ claimed that the Denton and Tarrant County sites will not be nonattainment or maintenance receptors in 2023, ODEQ did not analyze potential emissions reductions at Step 3 to address its contribution to these two sites.

With respect to the remaining receptor at Allegan County, MI, ODEQ provided an analysis of projected 2023 DVs for this site and information on emissions trends in Oklahoma to assert that emissions from Oklahoma do not significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS at the Allegan County, MI site.

ODEQ noted that (1) the DV for the Allegan County, MI site has had a substantial reduction in the last 6 years from 84 ppb in 2012 to 73 ppb in 2017, a 1.8 ppb per year decrease, on average and (2) the Allegan County, MI site is substantially influenced by mobile sources from the Chicago area and these emissions are expected to be greatly reduced in the near future, by roughly a 1 ppb per year decrease, leading to attainment of the 2015 ozone standard. The ODEQ then calculated a projected 2023 maintenance DV for the Allegan County, MI site using the EPA's method, but assuming that the base year was 2016 rather than 2011, as in the EPA's modeling or 2012 as in the TCEQ modeling. The ODEQ noted that the maximum DV in the 2016-centered base period (*i.e.,* 2014–2016, 2015–2017, and 2016–2018) was 75 ppb at the Allegan County, Michigan site. The ODEQ then calculated the difference between the 2011-centered base period maximum DV of 86 ppb and the 2023 projected maximum DV of 71.7 ppb, using data from the EPA's modeling. The ODEQ calculated a ''ppb per year'' reduction of 1.1917 ppb per year, based on the 14.3 ppb difference between the 2011-centered and 2023 maximum DVs over the 12 years from 2011 to 2023. Finally, ODEQ applied the 1.1917 ppb per year value to the 2016-centered maximum DV of 75 ppb to estimate a 2023 maximum DV of 66.66 ppb.

ODEQ also asserted that the relatively small contribution from Oklahoma (3% of total upwind state contributions) combined with the distance between Oklahoma sources and the Allegan County, Michigan site, warrants a focus on nearby states with greater proportional contributions as the most prudent approach to addressing interstate transport of ozone precursors for this receptor.

The ODEQ also provided the anthropogenic NO_X and VOC data of Oklahoma's emissions from EPA's emission trends and modeling to demonstrate an anticipated substantial reduction of NO_X and VOC from 2011 to 2023: (1) Reductions of NO_X from 405,000 to 235,000 tons per year and (2) reductions of VOC from 414,000 to 295,000 tons per year.[76] ODEQ noted these reductions should result in considerable reductions in ozone concentrations. The ODEQ stated that due to the emissions reductions required by rules like CSAPR, the 2016 CSAPR Update, and the regional haze requirements, the NO_X emissions from electric generation in Oklahoma have dropped significantly during the ozone season from 38,285 tons per year in 2011 to 10,435 tons per year in 2017. ODEQ also stated that changes in the Southwest Power Pool[77], building of additional windfarms, and electric utilities installing solar generation facilities have led to Oklahoma NO_X emissions reductions; and that any additional NO_X reductions from the electric generation section would require more costly emissions controls. ODEQ concluded that the existing controls in Oklahoma have resulted in significant decreases in ozone DVs in Oklahoma and that additional controls would not be cost-effective. Given their conclusions, ODEQ did not adopt additional controls to reduce ozone precursor emissions (Step 4).

B. EPA Evaluation of the ODEQ SIP Submission

The EPA is proposing to find that ODEQ's October 25, 2018, SIP submission does not demonstrate that the State's obligations with respect to prohibiting emissions that contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state based on the EPA's evaluation of the SIP submission using the 4-Step interstate transport framework have been met. The EPA is therefore proposing to disapprove ODEQ's submission.

1. Evaluation of Information Provided by ODEQ Regarding Steps 1 and 2

As noted earlier, ODEQ first used the information from the EPA's March 2018 memorandum to identify nonattainment and maintenance receptors with a contribution from Oklahoma of 0.70 ppb or greater (*i.e.,* ODEQ identified receptors that would be deemed nonattainment and maintenance receptors under the EPA's methodology for Steps 1 and 2). ODEQ then utilized a 1 ppb threshold and elected not to further analyze any receptors to which it did not contribute greater than 1 ppb.

[76] ODEQ used the EPA's emissions data shared alongside the October 2018 memorandum, ''state-sector_annual_emissions_data_1.xlsx'' available at *https://www.epa.gov/airmarkets/memo-and-supplemental-information-regarding-interstate-transport-sips-2015-ozone-naaqs.*

[77] The Southwest Power Pool is a regional electric transmission organization regulated by the Federal Energy Regulatory Commission whose purpose is promoting efficiency and reliability in the operation and planning of the electric transmission grid and ensuring non-discrimination in the provision of electric transmission services. It manages electric transmission in portions of fourteen states: Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas and Wyoming. *See* 18 CFR 35.34 and *https://www.ferc.gov/electric-power-markets.*

ODEQ provided further evaluation of the State's emissions to those receptors to which Oklahoma contributes greater than 1 ppb (*i.e.,* Allegan County, MI, Denton County, TX and Tarrant County, TX).

As discussed in the EPA's August 2018 memorandum, with appropriate additional analysis it may be reasonable for states to use a 1 ppb contribution threshold, as an alternative to a 1 percent threshold, at Step 2 of the 4-Step interstate transport framework, for the purposes of identifying linkages to downwind receptors. However, the EPA's August 2018 memorandum provided that whether or not a 1 ppb threshold is appropriate must be based on an evaluation of state-specific circumstances, and no such evaluation was included in the ODEQ's submittal. Instead, ODEQ's SIP submission justified the State's use of a 1 ppb threshold based on the threshold's use in the SILs Guidance.[78] ODEQ did not explain the relevance of the SILs Guidance to Oklahoma's statutory obligation under the interstate transport provision. The SILs Guidance relates to a different provision of the CAA regarding implementation of the prevention of significant deterioration (PSD) permitting program, *i.e.,* a program that applies in areas that have been designated attainment of the NAAQS, and it is not applicable to the interstate transport provision, which requires states to eliminate emissions that contribute significantly or interfere with maintenance of the NAAQS at known, ongoing, or projected air quality problem areas in other states. The EPA does not, in this action, agree that the State has justified its application of the 1 ppb threshold.

Additionally, the EPA here shares further evaluation of its experience since the issuance of the August 2018 memorandum regarding use of alternative thresholds at Step 2. This experience leads the Agency to now believe it may not be appropriate to continue to attempt to recognize alternative contribution thresholds at Step 2. The August 2018 memorandum stated that ''it may be reasonable and appropriate'' for states to rely on an alternative threshold of 1 ppb threshold at Step 2. (The memorandum also indicated that any higher alternative threshold, such as 2 ppb, would likely not be appropriate.) However, the EPA also provided that ''air agencies should consider whether the recommendations in this guidance are appropriate for each situation.'' Following receipt and review of 49 interstate transport SIP submittals for the 2015 ozone NAAQS, the EPA's experience has been that nearly every state that attempted to rely on a 1 ppb threshold did not provide sufficient information and analysis to support a determination that an alternative threshold was reasonable or appropriate for that state.

For instance, in nearly all submittals, the states did not provide the EPA with analysis specific to their state or the receptors to which its emissions are potentially linked. In one case, the proposed approval of Iowa's SIP submittal, the EPA expended its own resources to attempt to supplement the information submitted by the state, in order to more thoroughly evaluate the state-specific circumstances that could support approval. [79] It was at the EPA's sole discretion to perform this analysis in support of the state's submittal, and the Agency is not obligated to conduct supplemental analysis to fill the gaps whenever it believes a state's analysis is insufficient. The Agency no longer intends to undertake supplemental analysis of SIP submittals with respect to alternative thresholds at Step 2 for purposes of the 2015 ozone NAAQS.

Furthermore, the EPA's experience since 2018 is that allowing for alternative Step 2 thresholds may be impractical or otherwise inadvisable for a number of additional policy reasons. For a regional air pollutant such as ozone, consistency in requirements and expectations across all states is essential. Based on its review of submittals to-date and after further consideration of the policy implications of attempting to recognize an alternative Step 2 threshold for certain states, the Agency now believes the attempted use of different thresholds at Step 2 with respect to the 2015 ozone NAAQS raises substantial policy consistency and practical implementation concerns.[80] The availability of different thresholds at Step 2 has the potential to result in inconsistent application of interstate transport obligations based solely on the strength of a state's SIP submittal at Step 2 of the 4-Step interstate transport framework. From the perspective of ensuring effective regional implementation of interstate transport obligations, the more important analysis is the evaluation of the emissions reductions needed, if any, to address a state's significant contribution after consideration of a multifactor analysis at Step 3, including a detailed evaluation that considers air quality factors and cost. Where alternative thresholds for purposes of Step 2 may be ''similar'' in terms of capturing the relative amount of upwind contribution (as described in the August 2018 memorandum), nonetheless, use of an alternative threshold would allow certain states to avoid further evaluation of potential emission controls while other states must proceed to a Step 3 analysis. This can create significant equity and consistency problems among states.

Further, it is not clear that national ozone transport policy is best served by allowing for less stringent thresholds at Step 2. The EPA recognized in the August 2018 memorandum that there was some similarity in the amount of total upwind contribution captured (on a nationwide basis) between 1 percent and 1 ppb. However, the EPA notes that while this may be true in some sense, that is hardly a compelling basis to move to a 1 ppb threshold. Indeed, the 1 ppb threshold has the disadvantage of losing a certain amount of total upwind contribution for further evaluation at Step 3 (*e.g.,* roughly seven percent of total upwind state contribution was lost according to the modeling underlying the August 2018 memorandum; [81] in EPA 2016v2 modeling, the amount lost is five percent). Considering the core statutory objective of ensuring elimination of all significant contribution to nonattainment or interference of the NAAQS in other states and the broad, regional nature of the collective contribution problem with respect to ozone, there does not appear to be a compelling policy imperative in allowing some states to use a 1 ppb threshold while others rely on a 1 percent of NAAQS threshold.

Consistency with past interstate transport actions such as CSAPR, and the CSAPR Update and Revised CSAPR Update rulemakings (which used a Step 2 threshold of 1 percent of the NAAQS for two less stringent ozone NAAQS), is also important. Continuing to use a 1 percent of NAAQS approach ensures that as the NAAQS are revised and made more stringent, an appropriate increase in stringency at Step 2 occurs, so as to ensure an appropriately larger amount of total upwind-state contribution is captured for purposes of

[78] *See* FN 32.

[79] ''Air Plan Approval; Iowa; Infrastructure State Implementation Plan Requirements for the 2015 Ozone National Ambient Air Quality Standard'', 85 FR 12232 (March 2, 2020). The agency received adverse comments on this proposed approval and has not taken final action with respect to this proposal.

[80] We note that Congress has placed on the EPA a general obligation to ensure the requirements of the CAA are implemented consistently across states and regions. *See* CAA section 301(a)(2). Where the management and regulation of interstate pollution levels spanning many states is at stake, consistency in application of CAA requirements is paramount.

[81] *See* August 2018 memorandum, at page 4.

fully addressing interstate transport. *Accord* 76 FR 48237–38.

Therefore, notwithstanding the August 2018 memorandum's recognition of the potential viability of alternative Step 2 thresholds, and in particular, a potentially applicable 1 ppb threshold, the EPA's experience since the issuance of that memorandum has revealed substantial programmatic and policy difficulties in attempting to implement this approach. Nonetheless, the EPA is not, at this time, rescinding the August 2018 memorandum. The basis for the EPA's proposed disapproval of ADEQ's SIP submission with respect to the Step 2 analysis is, in the Agency's view, warranted even under the terms of the August 2018 memorandum. The EPA invites comment on this broader discussion of issues associated with alternative thresholds at Step 2. (See Supplementary Information section above for details and docket to submit comments). Depending on public comments received in relation to this action and further evaluation of this issue, the EPA may determine to rescind the 2018 memorandum in the future.

In any case, as discussed in the following subsection, based on the EPA's most recent modeling, the State is projected to contribute greater than both the one percent and alternative 1 ppb thresholds at the Denton County, TX receptor, (Monitor ID. 481210034). Based on the EPA's modeling results included in the March 2018 memorandum, Oklahoma was also projected to contribute 1.23 ppb to the Denton County, TX receptor. (In the EPA 2016v2 modeling the Allegan County, MI and Tarrant County, TX receptors are not projected to have problems attaining or maintaining the 2015 ozone NAAQS). Even under ODEQ's own analysis, the State was linked to receptors with contributions exceeding 1 ppb. Therefore, based on Oklahoma's linkages greater than 1 ppb to projected downwind nonattainment or maintenance receptors, the State's use of this alternative threshold at Step 2 of the 4-Step interstate framework is inconsequential to our proposed action on the state's SIP.

