

**North Carolina Certification For
Clean Air Act Sections 110(a)(1) and (2)
Infrastructure State Implementation Plan for the
2015 8-Hour Ozone National Ambient Air Quality Standard**

The United States Environmental Protection Agency (EPA) revised the 8-hour ground-level ozone National Ambient Air Quality Standard (NAAQS) on October 26, 2015 by lowering the primary (health-based) and secondary (welfare-based) standards to 0.070 parts per million (ppm), or 70 parts per billion (ppb) from the previous 0.075 ppm standard.

On November 6, 2017, EPA designated the entire state of North Carolina “Unclassifiable/Attainment” for the 2015 8-hour ozone NAAQS (based on certified monitoring data for 2014-2016).¹ As of the end of the 2017 ozone season, there are no ozone monitors in violation of the 2015 ozone NAAQS based on certified ozone monitoring data for 2015-2017.

When EPA revises an existing standard, Clean Air Act (CAA) Sections 110(a)(1) and (a)(2) require each state to revise their State Implementation Plan (SIP) to show they have the authority and programs needed to implement, maintain, and enforce the standard. States must submit an infrastructure SIP within three years after a federal standard is adopted or revised.

This document serves as North Carolina’s infrastructure SIP for the 2015 8-hour ozone NAAQS. The North Carolina Division of Air Quality (DAQ) relied on EPA’s September 13, 2013 memorandum, “*Guidance on Infrastructure State Implementation Plan (SIP) Elements under CAA Sections 110(a)(1) and 110(a)(2)*” for preparing this certification demonstration. Attachment 1 contains copies of EPA memorandums and notices used to develop the Infrastructure SIP. Each of the basic or infrastructure requirements, listed below, identify the corresponding North Carolina State rule or general statute implementing each SIP element.

The State rules can be found on the DAQ’s website (www.ncair.org). The North Carolina General Statutes (NCGS) referenced in this document can be found on the North Carolina General Assembly website (<http://www.ncleg.net/gascripts/statutes/Statutes.asp>). These statutes are stated as reference material, and should not be adopted as part of North Carolina’s SIP.

¹ *Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards (NAAQS)*, Final Rule, 82 FR 54232, November 16, 2017. This final rule became effective on January 16, 2018.

Emission Limits and Other Control Measures [§ 110(a)(2)(A)]:

Section 110(a)(2)(A) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

"include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this [Act]."

15A North Carolina Administrative Code (NCAC) 2D .0500, "*Emission Control Standards*", serves to establish emission limits for ozone precursor pollutants. On November 22, 2016, the DAQ submitted to EPA proposed revisions to NCAC 2D .0535, *Excess Emissions Reporting and Malfunctions*, and adopted Rule 15A NCAC 2D .0545, *Treatment of Malfunction Events and Work Practices for Startup and Shutdown Operations*. These rules were prepared to address deficiencies cited in EPA's June 12, 2015 final SIP call and finding of substantial inadequacy with respect to the treatment of excess emissions during periods of startup, shutdown and malfunction (SSM). Subsequently, On April 24, 2017, the U.S. Court of Appeals for the D.C. Circuit issued an order at EPA's request, placing oral arguments in the case in abeyance indefinitely and requiring status updates from EPA on its review of the SSM SIP Call for reconsideration every 90 days. The DAQ will adjust the two rules, as needed, based on the Court's final decision.

The following rules and state law address additional control measures, means, and techniques:

- 15A NCAC 2D .0600 "*Monitoring: Recordkeeping: Reporting*"
- 15A NCAC 2D .0900 "*Volatile Organic Compounds*"
- 15A NCAC 2D .1000 "*Motor Vehicle Emission Control Standards*"
- 15A NCAC 2D .1400 "*Nitrogen Oxides*"
- 15A NCAC 2D .1800 "*Control of Odors*"
- 15A NCAC 2D .1900 "*Open Burning*"
- 15A NCAC 2D .2000 "*Transportation Conformity*"
- 15A NCAC 2D .2200 "*Special Orders*"
- 15A NCAC 2D .2300 "*Banking Emission Reduction Credits*"
- 15A NCAC 2D .2600 "*Source Testing*"
- 2002 North Carolina Clean Smoke Stacks Act (CSA), Session Law 2002-4 (NCGS 143-215.107d)
 - On September 26, 2011, the system-wide nitrogen oxide (NOx) and sulfur dioxide (SO₂) emissions caps in the CSA became federally enforceable as part of North Carolina's SIP (76 FR 59250)