In the remainder of this section, EPA evaluates ODEQ's conclusions that emissions from Oklahoma do not contribute to nonattainment or interfere with maintenance at receptors in Tarrant County, TX (Monitor ID. 484392003) and Denton County, TX (Monitor ID. 481210034). We evaluate ODEQ's conclusions as to the Allegan, MI (Monitor ID. 260050003) in Section IV.B.3 of this action.

With regard to the Denton County and Tarrant County, TX receptors cited in ODEQ's submission, ODEQ chose to rely on the TCEQ's modeling and methodology, instead of the EPA modeling, and trends in ozone DVs and emissions to conclude that these monitoring sites will be in attainment by 2023 and will not have a problem maintaining the 2015 ozone NAAQS. As noted in Section IV.A of this action, ODEQ used modeling results from the TCEQ along with the TCEQ alternative method for identifying maintenance receptors to claim that using the TCEQ modeling and methods, the Denton County and Tarrant County monitors would not have a problem maintaining the NAAQS in 2023. The ODEQ supplemented that analysis by citing the downward trend in NO_X and VOC emissions in Oklahoma. ODEQ also provided TCEQ modeling and emissions data for the Dallas-Fort Worth nonattainment area to show that mobile sources represent the largest emissions category in this area and that emissions from this sector have declined since 2005 and are expected to continue to decline in the future. As described in Table OK–2, ODEQ (1) provided the average 2023 DV for the Denton County, TX receptor from the TCEQ modeling and (2) used TCEQ modeling data with a 2012 base year to calculate a 2023 maintenance DV of 65.9 ppb (using the TCEQ methodology for identifying maintenance receptors) and a 2023 maximum DV of 70.7 ppb (using the EPA methodology for identifying maintenance receptors, combined with TCEQ's modeling results). ODEQ relied on this information, which is based on TCEQ modeling with a 2012 base year, to conclude that the Denton County, TX and Tarrant County, TX monitors would not have problems attaining and maintaining the 2015 ozone NAAQS.

ODEQ's SIP submission (or TCEQ, to the extent that Oklahoma is merely incorporating and relying on Texas' submission) does not adequately explain or justify how relying on TCEQ's method for identifying maintenance receptors reasonably identifies areas that will have difficulty maintaining the NAAQS. EPA proposes to find that ODEQ has provided no sound technical basis (either on its own or through reliance on Texas) for how its chosen methodology gives meaning to the CAA's instruction that states submit interstate transport SIPs that prohibit their states' emissions from interfering with the maintenance of the NAAQS in another state.

In *North Carolina* v. *EPA,* 531 F.3d 896, 909–11 (D.C. Cir. 2008), the D.C. Circuit rejected the EPA's CAIR on the basis that the EPA had not adequately given meaning to the phrase ''interfere with maintenance'' in the interstate transport provision. Specifically, North Carolina argued that it had counties that were projected to attain the NAAQS in the future analytic year, but were at risk of falling back into nonattainment due to interference from upwind sources, particularly given year-to-year variability in ozone levels. The court agreed, holding that the EPA's rule did not adequately protect ''[a]reas that find themselves barely meeting attainment.'' *Id.* at 910. Consequently, the EPA has developed a methodology, used in its 2011 CSAPR and its 2016 CSAPR Update and Revised CSAPR Update, for identifying areas that may struggle to maintain the NAAQS. *See* 76 FR at 48227–28. EPA's approach to addressing maintenance receptors was upheld in the *EME Homer City* litigation. *See* 795 F.3d 118, 136–37. It was also upheld in *Wisconsin.* 938 F.3d at 325–26. In *Wisconsin,* the court noted that four upwind states were linked only to maintenance receptors and rejected the argument that application of the same control level as EPA imposes for those states linked to nonattainment receptors was unreasonable or unlawful absent a particularized showing of overcontrol. *Id.* at 327.

In order to explain the differences between TCEQ's and the EPA's methodology for identifying maintenance receptors, it is helpful to provide some additional context of how the EPA projects future air quality.

The EPA's air quality modeling guidance has long recommended developing a base DV (*i.e.,* the DV that will be used as a starting point to model and analyze for purposes of projecting future air quality concentrations) that is the average of three DVs spanning a five-year period, centered around one year for which an emissions inventory will be submitted (*e.g.,* if 2011 was the base emissions inventory year, a state would use monitored values from 2009–2011, 2010–2012, 2011–2013 as the starting point for projecting air quality concentrations in future years).[82] The average of these three DVs is then multiplied by a relative response factor[83] to generate an average DV for the future year.[84] If a receptor's average

[82] *See* FN 73.

[83] *See* FN 53.

[84] While it is not critical to this discussion, for purposes of explanation, the relative response factor is a fractional change that represents how ozone at a given receptor responds to changes in emissions when all other variables are constant. For more explanation of the RRF, please see 2018 Air Quality Modeling Guidance or 2014 Draft Air Quality Modeling Guidance.

future year DV is greater than or equal to the level of the NAAQS, and the receptor has recent monitored data that violates the NAAQS, that receptor is considered a ''nonattainment'' receptor at Step 1. To identify maintenance receptors, the EPA's methodology looks to the highest DV of the three DVs used to calculate the 5-year weighted average DV (*e.g.,* in the 2011 example, if 2009–2011 had the highest DV of 2009–2011, 2010–2012, and 2011–2013). The EPA then applies the same relative response factor to that highest DV to generate a projected future maximum DV. Where a receptor's maximum DV exceeds the level of the NAAQS, the EPA has deemed those receptors to be ''maintenance'' receptors. This methodology was designed to address the D.C. Circuit's holding that the CAA's ''interference with maintenance'' prong requires states and the EPA to protect areas that may struggle with maintaining the standard in the face of variable conditions.

In its modeling, TCEQ adopted an identical approach to the EPA's for identifying nonattainment receptors—it looked at three sets of DVs over a five-year period and averaged those DVs to generate a base year DV. TCEQ then applied a relative response factor to that base year DV to project a receptor's average DV in the future year. For maintenance receptors, however, TCEQ elected not to examine variability in DVs over a five-year period by using the highest DV of the three DVs making up the base year DV. Instead, TCEQ (and by extension, ODEQ), used only the most recent DV of the three DVs, regardless of whether the most recent DV was highest or lowest. TCEQ's proffered explanation for using the most recent DV to identify maintenance receptors was that the latest DV ''takes into consideration . . . any emissions reductions that might have occurred.'' [85] TCEQ in its submission does not explain why or how this methodology identifies those areas that may be meeting the NAAQS or that may be projected to meet the NAAQS but may nevertheless struggle to maintain the NAAQS, given meteorological variability. In fact, because TCEQ's stated purpose in using the most recent DV was to capture more recent emissions reductions, Texas' methodology appears to be aimed at *limiting* receptors which could be identified as maintenance receptors, compared to the EPA's methodology, which was designed to identify those areas that might struggle to maintain the NAAQS in particularly ozone conducive conditions.

As discussed further in the EPA Region 6 TSD [86] for this action, the EPA has reviewed the set of 21 receptors for which Texas had contributions of 0.7 ppb or more in the EPA's 2016 base year modeling analyses, or TCEQ's modeling (2012 base year), and evaluated the results of using TCEQ's alternate maintenance methodology. For these 21 receptors, TCEQ's method resulted in 15 of the 21 2023 maintenance DVs predicted to be lower than the 2023 nonattainment DVs from the nonattainment methodology that uses the 5-year center weighted average. Of these 15 receptors, three receptors have 2023 maintenance DVs that are 3 ppb lower, five receptors have 2023 maintenance DVs that are 2 ppb lower, and seven receptors have 2023 maintenance DVs that are 1 ppb lower. In comparison, using the EPA's maintenance methodology results in all 21 2023 maintenance DVs being equal or up to 4 ppb higher than the 2023 nonattainment DVs. Again, the EPA uses the average of the three DVs that contain the base year modeled for the nonattainment methodology and the maximum of these three DVs for the maintenance methodology. Because TCEQ's maintenance methodology of just using the most recent DV (2012–2014 DV) often results in maintenance DVs lower than the 2023 nonattainment DVs methodology results, the EPA finds that the TCEQ methodology is not adequately identifying conditions when a receptor would have more difficulty maintaining the standard. In fact, the TCEQ's method also identified one receptor in their SIP submission as a nonattainment receptor in 2023 that would not have been identified as a maintenance receptor, which further highlights the concern that TCEQ's method did not adequately identify areas that may struggle to maintain the standard. TCEQ did not address whether the three years that comprise the most recent design value (*i.e.,* 2012, 2013, and 2014) had meteorological conditions highly conducive for formation of high ozone concentrations and thus would be an appropriate time period to assess whether area could have difficulty maintaining the standard and the EPA's analysis confirms that this time period is not highly conducive to ozone formation, at least for many receptors. The consequence of TCEQ's maintenance method is that it often results in lower DVs than the nonattainment method as demonstrated by our analysis, which indicates that it is often not considering conditions when an area would have difficulty maintaining the standard. Further, it is unreasonable to have a method that would not identify nonattainment receptors also as maintenance receptors.

Again, EPA also assessed a number of monitored DV trends that were provided in TCEQ's SIP and previous TCEQ attainment demonstration SIPs indicating that there are at times large annual fluctuations upward from year to year in monitored DVs (sometimes 2–3 ppb increase in one year) that are due to variations in meteorology. Neither TCEQ nor ODEQ addressed in their SIP submissions whether the three years that comprise the most recent DV (*i.e.,* 2012, 2013, and 2014) had meteorological conditions conducive for formation of high ozone concentrations. On the other hand, the EPA methodology can identify variations in ozone levels that might result in difficulty in maintaining the standard over a longer period of time. The TCEQ method will only identify areas that have difficulty maintaining the standard for a single design value period and, as a result, does not address the meteorological variability issue sufficiently.

In its SIP submittal, ODEQ contended that, based on TCEQ's use of a 2012 base year, and using TCEQ's air quality modeling, even if Texas had used the EPA's method of identifying maintenance receptors, the projected maximum DV for the Denton County and Tarrant County receptors would be 70.7 ppb and 69.9 ppb, respectively, which are considered to be in attainment of the 2015 ozone NAAQS in 2023. However, this conclusion relied upon a relative response factor derived from the TCEQ modeling and TCEQ's modeling results, which are discussed in more detail in Section V of this action and in the EPA Region 6 TSD.[87] TCEQ's modeled projections for 2023 including nonattainment and maintenance values (using either TCEQ' or EPA's methodology) are much lower than recent monitored values (2018–2020 DV and preliminary 2019–2021 DVs) [88] for

[85] TCEQ submission at 3–39 to 3–40, available in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801).

[86] ''EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document'' (EPA Region 6 2015 Ozone Transport SIP TSD.pdf) included in Docket ID No. EPA–R06–OAR–2021–0801.

[87] *Id.*

[88] Monitoring data from the EPA's Air Quality System (AQS) (*https://www.epa.gov/aqs*). 2021 monitoring data is preliminary and still has to undergo Quality Assurance/Quality Control analysis and be certified by the State of Texas, submitted to EPA, and reviewed and concurred on by EPA. 2018–2020 DVs are 72 ppb and 73 ppb at

Continued

many monitors and the amount of further DV reductions needed to match TCEQ's modeling is more than is reasonably expected to occur for many monitors/receptors. This underestimation of future DVs results in mis-identifying these two receptors and other receptors as not being nonattainment or maintenance receptors. Specifically, these two receptors would need to have at least a 3–4 ppb decrease in the next 2–3 years just to attain the 2015 Ozone NAAQS in 2023. As discussed in the EPA Region 6 TSD, TCEQ's previous DFW Attainment Demonstration SIP includes long-term DV trends analysis that indicates that DFW DVs decrease approximately 1 ppb per year.[89] Moreover, as discussed in Section IV.B.2 of this action, the EPA's updated modeling, which relies upon more recent data and the latest information on emissions reductions, indicates that the maximum design value in 2023 for the Denton County receptor is 72.2 ppb. Recent monitored air quality data at the Denton receptor are consistent with the EPA's projections that this is an area that will struggle to maintain the 2015 ozone NAAQS in 2023; the 2020 DV for Denton was 72 ppb.[90]

Finally, in its submittal, ODEQ pointed to the significant reductions in emissions that have occurred in the State, but the EPA believes these reductions have already been accounted for in the most recent modeling; therefore, even with these reductions, the Denton County, TX receptor is projected to struggle with maintenance of the 2015 ozone NAAQS in 2023.

2. Results of the EPA's Step 1 and Step 2 Modeling and Findings for Oklahoma

As described in Section I of this action, the EPA performed air quality modeling using the 2016v2 platform to project DVs and contributions for 2023. This data was examined to determine if Oklahoma contributes at or above the threshold of 1 percent of the 2015 ozone NAAQS (0.70 ppb) to any downwind nonattainment or maintenance receptor. As shown in Table OK–3, the most recent modeling data[91] indicate that in 2023, emissions from Oklahoma contribute greater than one percent of the standard to maintenance-only receptors in Denton County, TX and in Cook County, IL. Oklahoma is not linked to any nonattainment receptors in EPA's most recent modeling (EPA 2016v2 modeling). Therefore, based on the EPA's evaluation of the information submitted by ODEQ and based on the EPA's most recent modeling results for 2023, the EPA proposes to find that Oklahoma is linked at Steps 1 and 2 and has an obligation to assess potential emissions reductions from sources or other emissions activity at Step 3 of the 4-Step framework.

TABLE OK–3—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS WITH OKLAHOMA LINKAGES IN 2023 BASED ON EPA 2016V2 MODELING

Receptor (site ID, county, state)	Nonattainment/maintenance	2020 DV	2023 average DV (ppb)	2023 maximum DV (ppb)	Oklahoma contribution (ppb)
481210034, Denton, TX	Maintenance	72	70.4	72.2	1.19
170310032, Cook, IL	Maintenance	74	69.8	72.4	0.75

3. Evaluation of Information Provided by ODEQ Regarding Step 3

At Step 3 of the 4-Step interstate transport framework, a state's emissions are further evaluated, in light of multiple factors, including air quality and cost considerations, to determine what, if any, emissions contribute significantly to nonattainment or interfere with maintenance and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

To effectively evaluate which emissions in the state should be deemed ''significant'' and therefore prohibited, states generally should prepare an accounting of sources and other emissions activity for relevant pollutants and assess potential, additional emissions reduction opportunities and resulting downwind air quality improvements. The EPA has consistently applied this general approach (*i.e.,* Step 3 of the 4-Step interstate transport framework) when identifying emissions contributions that the Agency has determined to be ''significant'' (or interfere with maintenance) in each of its prior Federal, regional ozone transport rulemakings, and this interpretation of the statute has been upheld by the Supreme Court. *See EME Homer City,* 572 U.S. at 519. While the EPA has not directed states that they must conduct a Step 3 analysis in precisely the manner the EPA has done in its prior regional transport rulemakings, state implementation plans addressing the obligations in CAA section 110(a)(2)(D)(i)(I) must prohibit ''any source or other type of emissions activity within the State'' from emitting air pollutants which will contribute significantly to downwind air quality problems. Thus, states must complete something similar to the EPA's analysis (or an alternative approach to defining ''significance'' that comports with the statute's objectives) to determine whether and to what degree emissions from a state should be ''prohibited'' to eliminate emissions that will ''contribute significantly to nonattainment in, or interfere with maintenance of'' the NAAQS in any other state. ODEQ did not conduct such an analysis in their SIP submission.

As noted earlier, ODEQ provided some data on emissions and already implemented emissions reductions for sources in Oklahoma and stated that the 2016 CSAPR Update is the only reasonable control warranted based on Oklahoma's limited contributions to the Michigan and Texas receptors. Thus, Oklahoma relied on its EGUs being subject to the CSAPR Update (which reflected a stringency at the nominal marginal cost threshold of $1400/ton (2011$) for the 2008 ozone NAAQS) to argue that it had already implemented all cost-effective emissions reductions, and had no additional statutory

the Denton County and Tarrant County monitors/receptors respectively. Preliminary 2019–2021 DVs are 74 ppb and 72 ppb at the Denton County and Tarrant County monitors/receptors respectively.

[89] EPA also analyzed trends using AQS data, See EPA Region 6 TSD.

[90] DVs and contributions at individual monitoring sites nationwide are provide in the file: ''2016v2_DVs_state_contributions.xlsx'' which is included in Docket ID No. EPA–HQ–OAR–2021–0663.

[91] These modeling results are consistent with the results of a prior round of 2023 modeling using the 2016v1 emissions platform which became available to the public in the fall of 2020 in the Revised CSAPR Update, as noted above. That modeling showed that Oklahoma had a maximum contribution greater than 0.70 ppb to at least one nonattainment or maintenance-only receptor in 2023. These modeling results are included in ''Ozone DVs And Contributions Revised CSAPR Update.xlsx'' in Docket ID No. EPA–HQ–OAR–2021–0663.

obligation to prohibit emissions under CAA section 110(a)(2)(D)(i)(I) with respect to the 2015 ozone NAAQS.

The EPA disagrees with ODEQ's conclusions for the following reasons: First, the CSAPR Update did not regulate non-electric generating units, and thus this analysis is incomplete. *See Wisconsin,* 938 F.3d at 318–20. Second, relying on the CSAPR Update's (or any other CAA program's) determination of cost-effectiveness without further Step 3 analysis is not approvable. Cost-effectiveness must be assessed in the context of the specific CAA program; assessing cost-effectiveness in the context of ozone transport should reflect a more comprehensive evaluation of the nature of the interstate transport problem, the total emissions reductions available at several cost thresholds, and the air quality impacts of the reductions at downwind receptors. While the EPA has not established a benchmark cost-effectiveness value for 2015 ozone NAAQS interstate transport obligations, because the 2015 ozone NAAQS is a more stringent and more protective air quality standard, it is reasonable to expect control measures or strategies to address interstate transport under this NAAQS to reflect higher marginal control costs. As such, the marginal cost threshold of $1,400/ton for the CSAPR Update (which addresses the 2008 ozone NAAQS and is in 2011$) is not an appropriate cost threshold and cannot be approved as a benchmark to use for interstate transport SIP submissions for the 2015 ozone NAAQS.

In addition, the most recent EPA modeling captures all existing CSAPR trading programs in the baseline, and that modeling confirms that these control programs were not sufficient to eliminate Oklahoma's linkage at Steps 1 and 2 under the 2015 ozone NAAQS. The State was therefore obligated at Step 3 to assess *additional* control measures using a multifactor analysis.

Finally, relying on a FIP at Step 3 is per se not approvable if the state has not adopted that program into its SIP and instead continues to rely on the FIP. States may not rely on FIP measures to meet SIP requirements. *See* CAA section 110(a)(2)(D) (''Each such [SIP] shall . . . contain adequate provisions . . . .''). *See also* CAA section 110(a)(2)(A); *Committee for a Better Arvin* v. *U.S. E.P.A.,* 786 F.3d 1169, 1175–76 (9th Cir. 2015) (holding that measures relied on by state to meet CAA requirements must be included in the SIP).

In addition, ODEQ's submission included a weight of evidence evaluation of its contribution to the Allegan County, MI receptor to conclude that it does not contribute significantly to nonattainment or maintenance at the receptor.

The EPA disagrees with respect to ODEQ's assertion regarding the relatively small contribution of emissions from Oklahoma to the Allegan County, MI receptor compared to emissions from other upwind states such as Illinois. Whether emissions from other states or countries also contribute to the same downwind air quality issue is irrelevant in assessing whether a downwind state has an air quality problem, or whether an upwind state is contributing significantly to that problem. States are not obligated under CAA section 110(a)(2)(D)(i)(I) to reduce emissions sufficient on their own to resolve downwind receptors' nonattainment or maintenance problems. Rather, states are obligated to eliminate their own significant contribution or interference with the ability of other states to attain or maintain the NAAQS.

Further, the court in *Wisconsin* explained that downwind jurisdictions often may need to heavily rely on emissions reductions from upwind states in order to achieve attainment of the NAAQS, 938 F.3d at 316–17; such states would face increased regulatory burdens including the risk of bumping up to a higher nonattainment classification if attainment is not reached by the relevant deadline, *Maryland,* 958 F.3d at 1204. Indeed, the D.C. Circuit in *Wisconsin* specifically rejected petitioner arguments suggesting that upwind states should be excused from interstate transport obligations on the basis that some other sources of emissions (whether international or another upwind state) could be considered the ''but-for'' cause of downwind air quality problem. 938 F.3dat 323–324. The court viewed petitioners' arguments as essentially an argument ''that an upwind state 'contributes significantly' to downwind nonattainment only when its emissions are the sole cause of downwind nonattainment.'' 938 F.3d at 324. The court explained that ''an upwind state can 'contribute' to downwind nonattainment even if its emissions are not the but-for cause.'' *Id.*at 324–325. *See also Catawba County* v. *EPA,* 571 F.3d 20, 39 (D.C. Cir. 2009) (rejecting the argument ''that 'significantly contribute' unambiguously means 'strictly cause'' because there is ''no reason why the statute precludes EPA from determining that [an] addition of [pollutant] into the atmosphere is significant even though a nearby county's nonattainment problem would still persist in its absence''); *Miss. Comm'n on Envtl. Quality* v. *EPA,*790 F.3d 138, 163 n. 12 (D.C. Cir. 2015) (observing that the argument the ''there likely would have been no violation at all . . . if it were not for the emissions resulting from [another source is ''merely a rephrasing of the but-for causation rule that we rejected in *Catawba County.*''). Therefore, a state is not excused from eliminating its significant contribution on the basis that other upwind states also contribute some amount of pollution to the same receptors to which the state is linked.

As explained in Section IV.A of this action, ODEQ's weight of evidence also concluded that the Allegan receptor would be attaining the NAAQS in 2023 based on an analysis that assumed a projection of a linear reduction in DVs across a 12-year period (2011 to projected 2023 values), and then applied that annual reduction (1.1917 ppb/year) to the receptor's 2016-centered base period maximum DV (75 ppb). The EPA does not necessarily agree that the assumptions made in Oklahoma's weight-of-evidence analysis are reasonable; however, because the updated modeling also shows that Allegan County, MI is no longer a receptor in 2023, we propose to find such assumptions are inconsequential to our action on Oklahoma's SIP.

We recognize that the results of the EPA (2011 and 2016 base year) modeling indicated different receptors and linkages at Steps 1 and 2 of the 4-Step interstate transport framework. These differing results regarding receptors and linkages can be affected by the varying meteorology from year to year, but we do not think the differing results mean that the modeling or the EPA methodology for identifying receptors or linkages is inherently unreliable. Rather, these separate modeling runs all indicated: (1) That there are receptors that would struggle with nonattainment or maintenance in the future; and (2) that Oklahoma was linked to some set of these receptors, even if the receptors and linkages differed from one another in their specifics (*e.g.,* Oklahoma was linked to a different set of receptors in one modeling run versus another). These results indicate that emissions from Oklahoma are substantial enough to generate linkages at Steps 1 and 2 to at least some downwind receptors, under varying assumptions and meteorological conditions, even if the precise set of linkages changed between modeling runs.

We therefore propose that ODEQ was required to analyze emissions from the sources and other emissions activity from within the State to determine

whether its contributions were significant. Because ODEQ failed to perform this analysis, we propose to disapprove its submission.

4. Evaluation of Information Provided by ODEQ Regarding Step 4

Step 4 of the 4-Step interstate transport framework calls for development of permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. As mentioned previously, ODEQ's SIP submission did not contain an evaluation of additional emission control opportunities (or establish that no additional controls are required), thus, no information was provided at Step 4. As a result, EPA proposes to disapprove ODEQ's submittal on the separate, additional basis that the State has not developed permanent and enforceable emissions reductions necessary to meet the obligations of CAA section 110(a)(2)(d)(i)(I).

5. Conclusion

Based on the EPA's evaluation of ODEQ's SIP submission, the EPA is proposing to find that the portion of ODEQ's SIP submission addressing CAA section 110(a)(2)(D)(i)(I) does not meet the State's interstate transport obligations because it fails to contain the necessary provisions to eliminate emissions which will interfere with maintenance of the 2015 ozone NAAQS in any other state.

C. Impact on Areas of Indian Country

Following the U.S. Supreme Court decision in *McGirt* v *Oklahoma,* 140 S Ct. 2452 (2020), the Governor of the State of Oklahoma requested approval under Section 10211(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005: A Legacy for Users, Public Law 109–59, 119 Stat. 1144, 1937 (August 10, 2005) (''SAFETEA''), to administer in certain areas of Indian country (as defined at 18 U.S.C. 1151) the State's environmental regulatory programs that were previously approved by the EPA for areas outside of Indian country. The State's request excluded certain areas of Indian country further described below. In addition, the State only sought approval to the extent that such approval is necessary for the State to administer a program in light of *Oklahoma Dept. of Environmental Quality* v. *EPA,* 740 F.3d 185 (D.C. Cir. 2014).[92]

On October 1, 2020, the EPA approved Oklahoma's SAFETEA request to administer all of the State's EPA-approved environmental regulatory programs, including the Oklahoma SIP, in the requested areas of Indian country. As requested by Oklahoma, the EPA's approval under SAFETEA does not include Indian country lands, including rights-of-way running through the same, that: (1) Qualify as Indian allotments, the Indian titles to which have not been extinguished, under 18 U.S.C. 1151(c); (2) are held in trust by the United States on behalf of an individual Indian or Tribe; or (3) are owned in fee by a Tribe, if the Tribe (a) acquired that fee title to such land, or an area that included such land, in accordance with a treaty with the United States to which such Tribe was a party, and (b) never allotted the land to a member or citizen of the Tribe.