Federal Implementation Plan – Cross State Air Pollution Rule (CSAPR) Phase I and II NOx and SO₂ budgets: North Carolina electricity generating units (EGUs) are subject to the Phase I annual NOx and SO₂ budgets (beginning January 2015) and NOx ozone season budgets (beginning May 2015). North Carolina EGUs are also subject to the Phase II annual NOx and

SO₂ budgets (beginning January 2017), but not the Phase II NOx ozone season budgets (beginning May 2017). North Carolina EGUs are complying with the Phase I annual and ozone season and Phase II annual budgets. Although North Carolina is not relying on CSAPR for maintaining compliance with the ozone NAAQS, CSAPR is a federally enforceable program that has yielded residual NOx and SO₂ emissions reduction benefits.

NCGS 143-215.107(a)(5), *Air quality standards and classifications*, provides the North Carolina Environmental Management Commission (EMC) with the statutory authority, “To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards.”

Ambient Air Quality Monitoring/Data System [§ 110(a)(2)(B)]:

Section 110(a)(2)(B) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

“(B) provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to—

- (i) monitor, compile, and analyze data on ambient air quality, and
- (ii) upon request, make such data available to the Administrator.”

The DAQ's Annual Monitoring Network Plan provides for an ambient air quality monitoring system for ozone in the State. The development and implementation of the ozone monitoring network is ongoing to ensure compliance with the latest monitoring strategies and protocols. As of the date of this infrastructure SIP submittal, North Carolina's ozone monitoring strategy is set forth in the 2017-2018 Annual Monitoring Network Plan approved by EPA on October 25, 2017. As with previous plan submittals, North Carolina's plan was prepared and is implemented in accordance with all of the ambient air quality monitoring network requirements specified in:

- 40 CFR part 53 ("Ambient Air Monitoring Reference and Equivalent Methods"), and
- 40 CFR part 58 ("Ambient Air Quality Surveillance")

In addition, on July 22, 2015, the DAQ submitted to EPA North Carolina's five-year network assessment plan for 2015 to 2020. The five-year network assessment is a look forward at the projected needs of the ambient air monitoring program for the next five years. The need for changes to the program is driven by a number of factors, including: 1) changes to the national ambient air quality standards due to better understanding of the science, 2) increases in population or shifts in that population, 3) new emission sources, and 4) changes in technology. Changes to the network may also be necessary due to changes in funding or priorities. These submissions fulfill the monitoring requirements for the 8-hour ozone NAAQS.

NCGS 143-215.107(a)(2), *Air quality standards and classifications*, provides the North Carolina EMC with the statutory authority “To determine by means of field sampling and other studies, including the examination of available data collected by any local, State or federal agency or any person, the degree of air contamination and air pollution in the State and the several areas of the State.”

Programs for Enforcement of Control Measures and for Construction or Modification of Stationary Sources [§ 110(a)(2)(C)]:

Section 110(a)(2)(C) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D.”

This element consists of three sub-elements: enforcement, state-wide permitting of minor sources, and permitting of major sources and major modifications in areas designated attainment or unclassifiable for the subject NAAQS (also called the major source Prevention of Significant Determination - PSD program).

NCGS 143-215.61, *Enforcement Procedures*, provides North Carolina Division of Environmental Quality (DEQ) with the statutory authority to enforce air quality rules.

NCGS 143-215.108, *Control of sources of air pollution; permits required*, provides the North Carolina EMC with the statutory authority to permit sources of air pollution.

NCGS 143-215.107(a)(7), *Air quality standards and classifications*, provides the North Carolina EMC with the statutory authority “To develop and adopt standards and plans necessary to implement programs for the prevention of significant deterioration and for the attainment of air quality standards in nonattainment areas.”

The following North Carolina air quality rules address minor source pre-construction, minor source modifications, and pre-construction PSD permitting of major sources:

- 15A NCAC 2D .0500 “*Emission Control Standards*”, 2D .0530 “*Prevention of Significant Deterioration*” applies to the construction of any new major stationary source or any project at an existing major stationary source in an area designated as attainment or unclassifiable.
- 15A NCAC 2D .0531 “*Sources in Nonattainment Areas*” applies to the construction of any new major stationary source or major modification at an existing major stationary source in an area designated as nonattainment.
- 15A NCAC 2Q .0300 “*Construction and Operation Permits*”, requires minor stationary sources, prior to construction or operation, to have an air permit if the source is above an emission threshold or operates air pollutant control devices.
- 15A NCAC 2Q .0500 “*Title V Procedures*”, establishes an air quality permitting program for major stationary sources as required under Title V and 40 CFR Part 70.