The EPA's approval under SAFETEA expressly provided that to the extent the EPA's prior approvals of Oklahoma's environmental programs excluded Indian country, any such exclusions are superseded for the geographic areas of Indian country covered by the EPA's approval of Oklahoma's SAFETEA request.[93] The approval also provided that future revisions or amendments to Oklahoma's approved environmental regulatory programs would extend to the covered areas of Indian country (without any further need for additional requests under SAFETEA).[94]

As explained earlier, the EPA is proposing to find that the portion of Oklahoma's SIP submission addressing CAA section 110(a)(2)(D)(i)(I) does not meet the State's interstate transport obligations, because it fails to contain the necessary provisions to eliminate emissions which will contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state. Consistent with the D.C. Circuit's decision in *ODEQ* v. *EPA* and the EPA's October 1, 2020, SAFETEA approval, this disapproval if finalized as proposed will extend to areas of Indian country in Oklahoma where the State has SIP planning authority.

V. Texas SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS and the EPA Evaluation of the SIP Submission

A. Summary of TCEQ SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 Ozone NAAQS

On August 17, 2018, the Texas Commission on Environmental Quality (TCEQ) made a SIP submission addressing interstate transport of air pollution for the 2015 ozone NAAQS. The SIP submission provided TCEQ's analysis of their impact to downwind states using a framework similar to EPA's 4-Step framework and concluded that emissions from Texas will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states.

In the submittal, TCEQ provided the steps they used to assess whether emissions from Texas contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other States: (1) Identify monitors projected to be in nonattainment or have maintenance issues in future year 2023; (2) identify for further review projected nonattainment and/or maintenance monitors in other states that are impacted by emissions from Texas; and (3) determine if emissions from Texas contribute significantly to nonattainment or interfere with maintenance at the monitors identified in TCEQ Step 2. TCEQ stated that their Step 1 is the same as EPA's Step 1 and that their Steps 2 and 3 are equivalent to EPA's Step 2. TCEQ used a

[92] In *ODEQ* v. *EPA,* the D.C. Circuit held that under the CAA, a state has the authority to implement a SIP in non-reservation areas of Indian country in the state, where there has been no demonstration of tribal jurisdiction. Under the D.C. Circuit's decision, the CAA does not provide authority to states to implement SIPs in Indian reservations. *ODEQ* did not, however, substantively address any request under the separate authority in Indian country provided specifically to Oklahoma under SAFETEA. That separate authority was not invoked until the State submitted its request under SAFETEA, and was not approved until the EPA's decision, described in this section, on October 1, 2020.

[93] The EPA's prior approvals relating to Oklahoma's SIP frequently noted that the SIP was not approved to apply in areas of Indian country (consistent with the D.C. Circuit's decision in *ODEQ* v. *EPA*) located in the state. *See, e.g.,* 85 FR 20178, 20180 (April 10, 2020). Such prior expressed limitations are superseded by the EPA's approval of Oklahoma's SAFETEA request.

[94] On December 22, 2021, the EPA proposed to withdraw and reconsider the October 1, 2020 SAFETEA approval. *See https://www.epa.gov/ok/proposed-withdrawal-and-reconsideration-and-supporting-information.* The EPA is engaging in further consultation with tribal governments and expects to have discussions with the State of Oklahoma as part of this reconsideration. The EPA also notes that the October 1, 2020 approval is the subject of a pending challenge in Federal court. *Pawnee Nation of Oklahoma* v *Regan,* No. 20–9635 (10th Cir.). The EPA may make further changes to the approval of Oklahoma's program to reflect the outcome of the proposed withdrawal and reconsideration of the October 1, 2020 SAFETEA approval. To the extent any change occurs in the scope of Oklahoma's SIP authority in Indian country before the finalization of this proposed rule, such a change may affect the scope of the EPA's final action on the proposed rule.

contribution threshold of one percent of the NAAQS (0.7 ppb) in their Step 2 analysis to identify nonattainmentand/or maintenance monitors in other states that are impacted by emissions from Texas. TCEQ further stated that EPA's Steps 3 and 4 are relevant only if emissions from Texas contribute significantly to nonattainment or interfere with maintenance at downwind monitors in another state. Because Texas TCEQ concluded that it has no such emissions, EPA's Steps 3 and 4 are not addressed in the SIP submission.

To identify monitors projected to be in nonattainment or have maintenance issues in 2023, (EPA Step 1 and TCEQ Step 1), TCEQ conducted its own regional photochemical modeling using a 2012 base year. TCEQ's modeling and EPA's modeling differ in significant respects, which are discussed in detail in the EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document (EPA Region 6 TSD).[95] In particular, TCEQ used a 2012 base year, stating that (1) the year 2012 had above average temperatures across most of the U.S., except in some states in the southeast and (2) the year 2011, (which was used by the EPA in the NODA published on January 6, 2017 and the October 2017 updated modeling data for 2023),[96] was a meteorologically anomalous year for Texas and surrounding states as it was the hottest year on record and the single-worst drought year recorded in Texas since 1895. TCEQ's modeling also used some different emissions estimates for the base year and future year 2023 emissions, including different future year emissions for EGUs. There were also some differences in methods used in the model results analysis and the model performance evaluation. TCEQ also used a different methodology than the EPA to identify monitors projected to be maintenance receptors in 2023. TCEQ used only the most recent DV containing the base year 2012, (*i.e.,* the monitored DV for 2012–2014), to project a 2023 ''maintenance DV'' for assessing whether a monitor would have maintenance issues. The EPA's methodology uses the maximum of the three consecutive regulatory DVs containing the base year, which is the highest monitored DV from among the three DVs that contain the 2011 base year (*i.e.,* the 2009–2011 DV, 2010–2012 DV or and 2011–2013 DV that all contain modeled base year of 2011), to project a 2023 maximum DV for assessing whether a monitor would have maintenance issues. Texas explained that it chose to define maintenance receptors in this way to capture more recent emission reductions. The SIP submittal also included a discussion of why TCEQ believes their approach for identifying maintenance receptors is appropriate. The TCEQ modeling and differences with the EPA modeling is discussed in detail in the EPA Region 6 TSD for this action.

Based on their modeling, TCEQ provided: (1) A table of downwind receptors projected to be in nonattainment of the 2015 ozone NAAQS in 2023 and have a contribution from Texas emissions at a threshold of 0.7 ppb or greater and (2) a table of downwind maintenance receptors projected to have problems attaining and maintaining the 2015 ozone NAAQS in 2023 and have a contribution from Texas emissions at a threshold of 0.7 ppb or greater. TCEQ identified these receptors for further analysis. The nonattainment and maintenance receptors provided by TCEQ are listed in Table TX–1. TCEQ noted that except for Arapahoe County, CO (Monitor ID. 80050002) all the maintenance receptors are also nonattainment receptors.

TABLE TX–1—PROJECTED 2023 NONATTAINMENT AND MAINTENANCE RECEPTORS IDENTIFIED BY TCEQ MODELING USING 2012 BASE YEAR

Receptor (site ID, county, state)	2023 average DV (ppb)	2023 maintenance DV (ppb) (TCEQ method)	Texas contribution (ppb)
80350004, Douglas, CO	73	72	1.42
80590006, Jefferson, CO	72	73	1.26
80590011, Jefferson, CO	71	71	1.26
80690011, Larimer, CO	72	71	1.22
80050002, Arapahoe, CO	*70	71	1.15
40038001, Cochise, AZ	71	**69	1.06
60371201, Los Angeles, CA	80	78	0.76
60371701, Los Angeles, CA	80	82	0.72
60376012, Los Angeles, CA	87	86	0.9
60658001, Riverside, CA	88	85	0.73
60658005, Riverside, CA	84	83	0.71
60710001, San Bernardino, CA	71	72	0.84
60710306, San Bernardino, CA	76	77	0.81
60711004, San Bernardino, CA	91	90	0.88
60714001, San Bernardino, CA	82	79	0.86
60714003, San Bernardino, CA	94	91	0.74

*TCEQ did not include this value in their SIP narrative (this cell was blank). The EPA obtained this value from data that was in TCEQ's spreadsheet of future 2023 DVs with state contributions.

**TCEQ did not provide this calculation. The EPA used TCEQ's modeling information to calculate this value using the Relative Response Factor in TCEQ spreadsheet of future 2023 DVs with state contributions and the monitor's 2012–2014 DV (0.983 X 71 ppb, truncation applied).

TCEQ also noted that in the EPA's 2017 Transport NODA, the EPA's modeling linked Texas to six receptors based on the receptors being identified as nonattainment or maintenance receptors and based on a 0.7 ppb contribution threshold. TCEQ provided a table of those monitors along with the EPA and TCEQ modeling results for

[95] ''EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document'' (EPA Region 6 2015 Ozone Transport SIP TSD.pdf) included in Docket ID No. EPA–R06–OAR–2021–0801.

[96] The NODA and the October 2017 modeling are discussed in Section I.C of this action.

those receptors (Table TX–2).[97] TCEQ stated that the differences are due to changes the TCEQ made to modeling inputs (primarily the different base year of 2012 versus the EPA's 2011), analysis, and methodologies (primarily TCEQ's alternate maintenance receptor methodology), see the EPA Region 6 TSD included in the Regional docket for this action (Docket ID No. EPA–R06–OAR–2021–0801) for more details. With exception of the Jefferson County, CO receptor (Monitor ID. 80590011) TCEQ did not further review its linkages to any of the receptors in Table TX–2.

TABLE TX–2—TCEQ INFORMATION ON RECEPTORS LINKED TO TEXAS BY EPA MODELING IN THE TRANSPORT NODA PUBLISHED ON JANUARY 6, 2017

Receptor (site ID, county, state)	EPA 2023 average DV (ppb)	EPA Texas contribution (ppb)	TCEQ 2023 average DV (ppb)	TCEQ Texas contribution (ppb)
260050003, Allegan, MI	68.8	2.49	71	0.59
551170006, Sheboygan, WI	71.0	1.92	70	0.73
240251001, Harford, MD	71.3	0.91	65	0.69
360850067, Richmond, NY	71.2	0.77	62	0.67
361030002, Suffolk, NY	71.3	0.71	67	0.63
80590011, Jefferson, CO	69.7	1.03	71	1.26

TCEQ then used a weight of evidence approach to assess whether emissions from Texas contribute significantly to nonattainment or interfere with maintenance at the receptors listed in Table TX–1. TCEQ stated that the Texas contribution to a receptor should be deemed ''significant'' only if there is a persistent and consistent pattern of contribution on several days with elevated ozone. Consideration was given to factors such as DV trends, number of elevated ozone days, back trajectory analysis on elevated ozone days, modeled concentrations on future expected elevated ozone days, total interstate contributions at tagged monitors, and responsiveness of ozone to emissions from Texas. Based on their assessment, TCEQ concluded that emissions from Texas do not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS at any downwind monitors. Our evaluation of the TCEQ submission is further discussed in Section V.B and in the EPA Region 6 TSD for this action.

B. EPA Evaluation of the TCEQ SIP Submission

Based on the EPA's evaluation of the SIP submission, the EPA is proposing to find that TCEQ's August 17, 2018, SIP submission does not meet the State's obligations with respect to prohibiting emissions that contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state.

1. Evaluation of Information Provided by TCEQ Regarding Step 1

As explained in Section I of this action, at Step 1 of the 4-Step interstate transport framework, the EPA identifies monitoring sites that are projected to have problems attaining and/or maintaining the NAAQS (*i.e.,* nonattainment and maintenance receptors). In executing this step, TCEQ elected to rely on their own modeling and methodology for identifying receptors. The EPA is evaluating the TCEQ's modeling and methodology here at Step 1.

i. Evaluation of TCEQ's Methodology for Identifying Maintenance Receptors

As discussed in Section V.A of this action, in addition to the use of an alternative modeling platform, TCEQ also created its own method for identifying maintenance receptors. TCEQ has not adequately explained or justified how its method for identifying maintenance receptors reasonably identifies areas that will have difficulty maintaining the NAAQS. The EPA proposes to find that TCEQ has not provided a sufficient technical basis for how its chosen methodology gives meaning to the CAA's instruction that states submit good neighbor SIPs that prohibit their states' emissions from interfering with the maintenance of the NAAQS in another state.

In *North Carolina* v. *EPA,* 531 F.3d 896, 909–11 (D.C. Cir. 2008), the D.C. Circuit rejected the EPA's CAIR on the basis that the EPA had not adequately given meaning to the phrase ''interfere with maintenance'' in the good neighbor provision. Specifically, North Carolina argued that it had counties that were projected to attain the NAAQS in the future analytic year but were at risk of falling back into nonattainment due to interference from upwind sources, particularly given year-to-year variability in ozone levels. The court agreed, holding that the EPA's rule did not adequately protect ''[a]reas that find themselves barely meeting attainment.'' *Id.* at 910. Consequently, the EPA has developed a methodology, as described elsewhere in this action and used in its 2011 CSAPR and its 2016 CSAPR Update and Revised CSAPR Update, for identifying areas that may struggle to maintain the NAAQS. *See* 76 FR at 48227–28. The EPA's approach to addressing maintenance receptors was upheld in the *EME Homer City* litigation. *See* 795 F.3d 118, 136–37. It was also upheld in *Wisconsin.* 938 F.3d at 325–26. In *Wisconsin,* the court noted that four upwind states were linked only to maintenance receptors and rejected the argument that application of the same control level as the EPA imposes for those states linked to nonattainment receptors was unreasonable or unlawful absent a particularized showing of overcontrol. *Id.* at 327.

To explain the differences between TCEQ's and the EPA's methodology for identifying maintenance receptors, it is helpful to provide some additional context of how the EPA projects future air quality. The EPA's air quality modeling guidance has long recommended developing a base design value (DV)[98] (*i.e.,* the design value that will be used as a starting point to model and analyze for purposes of projecting future air quality concentrations) that is the average of three DVs spanning a five-year period, centered around one year for which an emissions inventory will be submitted (*e.g.,* if 2011 was the base emissions inventory year, a state would use monitored values from 2009–2011, 2010–2012, 2011–2013 as the starting point for projecting air quality concentrations in future years).[99] The

[97] TCEQ SIP Submission, at page 3–49 (Table 3–12).

[98] *See* FN 8.

[99] *See* FN 73.

average of these three DVs is then multiplied by a relative response factor (RRF) [100] to generate an average DV for the future year. If a receptor's average future year DV is greater than or equal to the level of the NAAQS, and the receptor has recent monitored data that violates the NAAQS, that receptor is considered a ''nonattainment'' receptor at Step 1. To identify maintenance receptors, the EPA's methodology looks to the highest DV of the three DVs used to calculate the 5-year weighted average design value (*e.g.,* in the 2011 example, if 2009–2011 had the highest design value of 2009–2011, 2010–2012, and 2011–2013). The EPA then applies the same relative response factor to that highest design value to generate a projected future maximum design value. Where a receptor's maximum design value exceeds the level of the NAAQS, the EPA has deemed those receptors to be ''maintenance'' receptors. This methodology was designed to address the D.C. Circuit's holding that the CAA's ''interference with maintenance'' prong requires states and the EPA to protect areas that may struggle with maintaining the standard in the face of inter-annual variability in ozone-conducive conditions.

In its modeling, TCEQ adopted an identical approach to the EPA's for identifying nonattainment receptors—it looked at three sets of DVs over a five-year period and averaged those DVs to generate a base year DV. TCEQ then applied a relative response factor to that base year design value to project a receptor's average design value in the future year. For its maintenance receptors, however, TCEQ used only the most recent design value of the set of three DVs, regardless of whether the most recent design value was highest or lowest, instead of considering variability in conditions over a five-year period, or using the highest DV of the three DVs making up the base year design value. TCEQ's proffered explanation for using the most recent DV to identify maintenance receptors was that the latest DV ''takes into consideration . . . any emissions reductions that might have occurred.'' [101] However, TCEQ in its submission does not explain how this methodology takes into account meteorological variability in identifying those areas that may be meeting the NAAQS or that may be projected to meet the NAAQS but may nevertheless struggle to maintain the NAAQS.

TCEQ argued that the 3-year DV used includes some meteorological variability. Unfortunately, the three years of variation that TCEQ accounted for is already built into the structure of the standard. Thus, the TCEQ method gave no consideration to the variability between calculated DVs which provides a direct indication of the difficulty a receptor will have in maintaining the standard. In other words, to determine whether a receptor will have difficulty maintaining the standard, one must consider the variation in the metric that will be used to determine compliance with the standard. An indication of the variability of a metric cannot be determined by only considering a single estimate of that metric.

TCEQ's stated purpose in using the most recent DV was to capture more recent emissions reductions. TCEQ's methodology, however, limits receptors which could be identified as maintenance receptors, compared to the EPA's methodology largely because it only looks at one design value period rather than selecting the maximum of the three DV periods EPA's methodology considers. Thus, TCEQ's methodology greatly reduces the probability that meteorological conditions which make it difficult to maintain the standard will be considered. As discussed further below, the effects of emissions trends are already captured through other aspects of the methodology to identify receptors. So, in trying to give more weight to emission reductions, by selecting only one design value (2012–2014) for its base year, TCEQ's methodology did not give any consideration to interannual variability in ozone-conducive meteorology as does the EPA's method.

The EPA's methodology, using the maximum DV which accounts for the variability in ozone concentrations and DVs due to changes in meteorology over the five years of the base year DV period, was designed to identify those areas that might struggle to maintain the NAAQS in particularly ozone conducive conditions. TCEQ claimed that the EPA's method undervalues changes in air quality due to emission reductions and overvalues changes due to variation in meteorology. TCEQ pointed out that emissions nationwide are generally trending downward as a result of Federal motor vehicle standards and other technological improvements. The EPA agrees that ozone levels generally trend downward, but there is not a steady decline from year to year in ozone concentrations. Rather, ozone levels tend to vary from year to year with some years showing an increase instead of a decrease mainly due to inter-annual variability in ozone-conducive meteorology.[102] The variation of DVs at individual monitors from year to year can be significant, even where emissions trend downwards. The EPA also assessed a number of monitored DV trends that were provided in TCEQ's SIP submission and previous TCEQ attainment demonstration SIPs indicating that there are at times large annual fluctuations upward from year to year in monitored DVs (sometimes 2–3 ppb increase in one year) that are due to variations in meteorology.[103] This is precisely why it is important to consider highly variable meteorology and its influence on DVs—the issue at the heart of the D.C. Circuit's finding on ''interference with maintenance'' in *North Carolina.* Areas that are required under the Act to attain by an attainment date may fail to attain because of a combination of both local emissions, upwind emissions, and ozone conducive meteorology, among other factors. The *North Carolina* decision made clear that in interpreting the good neighbor provision, upwind state and the EPA obligations to reduce emissions must account for variable conditions that could cause an area that is sometimes attaining the NAAQS to fall out of attainment. *See also Wisconsin,* 938 F.3d at 327 (''Variations in atmospheric conditions and weather patterns can bring maintenance receptors into nonattainment even *without* elevated emissions.'').

In addition, TCEQ claimed that its use of the 2012–2014 DV (*i.e.,* the most recent in the 5-year base period it examined) is more reliable than the EPA's method, because that more recent DV accounts for both emission reductions and because there is a shorter interval between the monitored DV and the projected DV. As we note elsewhere, the TCEQ's base year modeled inventory is 2012 emissions and the TCEQ's model projections for 2023 include the expected emission reductions from 2012 thru 2014 and to 2023. By just using the 2012–2014 DV data, TCEQ claimed they are giving weight to emission reductions during the final base years where EPA's method does not. The effect of emission reductions, however, is already factored in the method since the modeling projection to 2023 is explicitly designed to project the changes in ozone due to emission reductions from the 2012 base year emission levels. So, in fact, the EPA method does give weight to emission reductions. Furthermore, since

[100] *See* FN 53.

[101] TCEQ SIP submission at 3–39 to 3–40.

[102] *See* EPA Region 6 TSD, included in Docket ID No. EPA–R06–OAR–2021–0801.

[103] *Id.*

TCEQ agrees that the average of the DVs based on 2010–2014 ozone levels are reliable enough to use in the identification of nonattainment receptors, it is unclear how the 2012–2014 period is deemed more reliable for the maintenance test since the modeled emissions are still for 2012. We also note, as discussed throughout this action, the EPA has updated its modeling to use a 2016 base year—that is, a five year period spanning 2014–2018, and applied its methodology for defining maintenance receptors using that five year base period. Using a more recent base period (EPA's 2016v2) provides the most recent design values, shorter period of projection (2016 to 2023 versus a 2011 or 2012 base year) and a more accurate basis for projections of future air quality. We note that the EPA undertook a large collaborative multi-year effort with states (including TCEQ) and other stakeholders input and review in developing the 2016v2 emission inventories. By virtue of this update, any monitored DV used by the EPA to identify maintenance receptors in this action accounts for more recent emission reductions and provides a shorter interval between base year monitored DV and the projected future analytic year.

As discussed further in the EPA Region 6 TSD [104] for this action, the EPA has reviewed the set of 21 receptors for which Texas had contributions of 0.7 ppb or more in the EPA's 2016 base year modeling analyses, or TCEQ's modeling (2012 base year), and evaluated the results of using TCEQ's alternate maintenance methodology. For these 21 receptors, TCEQ's method resulted in 15 of the 21 2023 maintenance DVs predicted to be lower than the 2023 nonattainment DVs from the nonattainment methodology that uses the 5-year center weighted average. Of these 15 receptors, three receptors have 2023 maintenance DVs that are 3 ppb lower, five receptors have 2023 maintenance DVs that are 2 ppb lower, and seven receptors have 2023 maintenance DVs that are 1 ppb lower. In comparison, using the EPA's maintenance methodology results in all 21 2023 maintenance DVs being equal or up to 4 ppb higher than the 2023 nonattainment DVs. Again, the EPA uses the average of the three DVs that contain the base year modeled for the nonattainment methodology and the maximum of these three DVs for the maintenance methodology. Because TCEQ's maintenance methodology of just using the most recent DV (2012–2014 DV) often results in maintenance DVs lower than the 2023 nonattainment DVs methodology results, the EPA finds that the TCEQ methodology is not adequately identifying conditions when a receptor would have more difficulty maintaining the standard. In fact, the TCEQ's method also identified one receptor in their SIP submission as a nonattainment receptor in 2023 that would not have been identified as a maintenance receptor, which further highlights the concern that TCEQ's method did not adequately identify areas that may struggle to maintain the standard. TCEQ did not address whether the three years that comprise the most recent design value (*i.e.,* 2012, 2013, and 2014) had meteorological conditions highly conducive for formation of high ozone concentrations and thus would be an appropriate time period to assess whether area could have difficulty maintaining the standard and the EPA's analysis confirms that this time period is not highly conducive to ozone formation, at least for many receptors. The consequence of TCEQ's maintenance method is that it often results in lower DVs than the nonattainment test as demonstrated by our analysis, which indicates that it is often not considering conditions when an area would have difficulty maintaining the standard. It is also unreasonable to have a test that would not identify nonattainment receptors also as maintenance receptors.

TCEQ also made several additional assertions in support of their conclusion that their method for identifying maintenance receptors was the better reading of the CAA, compared to the EPA's. TCEQ claimed that its approach was more consistent with the CAA's concept of maintenance as areas that were formerly nonattainment and that have since attained and will continue to maintain by accounting for: (1) Emissions reductions occurring in the later design values of the base DV period; (2) ''commitments regarding contingency measures to address future emission reductions;'' and (3) the impact of any maintenance plans that are in place. TCEQ also asserted that the EPA's approach conflates the likelihood of attaining the standard in a future year and the ability of an attainment monitor to maintain that attainment status. Specifically, TCEQ argued that because any remedies devised to address nonattainment monitors would have to apply to maintenance monitors, a practical consequence of the EPA's approach is that it could lead to over-control and that it might require upwind states to consider or implement controls when the downwind state in which the monitor is located does not have any obligations to control local emissions. TCEQ argued that this ''conflation'' of nonattainment and maintenance results in there being no independent meaning to ''maintenance.''