North Carolina has submitted all PSD requirements to EPA for approval, including a SIP revision related to adoption of PSD requirements established in the 2008 New Source Review

(NSR) PM_{2.5} Rule and the 2010 PM_{2.5} Increments, Significant Impact Level (SILs) and Significant Monitoring Concentration (SMC) Rule to comply with 2006 PM_{2.5} infrastructure requirements for elements C, (D)(i) and (J). These requirements will also satisfy the same elements for the 2012 annual PM_{2.5} infrastructure SIP. The PSD rules became state effective on September 5, 2013, after adoption by the North Carolina EMC and the Rules Review Commission. The DAQ made a final submission to EPA on September 5, 2013. The EPA issued a disapproval of the DAQ's submission as they pertain to elements (C), (D)(i), and (J) on October 14, 2016 (81 FR 63107). The issue that resulted in EPA's disapproval regarded the DAQ's PM_{2.5} NSR permitting program. The DAQ amended its PSD rule in July of 2017, following a public hearing, to correct the deficiencies that EPA cited in its disapproval. The DAQ submitted this revision to EPA on October 17, 2017, and EPA proposed to approve it on June 21, 2018 (83 FR 28789). In the interim, the DAQ's NSR permitting program as it pertains to ozone precursors (i.e., NOx and volatile organic compounds (VOCs)) is not and has never been a source of controversy to EPA. Therefore, the DAQ, as demonstrated by the rules and authority listed above as it pertains to the 2015 8-hour ozone NAAQS, is meeting its obligations under element (C).

Part D programs are required for areas that are designated nonattainment for a NAAQS. Since there are no ozone nonattainment areas in North Carolina, a Part D permit program is not required.

The EPA has stated that "structural PSD program provisions need to include provisions necessary for the PSD program to address all regulated sources and NSR pollutants, including greenhouse gases (GHG)." On October 18, 2011, EPA approved revisions to North Carolina's PSD program to incorporate federal Tailoring Rule Revisions (76 FR 64240) related to GHGs into 15A NCAC 2D .0544 (Prevention of Significant Deterioration Requirements for Greenhouse Gases).

On June 23, 2014, the U.S. Supreme Court issued a decision in Utility Air Regulatory Group (UARG) v. EPA addressing the application of stationary source permitting requirements to GHG emissions. In its decision, the Supreme Court said that EPA may not treat GHGs as an air pollutant for the purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. Subsequently, the North Carolina EMC adopted a temporary rule in November 2014 to incorporate the Supreme Court's decision into 15A NCAC 2D .0544 and 15A NCAC 02Q .0502, Applicability, to remove requirements that major stationary sources obtain a PSD or Title V permit solely on the basis of GHG emissions. The temporary rule became effective on December 2, 2014, and the final rule became State effective on September 1, 2015. Thus, North Carolina is complying with these requirements.

Interstate Pollution Transport Provisions [§ 110(a)(2)(D)(i)]:

Section 110(a)(2)(D)(i) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall-

“(D) contain adequate provisions –

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will -

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility.”

Subsection 2(D)(i)(I)

Section 110(a)(2)(D)(i)(I), prongs 1 and 2, is also known as the Good Neighbor provision of the CAA in that upwind states are responsible for the effects of their pollution on downwind states. Under this section of the Act, states are responsible for reducing their “significant contribution” to those downwind nonattainment (prong 1) or maintenance areas (prong 2).

The following rules and state law address additional control measures, means, and techniques that ensure that North Carolina is not interfering with attainment or maintenance of the 8-hour ozone NAAQS in a downwind state:

- 15A NCAC 2D .0530 “*Prevention of Significant Deterioration*”
- 15A NCAC 2D .0531 “*Sources in Nonattainment Areas*”
- 15A NCAC 2D .0600 “*Monitoring: Recordkeeping: Reporting*”
- 15A NCAC 2D .0900 “*Volatile Organic Compounds*”
- 15A NCAC 2D .1000 “*Motor Vehicle Emission Control Standards*”
- 15A NCAC 2D .1200 “*Control of Emissions from Incinerators*”
- 15A NCAC 2D .1400 “*Nitrogen Oxides*”
- 15A NCAC 2D .1700 “*Municipal Solid Waste Landfills*”
- 15A NCAC 2D .1800 “*Control of Odors*”
- 15A NCAC 2D .1900 “*Open Burning*”
- 15A NCAC 2D .2000 “*Transportation Conformity*”
- 15A NCAC 2D .2200 “*Special Orders*”
- 15A NCAC 2D .2300 “*Banking Emission Reduction Credits*”
- 15A NCAC 2D .2600 “*Source Testing*”
- 2002 North Carolina CSA, Session Law 2002-4 (NCGS 143-215.107d)
 - On September 26, 2011, the system-wide NOx and SO₂ emissions caps in the CSA became federally enforceable as part of North Carolina's SIP (76 FR 59250)

Federal Implementation Plan – CSAPR Phase I and II NO_x and SO₂ budgets: North Carolina EGUs are subject to the Phase I annual NO_x and SO₂ budgets (beginning January 2015) and NO_x ozone season budgets (beginning May 2015). North Carolina EGUs are also subject to the Phase II annual NO_x and SO₂ budgets (beginning January 2017), but not the Phase II NO_x ozone season budgets (beginning May 2017). North Carolina EGUs are complying with the Phase I annual and ozone season and Phase II annual budgets. Although North Carolina is not relying on CSAPR for maintaining compliance with the ozone NAAQS, CSAPR is a federally enforceable program that has yielded residual NO_x and SO₂ emissions reduction benefits.

Attachment 2 to this infrastructure SIP provides a detailed analysis of North Carolina's ozone impacts on downwind states. Based on this analysis, the DAQ is concluding that North Carolina does not significantly contribute to ozone issues in downwind states and has met its Good Neighbor obligations under the CAA with respect to the 2015 ozone standard for the following reasons:

1. EPA's 2023v6.3en Transport Modeling Analysis: The results of EPA's transport modeling analysis for the 2015 8-hour ozone NAAQS show that North Carolina does not significantly contribute to any downwind ozone nonattainment or maintenance problems that would warrant further review and analysis. The EPA's modeling results show that North Carolina will contribute up to 0.43 ppb and 0.42 ppb to nonattainment and maintenance ozone monitoring sites, respectively, located downwind of North Carolina in the year 2023. These contribution values are less than the 1 ppb significant contribution threshold supported by EPA's collective contribution analysis, and below the 1 percent (0.70 ppb) of the ozone NAAQS threshold used in previous EPA transport analyses.
2. Back-Trajectory Analysis: The DAQ conducted a back-trajectory analysis of exceedances for 2015-2017 at ozone monitoring sites in the Northeastern United States that are projected to have future-year design values of 68.0 ppb or greater. This threshold was a conservative one to ensure that the analysis would consider any ozone monitoring site that would have even a slight chance of exceeding the NAAQS in 2023. The results of this analysis show that North Carolina did not significantly contribute to ozone exceedances at ozone monitoring sites in the Northeastern United States that may exceed the NAAQS in 2023.
3. Emissions Trends and 2023 Projections: North Carolina's anthropogenic NO_x and VOC emissions have decreased steadily since 1996. The emissions that EPA used in its modeling platform reflect a steady decrease of NO_x and VOC emissions from 2011 through the modeled future year in 2023. Over this 12-year period, NO_x and VOC emissions decline by 55 percent and 31 percent, respectively. In addition, the DAQ concludes that the 2023 emissions projections may significantly overstate NO_x emissions particularly from the power and other point source sectors. For the power sector, EPA's NO_x emissions for North Carolina's EGUs are 26 percent and 40 percent higher than Duke Energy's projections dated April 2017 and January 2018, respectively. Furthermore, EPA's 2023 projections do not account for expected NO_x reductions associated with Title V facilities transitioning from compliance with the state's Section 112(j) maximum achievable control technology (MACT) standards to the more stringent Section 112(d) standards in May of 2019. These factors suggest that EPA's 2023 projections overstate NO_x emissions and most likely caused the

model to overstate predicted design values and contributions from North Carolina to downwind state nonattainment and maintenance receptors.

Based on EPA's guidance contained in the March 27, 2018 memorandum, states shown to not contribute significantly to downwind air quality problems have no emission reduction obligation under the Good Neighbor provision.²

The DAQ hereby confirms that North Carolina's SIP contains adequate provisions to prevent sources and other types of emissions activities within the state from contributing significantly to nonattainment (prong 1) in any other state with respect to the 2015 8-hour ozone NAAQS based on the actual and projected downward trends of NOx and VOC emissions in North Carolina, modeled predictions, back trajectories, and federal and state control measures that are in place.