With respect to the first of these assertions from TCEQ, we note that TCEQ's methodology for identifying receptors (like the EPA's) is entirely distinct from ozone designations under the Clean Air Act; neither TCEQ nor the EPA take current or presumed future designations of areas into account, and any implementation requirements like a maintenance plan under CAA section 175A, in identifying receptors. TCEQ's' discussion, therefore, of maintenance plan contingency measures or maintenance plans generally is irrelevant and misplaced. None of the areas to which Texas is linked in the EPA 2016v2 modeling has been redesignated to attainment for the 2015 ozone NAAQS, and none of the areas to which Texas is linked in its own modeling has been redesignated to attainment for that NAAQS. We also fail to see how TCEQ's approach to identifying maintenance receptors differs in any relevant respect from the EPA's approach with regard to the alleged ''conflation'' of projecting attainment in a future year rather than the ability of an attainment receptor to maintain attainment. Both TCEQ and the EPA identify maintenance receptors based on projections of air quality in a future year to determine whether the receptor will have difficulty attaining or maintaining the standard. TCEQ's arguments about overcontrol based on the application of a uniform remedy to states linked to both nonattainment and maintenance receptors were also not germane; in this case, TCEQ had identified *no* remedy to apply whatsoever because it had failed to identify that the emissions from Texas cause a problem in the first instance. The D.C. Circuit has already rejected the idea that the application of a uniform control to both nonattainment and maintenance receptors is on its face overcontrol or impermissible under the interstate transport provision. *See Wisconsin,* 938 F.3d at 327. Based on our evaluation of TCEQ's approach to identify maintenance receptors for 2023, we propose to find the State's approach is inadequate as it does not sufficiently identify maintenance receptors. Further, TCEQ had not explained how its

[104] ''EPA Region 6 2015 8-Hour Ozone Transport SIP Proposal Technical Support Document'' (EPA Region 6 2015 Ozone Transport SIP TSD.pdf) included in Docket ID No. EPA–R06–OAR–2021–0801.

approach meets the statutory requirement to address areas that, even if meeting the NAAQS, may struggle to maintain the standard in years where conditions are conducive to ozone formation. Rather, the TCEQ had created its own approach to identify these areas that they describe as designed to account for the most emission reductions possible—*i.e.,* the most recent DV of the three under analysis; an approach that likely under-identifies areas that will struggle to maintain the NAAQS and that certainly is not designed to capture potential air quality problems.

ii. Evaluation of the TCEQ Modeling

As discussed in Section V.A of this action, TCEQ conducted regional photochemical modeling to identify nonattainment and maintenance receptors in 2023 using a 2012 base year. As discussed further in the EPA Region 6 TSD, we have several concerns with the reliability of TCEQ's modeling results. States are free to develop their own modeling, but that modeling must be technically supportable, and the EPA is obligated to assess and evaluate the reliability of that technical demonstration when determining whether the Act's requirements are met.

The TCEQ's modeling underestimates future ozone levels. When the TCEQ 2023 projected concentrations are compared to 2020 and preliminary 2021 monitor values, it is clear that the TCEQ modeling is projecting an unusual decline in ozone levels without there being an unusual level of emission reductions to support the decline. The EPA compared recent monitoring values and reasonably anticipated decreases in DVs by 2023 both within Texas and in other parts of the country. These underestimations likely result in TCEQ's modeling not adequately identifying nonattainment and/or maintenance receptors in 2023. These underestimations also result in smaller projected contributions from Texas emissions to downwind states. See EPA Region 6 TSD for full analysis details.

One analysis included in the EPA Region 6 TSD examined the average amount of improvement that would have to occur for the 9 monitors with the highest measured design values in the Dallas-Ft. Worth and Houston-Galveston-Brazoria nonattainment areas (those with an observed 2018–2020 DV of 74 ppb or greater) to reach the level of ozone projected by the TCEQ modeling. The average decrease needed by 2023 to meet TCEQ's 2023 projected DVs is 7.56 ppb. Improvements of this magnitude do not occur in three years unless there is an unusually large change in emissions or a large change in meteorological conduciveness for ozone generation. TCEQ did not identify any large emission reductions not already accounted for in the modeling to be implemented in the 2021–2023 timeframe nor is the EPA aware of such a change. This information supports our finding that that TCEQ's modeling is underestimating future ozone levels in the two nonattainment areas in Texas that make up a large proportion of the total ozone and a large portion of emissions of ozone pre-cursors that transport to downwind areas. This underestimation of future year ozone levels from Texas emissions can cause both an underestimation of ozone in downwind areas and also an underestimation of Texas's impact on downwind State's ozone nonattainment and maintenance receptors.

TCEQ's modeling also underestimates 2023 ozone levels outside of the State of Texas including areas of interest in California, Colorado and the Midwest Region (Illinois, Wisconsin, and Michigan). The EPA discusses this underprediction for all of these areas in the EPA Region 6 TSD. In Table TX–3, we present only the results for the Midwest Region along with the EPA's modeling prediction. We note that TCEQ's 2023 modeled DVs are significantly lower than the EPA's 2023 modeled DVs. The table also provides recent monitored 2020 DVs and preliminary 2021 DVs, which shows that recent monitored ozone concentrations are significantly higher than TCEQ's modeling projected for 2023. TCEQ's ozone DVs for these receptors would need to drop on the order of 7–15 ppb in two to three years for TCEQ's projections to bear out. As noted previously, this would require an unusual amount of emission reductions without any control measures identified of sufficient magnitude. We note that the EPA's projected 2023 ozone DVs based on EPA 2016v2 modeling show ozone DVs that are also lower than recent monitoring data. However, EPA 2016v2 modeling projections are much closer to anticipated 2023 ozone levels as compared to TCEQ's modeling. This indicates that the EPA's modeling is more accurate in identifying nonattainment and/or maintenance receptors in the Midwest Region. While the TCEQ modeling projects much lower overall ozone levels for the Midwest Region in 2023, the modeling does tend to corroborate the projected amount emissions that Texas may be contributing to projected ozone levels at 5 of the 7 nonattainment and maintenance receptors identified in the EPA's modeling.[105] Thus, despite the differences in identification of nonattainment and maintenance receptors, both sets of modeling indicate that Texas's contribution to receptors in the Midwest Region are greater than 0.7 ppb (*i.e.,* 1 percent of the 2015 ozone NAAQS). Table TX–3 provides information on those receptors, including the amount of contribution attributed to emissions from Texas based on EPA's 2016v2 modeling and TCEQ's modeling. Despite the differences in identification of nonattainment and maintenance receptors, both sets of modeling indicate that Texas's contribution to receptors in the Midwest are greater than 0.7 ppb (*i.e.,* 1 percent of the 2015 ozone NAAQS).

TABLE TX–3—EPA AND TCEQ MODELING RESULTS FOR DOWNWIND RECEPTORS IDENTIFIED BY EPA 2016V2 MODELING

Receptor (site ID, county, state)	2023 nonattainment/ maintenance (EPA 2016v2)	EPA: 2023 average DV/ maximum DV (ppb)	TCEQ: 2023 average DV/ maintenance DV (ppb)*	Monitored 2018–2020 DV/preliminary 2019–2021 DV** (ppb)	EPA: Texas contribution (ppb)	TCEQ: Texas contribution (ppb)
170310001, Cook, IL	Maintenance	69.6/73.4	60/58	75/71	0.86	1.6.
170310032, Cook, IL	Maintenance	69.8/72.4	68/66	74/75	1.46	1.31.
170314201, Cook, IL	Maintenance	69.9/73.4	64/62	77/74	1.15	1.25.
170317002, Cook, IL	Maintenance	70.1/73.0	66/65	75/73	1.58	1.22.

[105] We note that for two of the Wisconsin receptors, TCEQ's modeling does not provide information to generate 2023 DVs, so only 5 of the 7 monitors can be compared.

TABLE TX–3—EPA AND TCEQ MODELING RESULTS FOR DOWNWIND RECEPTORS IDENTIFIED BY EPA 2016V2 MODELING—Continued

Receptor (site ID, county, state)	2023 nonattainment/ maintenance (EPA 2016v2)	EPA: 2023 average DV/ maximum DV (ppb)	TCEQ: 2023 average DV/ maintenance DV (ppb)*	Monitored 2018–2020 DV/preliminary 2019–2021 DV** (ppb)	EPA: Texas contribution (ppb)	TCEQ: Texas contribution (ppb)
550590019, Kenosha, WI	Nonattainment	72.8/73.7	67/66	74/74	1.72	1.44.
550590025, Kenosha, WI	Maintenance	69.2/72.3	No data***	74/72	1.81	No data.***
551010020, Racine, WI	Nonattainment	71.3/73.2	No data***	73/73	1.34	No data.***

* TCEQ did not provide sufficient data and analysis of the meteorology for the 2010–2014 period to support their claim that 2012–2014 period was a worst-case combination of meteorology compared to the 2010–2012 and 2011–2013 periods. If the future DV projected from this highest value is below the standard, one can be reasonably certain the receptor will not have difficulty maintaining the standard and, as such, upwind states will not interfere with maintenance in downwind states. Because the TCEQ method only looks at one DV and does not account for the variability in DVs due to meteorological conditions, it is less likely to identify maintenance receptors than the EPA method. *See https://www.epa.gov/air-trends/air-quality-design-values*

** Preliminary 2019–2021 DVs. Monitoring data from the EPA's Air Quality System (AQS) (*https://www.epa.gov/aqs*). 2021 monitoring data is preliminary and still has to undergo Quality Assurance/Quality Control analysis and be certified by the State of Texas, submitted to the EPA, and reviewed and concurred on by EPA. 2018–2020 DVs are 72 ppb and 73 ppb at the Denton County and Tarrant County monitors/receptors respectively. Preliminary 2019–2021 DVs are 74 ppb and 72 ppb at the Denton County and Tarrant County monitors/receptors respectively.

*** Kenosha, WI Monitor ID. 550590025 was installed and began operating May 13, 2013, so the first three year DV available is 2013–2015. Racine, WI Monitor ID. 551010020 was installed in April 14, 2014 so the first three year DV available is 2015–2017. TCEQ's modeling used monitored DV data for 2010–2012, 2011–2013, and 2012–2014 to project to the future year. Since these monitors do not have valid DVs for these periods, TCEQ's modeling can't be used to project 2023 values and identify if they would be nonattainment or maintenance receptors.

The EPA investigated TCEQs modeling and the underestimation for the future year. See the EPA Region 6 TSD for further information on our review. Our review indicated some underestimation bias in the base case and general model performance concerns but nothing that was a clear cause of the much lower 2023 DVs that TCEQ's modeling is projecting. For the EPA's 2016 base year modeling, the EPA undertook a large collaborative multi-year effort with states (including Texas) and other stakeholder input in developing the 2016 emission inventories including 2016v2, so that the EPA's modeling would be based on the best data available. Using a 2016 base year also provides a more recent platform that shortens the number of years to project emission changes, reducing uncertainties in the 2023 projection compared to TCEQ's projection from a 2012 base to 2023 or the EPA's earlier 2011 base year modeling. Use of a more recent 2016 base year also allows for the use of monitored DVs from a more recent period. The combination of these and other issues discussed in the EPA Region 6 TSD result in less model uncertainty compared to TCEQ's 2012 base year modeling and has provided a better estimate of 2023 ozone levels and therefore, we believe a more reliable tool for predicting which areas of the country will be nonattainment or have difficulty maintaining the standard as well as assessing contributions from upwind states.

The EPA's modeling using both 2011 and 2016 base year periods identified that Texas was linked to nonattainment and/or maintenance receptors in 2023 in the Midwest Region (Illinois, Wisconsin, and Michigan), while TCEQ's modeling using a 2012 base year indicated only linkages to western receptors. As discussed above and in the EPA Region 6 TSD, the TCEQ's modeling is underestimating projected ozone levels in the Midwest Region for 2023. If TCEQ's 2023 modeled DVs were closer to recent observed monitoring data and anticipated 2023 monitored DVs, TCEQ would likely have also identified nonattainment and/or maintenance receptors in the Midwest Region.

To summarize, TCEQ did its own modeling at Step 1. Our analysis shows that TCEQ's modeling likely underestimates ozone levels at potential receptors and that TCEQ's methodology for identifying maintenance receptors used to identify maintenance receptors fails to reasonably identify areas that will have difficulty maintaining the NAAQS.

2. Evaluation of Information Provided by TCEQ Regarding Step 2

TCEQ, like the EPA, used a 1 percent of the ozone NAAQS (or 0.7 ppb) as the ''linkage'' threshold to identify states as ''linked'' for contributions it made to areas with projected air quality problems. Although TCEQ asserted that the EPA treats the 1 percent threshold as the threshold by which the EPA determines ''significant contribution'' this is in fact incorrect. The EPA, like TCEQ, uses the 1 percent contribution threshold to identify those linkages between a contributing upwind state and a receptor projected to have air quality problems that warrant further review and additional analysis. We therefore endorse TCEQ' use of the 1 percent contribution threshold to identify linkages requiring further analysis. However, because we propose to disapprove TCEQ's identification of nonattainment and/or maintenance receptors (at Step 1) due to underestimations in TCEQ's modeling and their unsupported methodology of identifying maintenance receptors, their submission as to Step 2 is also flawed. We note, however, that even in its own modeling, TCEQ has identified nonattainment and/or maintenance receptors to which it contributed more than 1 percent of the NAAQS (*i.e.,* identified linkages warranting additional analysis at Step 3).

3. Results of the EPA's Step 1 and Step 2 Modeling and Findings for Texas

As described in Section I and elsewhere in this action, the EPA performed air quality modeling using the 2016v2 emissions platform to project design values and contributions for 2023. This data was examined to determine if Texas contributes at or above the threshold of 1 percent of the 2015 ozone NAAQS (0.70 ppb) to any downwind nonattainment or maintenance receptor. As shown in Table TX–4, the data [106] indicate that in 2023, emissions from Texas are projected to contribute greater than 1 percent of the standard to both

[106] Design values and contributions at individual monitoring sites nationwide are provided in the file: ''2016v2_DVs_state_contributions.xlsx'', which is included in docket ID No. EPA–HQ–OAR–2021–0663.

nonattainment and maintenance-only receptors in the Chicago, IL–IN–WI nonattainment area (4 Cook County, IL receptors and 2 Kenosha County, WI receptors) and the Milwaukee, WI nonattainment area (one Racine County receptor).[107]

TABLE TX–4—PROJECTED NONATTAINMENT AND MAINTENANCE RECEPTORS WITH TEXAS LINKAGES BASED ON EPA 2016V2

Receptor (site ID, county, state)	Nonattainment/maintenance	2023 average DV (ppb)	2023 maximum DV (ppb)	Texas contribution (ppb)
170310001, Cook, IL	Maintenance	69.6	73.4	0.86
170310032, Cook, IL	Maintenance	69.8	72.4	1.46
170314201, Cook, IL	Maintenance	69.9	73.4	1.15
170317002, Cook, IL	Maintenance	70.1	73.0	1.58
550590019, Kenosha, WI	Nonattainment	72.8	73.7	1.72
550590025, Kenosha, WI	Maintenance	69.2	72.3	1.81
551010020, Racine, WI	Nonattainment	71.3	73.2	1.34

We recognize that the results of the EPA (2011 and 2016 base year) and TCEQ (2012 base year) modeling indicated different receptors and linkages at Steps 1 and 2 of the 4-Step interstate transport framework. These differing results regarding receptors and linkages can be affected by the varying meteorology from year to year, but we do not think the differing results mean that the modeling or the EPA or the State's methodology for identifying receptors or linkages is inherently unreliable. Rather, the three separate modeling runs all indicated: (1) There were receptors that would struggle with nonattainment or maintenance in the future; and (2) Texas was linked to some set of these receptors, even if the receptors and linkages differed from one another in their specifics (*e.g.,* a different set of receptors were identified to have nonattainment or maintenance problems, or Texas was linked to different receptors in one modeling run versus another). These results indicate that emissions from Texas were substantial enough to generate linkages at Steps 1 and 2 to some downwind receptors, under varying assumptions and meteorological conditions, even if the precise set of linkages changed between modeling runs. Under these circumstances, we think it is appropriate to proceed to a Step 3 analysis to determine what portion of emissions from Texas should be deemed ''significant.'' In doing so, we are not agreeing with the methods and assumptions contained in TCEQ's modeling (see previous discussion and the EPA Region 6 TSD included in the docket for this proposal for further discussion on evaluation of that modeling), or that we consider our own earlier modeling to be of equal reliability relative to more recent modeling. However, where alternative or older modeling generated linkages, even if those linkages differ from linkages in the EPA's most recent set of modeling (EPA 2016v2), that information provides further evidence, not less, in support of a conclusion that the State is required to proceed to Step 3 to further evaluate its emissions.

Therefore, based on the EPA's evaluation of the information submitted by TCEQ and based on the EPA 2016v2 modeling results for 2023, the EPA proposes to find that Texas is linked at Steps 1 and 2 and has an obligation to assess potential emissions reductions from sources or other emissions activity at Step 3 of the 4-Step framework.

4. Evaluation of Information Provided by TCEQ Regarding Step 3

At Step 3 of the 4-Step interstate transport framework, a state's emissions are further evaluated, considering multiple factors, including air quality and cost considerations, to determine what, if any, emissions significantly contribute to nonattainment or interfere with maintenance and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

To effectively evaluate which emissions in the state should be deemed ''significant'' and therefore prohibited, states generally should prepare an accounting of sources and other emissions activity for relevant pollutants and assess potential additional emissions reduction opportunities and resulting downwind air quality improvements. The EPA has consistently applied this approach (*i.e.,* Step 3 of the 4-Step interstate transport framework) when identifying emissions contributions that the Agency has determined to be ''significant'' (contribution to nonattainment or interfere with maintenance) in each of its prior Federal, regional ozone transport rulemakings, and this interpretation of the statute has been upheld by the Supreme Court. *See EME Homer City,* 572 U.S. 489, 519 (2014). While the EPA has not directed states that they must conduct a Step 3 analysis in precisely the manner the EPA has done in its prior regional transport rulemakings, state implementation plans addressing the obligations in CAA section 110(a)(2)(D)(i)(I) must prohibit ''any source or other type of emissions activity within the State'' from emitting air pollutants which will contribute significantly to downwind air quality problems. Thus, states must complete something similar to the EPA's analysis (or an alternative approach to defining ''significance'' that comports with the statute's objectives) to determine whether and to what degree emissions from a state should be ''prohibited'' to eliminate emissions that will ''contribute significantly to nonattainment in, or interfere with maintenance of'' the NAAQS in any other state. TCEQ did not demonstrate such an analysis in their SIP submission. We therefore propose that TCEQ was required to analyze emissions from the sources and other emissions activity from within the State to determine whether its contributions were significant, and we propose to disapprove its submission because Texas failed to do so.

Instead, as noted in Section V.A of this action, TCEQ interpreted the Act's requirements as only requiring an

[107] These modeling results are consistent with the results of a prior round of 2023 modeling using the 2016v1 emissions platform which became available to the public in the fall of 2020 in the Revised CSAPR Update, as noted in Section I of this action. That modeling showed that Texas had a maximum contribution greater than 0.70 ppb to at least one nonattainment or maintenance-only receptor in 2023. These modeling results are included in the file ''Ozone Design Values And Contributions Revised CSAPR Update.xlsx'' in Docket No. EPA–HQ–OAR–2021–0663.

analysis of emission reductions where ''there is a persistent and consistent pattern of contribution on several days with elevated ozone.'' TCEQ asserted that it would make the determination of whether such pattern existed based on a weight-of-evidence approach that takes into consideration air quality factors such as: Current attainment status of the monitors, design value trends, the meteorological conditions that lead to high ozone formation at the monitor, the number of days with elevated observed ozone, back trajectories, Texas' relative contribution on modeled high ozone days, Texas' contribution as part of the collective interstate contribution to future modeled DVs, alternate contribution method analysis, and model sensitivity runs to reductions of Texas' emissions on receptors. However, TCEQ stated that it did not consider or analyze all factors for every monitor. Thus, different factors were analyzed for the receptors in different regions (Colorado, Arizona, and Southern California). The EPA has reviewed the different factors that TCEQ provided for each of the regions in the EPA Region 6 TSD, but we will provide a brief summary of the evaluation below. TCEQ also asserted that use of the 1 percent threshold as the ''sole'' definition of significant contribution for the 2015 ozone NAAQS is inappropriate. Based on the application of selected factors for each of the monitors to which TCEQ's modeling found that it was linked, TCEQ concluded that none of its contributions to any other states were significant.

As explained above, TCEQ has mischaracterized the EPA's interpretation of the CAA in stating that the EPA defines significant contribution ''solely'' using a 1 percent threshold. The EPA, like TCEQ, uses the 1 percent threshold to identify areas for further analysis. The difference is that the EPA in past analyses has examined potential emission reductions in linked upwind states and the air quality impacts at downwind receptors that would result from the implementation of those reductions to assess which contributions are ''significant.'' This interpretation of significant contribution, as discussed above, has been upheld by the Supreme Court and the D.C. Circuit.

As an initial matter, the EPA believes source apportionment modeling, as performed by the EPA and also by TCEQ, to determine which states are linked is an appropriate tool to identify impacts that are persistent enough to impact a downwind receptors ability to attain or maintain the standard. This approach is described in more detail above in Section II.B.4 of this action, but, in summary, averages the contributions from an upwind state for up to 10 days, which is preferred, (but a minimum 5 days) at a given receptor. Given the ozone standard is an average of the fourth high value from each of three years, the EPA technique, also used by Texas, is appropriate to identify impacts of sufficient persistence to impact a downwind receptor's ability to attain or maintain the standard.

The EPA reviewed TCEQ's evaluation of the current attainment status of the monitors and design value trends, and concludes, as described in more detail in the EPA Region 6 TSD, that the provided information does not support the large decreases in ozone levels that TCEQ's modeling projects will occur by 2023. The analysis for California and Colorado receptors provides evidence that TCEQ's photochemical modeling is overestimating the ozone reductions expected at these receptors between 2012 and 2023 and actually presents evidence that more nonattainment and/or maintenance receptors should have been identified.

The EPA also reviewed the trends in the number of high ozone days per year provided by TCEQ for Colorado and California. While this data supports that the number of ozone exceedance days is improving, neither the analysis of the number of high ozone days in Colorado or California provide any evidence to refute the TCEQ's photochemical modeling results that show these areas should be considered nonattainment and/or maintenance receptors. TCEQs modeling overestimates ozone reductions yet still shows Texas linked to receptors at both nonattainment and maintenance levels in 2023.

The TCEQ cited a conceptual model of ozone formation for areas in Southern California. TCEQ indicated that Southern California is isolated and transport into the basin is unlikely on a frequent basis, but this information does not refute the TCEQ's modeling. As discussed in Section III.B.3 of this action, photochemical modeling is the most sophisticated tool available to estimate future ozone levels and contributions to those modeled future ozone levels. Consideration of the different processes that affect primary and secondary pollutants at the regional scale in different locations is fundamental to understanding and assessing the effects of emissions on air quality concentrations. TCEQ's modeling showed transport at 10 monitors having contributions greater than 0.7 ppb on average for the 5–10 days used in the modeling analyses. Considering the form of the standard, this is a sufficient number of days to determine if an impact is persistent enough to impact an area's ability to attain or maintain the standard.

TCEQ used the National Oceanic and Atmospheric Administration (NOAA) HYSPLIT [108] model to produce back trajectories for all the monitored ozone exceedance days (2007–2016) for the five receptors in Colorado and 10 receptors in Southern California to evaluate how many of the back trajectories went through Texas. TCEQ also used data from these back trajectories to do an endpoint count analysis. We note that we have several concerns with how TCEQ performed the back trajectories including start time and heights, length (number of hours) of the back trajectory, inappropriate removal of some back trajectories based on start height, center-line height touch down, and trajectory center-line height when over Texas, and inappropriate counting of trajectories by not considering that the center-line represents the centerline of a much wider area of air parcels that could have reached the monitor/receptor. Due to these concerns, as discussed in more detail in the EPA Region 6 TSD, the EPA finds the results of TCEQ's back trajectory and endpoint analysis flawed (underestimates back trajectories that reach Texas) and do not provide evidence that refutes the TCEQ photochemical modeling analysis results.

We note that even valid back trajectories are of limited use as HYSPLIT simply estimates the path a parcel of air backward in hourly steps for a specified length of time. HYSPLIT estimates the central path in both the vertical and horizontal planes. The HYSPLIT central path represents the centerline with the understanding that there are areas on each side horizontally and vertically that also contribute to the concentrations at the end point. The horizontal and vertical areas that potentially contribute to concentrations at the endpoint (monitor) grow wider from the centerline the further back in time the trajectory goes. Therefore, a HYSPLIT centerline does not have to pass directly over emissions sources or emission source areas, but merely relatively near emission source areas for those areas, to contribute to concentrations at the trajectory endpoint. The EPA relies on back trajectory analysis as a corollary analysis along with observation-based meteorological wind fields at multiple heights to examine the general plausibility of the photochemical model

[108] *See* FN 34.

''linkages.'' Since the back trajectory calculations do not account for any air pollution formation, dispersion, transformation, or removal processes as influenced by emissions, chemistry, deposition, etc., the trajectories cannot be used to develop quantitative contributions. Therefore, back trajectories cannot be used to quantitatively evaluate the magnitude of the existing photochemical contributions from upwind states to downwind receptors. It is interesting to note that TCEQ's analysis of the back trajectories indicates that the 2012 meteorology used by TCEQ seemed to yield more back trajectories that reach Texas than most years for many of the Colorado monitors. This seems to be consistent with TCEQ identifying linkages to Colorado when the EPA's modeling of 2016 does not.

TCEQ performed an alternate contribution analysis for the ten California receptors and the five Colorado receptors using all days modeled in 2023 that had values over 70 ppb rather than focus on just the 5–10 highest values under the EPA's technique. Particularly for California, this meant many more days could be included in the average which had the effect of showing a smaller estimated contribution. We believe it is appropriate to focus on the highest values as these are the ones that ultimately will have to be reduced for the standard to be attained. As discussed in the EPA Region 6 TSD, the EPA's review of TCEQ's alternate contribution method analysis for California and Colorado receptors is that it does not provide substantial evidence that refutes the TCEQ's photochemical modeling analysis results, including the contribution analysis using the EPA's contribution methodology.

TCEQ provided an analysis of collective interstate contribution to the 2023 DV for the five Colorado and ten California receptors. The collective interstate contribution at tagged Colorado receptors ranges from 9.32% to 10.27%. The collective interstate contribution at tagged California receptors ranges from 3.2% to 4.58%. TCEQ argues that these are small percentages (Colorado and California) and not as high as the collective interstate contribution percentages the EPA calculated for monitors in Eastern States, which ranged from 17% to 67%. TCEQ also notes that a significant portion of the tagged Colorado monitors' 2023 modeled DVs is due to background emissions (sum of contributions from to biogenic, fires, and boundary conditions). For the California receptors TCEQ argues that these percentages are small compared to Intra-State contribution.

As an initial matter, the EPA is not solely relying on TCEQ's findings of linkages to Colorado and California but is also relying on its own findings of linkages to areas in the Midwest Region. As such, TCEQ's analysis of relative contributions to Colorado and California does not provide justification for not addressing downwind impacts. Nonetheless, EPA has found in the past that certain California receptors are so heavily impacted by local emissions, and total upwind contribution is so low, that those receptors may not be considered to be affected by interstate ozone transport. *See* 81 FR 15200 (Mar. 22, 2016). However, this is a narrow circumstance that does not apply in the vast majority of cases and has never been applied outside of California. EPA has previously found, for instance, that receptors in Colorado are heavily impacted by upwind-state contribution. *See* 82 FR 9155 (Feb. 3, 2017); 81 FR 71991 (Oct. 19, 2016). EPA need not draw any conclusions here regarding whether the California sites TCEQ identified should or should not be considered receptors for ozone-transport purposes. EPA affirms, contrary to TCEQ's suggestion, that the Colorado receptors TCEQ analyzed are impacted by upwind state contributions. However, the EPA's finding that Texas is linked to receptors in other states is based on still other linkages found in EPA's modeling to receptors in other states, which are clearly impacted by the collective contribution of multiple upwind states, including Texas. Under CAA section 110(a)(2)(D)(i)(I) downwind states are not obligated to reduce emissions on their own to resolve nonattainment or maintenance problems. Rather, states are obligated to eliminate their own significant contribution or interference with the ability of other states to attain or maintain the NAAQS.

TCEQ also performed photochemical modeling analysis using the Direct Decoupled Method (DDM) tool for receptors in Colorado. DDM provides a first derivative of the changes in ozone (linear relationship where the DDM value is the slope of the line for changes in ozone) resulting from changes in NO_X emissions from all Texas' NO_X emissions. The DDM modeling does show some response to Texas NO_X emissions but from the scale it is hard to discern the level of response but it appears to be in the 0–2 ppb range in general with some values in the 0.2 –2 ppb range for modeled values over 60 ppb. Since the modeling has underprediction and underestimation issues, these values could be higher. Not surprisingly, the DDM tool shows that monitors in Colorado are much more responsive to intra-state reductions than reductions in Texas. That said, the results of the DDM tool showing only a relatively small response to reductions is not inconsistent with the finding that Texas emissions contribute significantly to elevated readings in Colorado. As has been discussed elsewhere, the EPA believes a contribution of 1 percent of the standard is an appropriate threshold such that further analysis is warranted.

Overall, these additional analyses performed by TCEQ do not provide sufficient evidence to refute the modeling results that TCEQ's modeling indicates downwind nonattainment and/or maintenance receptors in Colorado and Southern California are impacted by Texas emissions and Texas' contribution is 0.7 ppb or greater.[109] In fact, the monitored ozone design value trends provide evidence that future year modeled ozone levels are underestimated by TCEQ's modeling and there are likely more receptors that should have been identified with additional potential linkages. Although Texas asserted that its additional air quality factor analysis is a permissible way to interpret which contributions are ''significant'' because that analysis examines whether there was a ''persistent and consistent pattern of contribution on several days with elevated ozone'' we find that such pattern is already established by a modeled linkage at Step 2.

In addition, EPA 2016v2 modeling using 2016 base year meteorology indicates linkages from Texas to receptors in the Midwest Region but does not indicate impacts from Texas emissions on the Colorado and other western receptors identified by TCEQ. With a different base period such as TCEQ's 2012 base period meteorology and the EPA's 2016 base period meteorology, it is not uncommon that the potential downwind nonattainment or maintenance receptors could change. These differing results about receptors and linkages can be affected by the varying meteorology from year to year and the selection of different base years, but we do not think the differing results mean that the modeling or the EPA methodology for identifying receptors or linkages is inherently unreliable. Rather, these separate modeling runs indicated (1) that there were receptors that would

[109] TCEQ also identified a monitor in Cochise County, Arizona (ID 40038001), but the monitor's recent DVs are below the NAAQS. From AQS, the 2014–2016 and 2015–2017 DVs are each 65 ppb; 2016–2018, 2017–2019, and 2018–2020 DVs are 66 ppb; and preliminary 2019–2021 DV is 66 ppb.

struggle with nonattainment or maintenance in the future, and (2) that Texas was linked to some set of these receptors, even if the receptors and linkages differed from one another in their specifics (*e.g.,* a different set of receptors were identified to have nonattainment or maintenance problems, or Texas was linked to different receptors in one modeling run versus another). We think this common result indicates that Texas's emissions were substantial enough to generate linkages at Steps 1 and 2 to some set of downwind receptors, under varying assumptions and meteorological conditions, even if the precise set of linkages changed between modeling runs.

In sum, the EPA's more recent and robust 2016 base year modeling platform indicates that Texas is linked to several receptors in the Midwest Region as does the EPA's earlier 2011 base year modeling. TCEQ's 2012 base case modeling showed linkages to states in the west. As discussed, the EPA does not find the additional weight of evidence evaluations conducted by TCEQ provide compelling reasons to discount the impacts indicated in Colorado and California by the TCEQ modeling. In fact, we think TCEQ's modeling likely underestimates these issues. We therefore propose that Texas was required to analyze emissions from the sources and other emissions activity from within the State to determine whether its contributions were significant, and we propose to disapprove its submission because Texas failed to do so.

5. Evaluation of Information Provided by TCEQ Regarding Step 4

Step 4 of the 4-Step interstate transport framework calls for development of permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. Texas indicated that because a number of counties in its state had been designated nonattainment for the 2015 ozone NAAQS, there could be attainment demonstration and potential controls contemplated in association with those nonattainment designations.[110] However, the State's interstate transport submission did not revise its SIP to identify any specific emission reductions, nor did it include a revision to its SIP to ensure any such reductions were permanent and enforceable. The other control measures identified in TCEQ's submission are, as noted by TCEQ, already adopted and implemented measures and do not contain an evaluation of additional emission control opportunities (or establish that no additional controls are required). As a result, the EPA proposes to disapprove TCEQ's submittal on the separate, additional basis that the Texas has not included permanent and enforceable emissions reductions in its SIP as necessary to meet the obligations of CAA section 110(a)(2)(d)(i)(I).

6. Conclusion

Based on the EPA's evaluation of TCEQ's SIP submission, the EPA is proposing to find that the Texas August 17, 2018, SIP submission pertaining to interstate transport of air pollution does not meet the State's interstate transport obligations, because it fails to contain the necessary provisions to eliminate emissions that will contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state.

VI. Proposed Action

We are proposing to disapprove the SIP submissions from Arkansas, Louisiana, Oklahoma, and Texas pertaining to interstate transport of air pollution which will significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in other states. Under CAA section 110(c)(1), the disapprovals would establish a 2-year deadline for the EPA to promulgate FIPs for these states to address the CAA section 110(a)(2)(D)(i)(I) interstate transport requirements pertaining to significant contribution to nonattainment and interference with maintenance of the 2015 ozone NAAQS in other states, unless the EPA approves SIPs that meet these requirements. Disapproval does not start a mandatory sanctions clock for Arkansas, Louisiana, Oklahoma, or Texas.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget for review

B. Paperwork Reduction Act (PRA)

This proposed action does not impose an information collection burden under the PRA because it does not contain any information collection activities

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action merely proposes to disapprove a SIP submission as not meeting the CAA.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This proposed action disapproving the portion of Oklahoma's SIP submission addressing the State's interstate transport obligations under CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS will apply to certain areas of Indian country as discussed in Section IV.C of this action, and therefore, has tribal implications as specified in E.O. 13175 (65 FR 67249, November 9, 2000). However, this proposed action will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. This proposed action will not impose substantial direct compliance costs on federally recognized tribal governments because no actions will be required of tribal governments. This proposed action will

[110] Pointing to anticipated upcoming emission reductions, even if they were not included in the analysis at Steps 1 and 2, is not sufficient as a Step 3 analysis, for the reasons discussed in Section V.B.4 of this action. In this section, we explain that to the extent such anticipated reductions are not included in the SIP and rendered permanent and enforceable, reliance on such anticipated reductions is also insufficient at Step 4.

also not preempt tribal law as no Oklahoma tribe implements a regulatory program under the CAA, and thus does not have applicable or related tribal laws. Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes (May 4, 2011), the EPA will offer consultation to tribal governments whose lands are located within the exterior boundaries of the State of Oklahoma that may be affected by this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it merely proposes to disapprove a SIP submission as not meeting the CAA.

H. Executive Order 13211, Actions That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. This action merely proposes to disapprove a SIP submission as not meeting the CAA.

K. CAA Section 307(b)(1)

Section 307(b)(1) of the CAA governs judicial review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the D.C. Circuit: (i) When the agency action consists of ''nationally applicable regulations promulgated, or final actions taken, by the Administrator,'' or (ii) when such action is locally or regionally applicable, if ''such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.'' For locally or regionally applicable final actions, the CAA reserves to the EPA complete discretion whether to invoke the exception in (ii).[111]

The EPA anticipates that this proposed rulemaking, if finalized, would be ''nationally applicable'' within the meaning of CAA section 307(b)(1) because it would take final action on SIP submittals for the 2015 ozone NAAQS for four states, which are located in three different Federal judicial circuits. It would apply uniform, nationwide analytical methods, policy judgments, and interpretation with respect to the same CAA obligations, *i.e.,* implementation of interstate transport requirements under CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS for states across the country, and final action would be based on this common core of determinations, described in further detail below.

If the EPA takes final action on this proposed rulemaking[, in the alternative,] the Administrator intends to exercise the complete discretion afforded to him under the CAA to make and publish a finding that the final action (to the extent a court finds the action to be locally or regionally applicable) is based on a determination of ''nationwide scope or effect'' within the meaning of CAA section 307(b)(1). Through this rulemaking action (in conjunction with a series of related actions on other SIP submissions for the same CAA obligations), the EPA interprets and applies section 110(a)(2)(d)(i)(I) of the CAA for the 2015 ozone NAAQS based on a common core of nationwide policy judgments and technical analysis concerning the interstate transport of pollutants throughout the continental U.S. In particular, the EPA is applying here (and in other proposed actions related to the same obligations) the same, nationally consistent 4-Step framework for assessing interstate transport obligations for the 2015 ozone NAAQS. The EPA relies on a single set of updated, 2016 base year photochemical grid modeling results of the year 2023 as the primary basis for its assessment of air quality conditions and contributions at Steps 1 and 2 of the 4-Step framework. Further, the EPA proposes to determine and apply a set of nationally consistent policy judgments to apply the 4-Step framework. The EPA has selected a nationally uniform analytic year (2023) for this analysis and is applying a nationally uniform approach to nonattainment and maintenance receptors and a nationally uniform approach to contribution threshold analysis.[112] For these reasons, the Administrator intends, if this proposed action is finalized, to exercise the complete discretion afforded to him under the CAA to make and publish a finding that this action is based on one or more determinations of nationwide scope or effect for purposes of CAA section 307(b)(1).[113]

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Ozone.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: February 1, 2022.

Earthea Nance,

Regional Administrator, Region 6.

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[111] In deciding whether to invoke the exception by making and publishing a finding that an action is based on a determination of nationwide scope or effect, the Administrator takes into account a number of policy considerations, including his judgment balancing the benefit of obtaining the D.C. Circuit's authoritative centralized review versus allowing development of the issue in other contexts and the best use of agency resources.

[112] A finding of nationwide scope or effect is also appropriate for actions that cover states in multiple judicial circuits. In the report on the 1977 Amendments that revised section 307(b)(1) of the CAA, Congress noted that the Administrator's determination that the ''nationwide scope or effect'' exception applies would be appropriate for any action that has a scope or effect beyond a single judicial circuit. See H.R. Rep. No. 95–294 at 323, 324, reprinted in 1977 U.S.C.C.A.N. 1402–03.

[113] The EPA may take a consolidated, single final action on all of the proposed SIP disapproval actions with respect to obligations under CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS. Should the EPA take a single final action on all such disapprovals, this action would be nationally applicable, and the EPA would also anticipate, in the alternative, making and publishing a finding that such final action is based on a determination of nationwide scope or effect.