The DAQ hereby confirms that North Carolina's SIP contains adequate provisions to continue maintenance of the 2015 8-hour ozone NAAQS and prevent sources and other types of emissions activities within the state from interfering with maintenance (prong 2) in any other state with respect to the 2015 8-hour ozone NAAQS based on NOx and VOC emission trends in North Carolina, modeled predictions, back trajectories, and federal and state control measures that are in place.

Subsection 2(D)(i)(II)

Section 110(a)(2)(D)(i)(II) requires SIPs to include provisions prohibiting any source or other type of emissions activity in one state from interfering with measures required of any other state to prevent significant deterioration of air quality, or from interfering with measures required of any other state to protect visibility.

The following North Carolina air quality rules address the requirements under this subsection:

- 15A NCAC 2D .0530 "*Prevention of Significant Deterioration*" applies to the construction of any new major stationary source or any project at an existing major stationary source in an area designated as attainment or unclassifiable.

There are no nonattainment areas subject to Nonattainment NSR for the 2015 8-hour ozone NAAQS.

The following North Carolina SIPs address the requirements under this subsection:

- "*Regional Haze SIP for North Carolina Class I areas,*" December 17, 2007
- "*Regional Haze 5-Year Periodic Review State Implementation Plan for North Carolina Class I Areas,*" May 31, 2013

² 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), memorandum from Peter Tsirigotis, Director, U.S. EPA/Office of Air Quality Planning and Standards, to Regional Air Division Directors, Regions 1-10, March 27, 2018. Available at https://www.epa.gov/sites/production/files/2018-03/documents/transport_memo_03_27_18_1.pdf.

- “*Alternative to Source-Specific Best Available Retrofit Technology Demonstration (BART) for Electric Generating Units*,” October 31, 2014

North Carolina has developed and implemented a Regional Haze SIP to protect visibility in five Class I areas: Great Smoky Mountains National Park, Joyce Kilmer-Slickrock Wilderness Area, Linville Gorge Wilderness Area, Shining Rock Wilderness Area, and Swanquarter National Wildlife Refuge. North Carolina’s Regional Haze SIP also addresses visibility impacts to downwind states. On June 27, 2012, EPA finalized a limited approval of North Carolina’s Regional Haze SIP, as meeting some of the applicable regional haze requirements set forth in CAA Sections 169A and 169b and in 40 CFR 51.300-308 (77 FR 38185). The limited approval was due to the disapproval of certain portions of the SIP which relied on the Clean Air Interstate Rule (CAIR). In response to this action, North Carolina submitted to EPA a SIP revision titled “*Alternative to Source Specific Best Available Retrofit Technology (BART) Demonstration for Electric Generating Facilities In North Carolina*” on October 31, 2014. This SIP submittal demonstrates that the NO_x and SO₂ emissions reductions required by the CSA are equal to or better than BART for six EGUs subject to BART as a long-term strategy sufficient to achieve reasonable progress goals. This SIP revision is based on the requirements specified in EPA’s Regional Haze Rule (70 FR 39104) and Alternative BART Final Rulemaking (71 FR 60612). The EPA approved this SIP on May 24, 2016 (81 FR 32652).

As required by the regional haze rule, the DAQ submitted its “*Regional Haze 5-Year Periodic Review State Implementation Plan for North Carolina Class I Areas*” on May 31, 2013, and EPA published its final approve of this SIP on August 25, 2016 (81 FR 58400).

On January 10, 2017, EPA finalized revisions to various requirements of the regional haze rule (82 FR 3078) designed to strengthen, streamline, and clarify certain aspects of the agency’s regional haze program including:

- Strengthening the Federal Land Manager (FLM) consultation requirements to ensure that issues and concerns are brought forward early in the planning process.
- Updating the SIP submittal deadlines for the second planning period from July 31, 2018 to July 31, 2021 to ensure that they align where applicable with other state obligations under the CAA. The end date for the second planning period remains 2028; that is, the focus of state planning will be to establish reasonable progress goals for each Class I area against which progress will be measured during the second planning period.
- Adjusting interim progress report submission deadlines so that second and subsequent progress reports will be due by: January 31, 2025; July 31, 2033; and every 10 years thereafter. This means that one progress report will be required midway through each planning period.
- Removing the requirement for progress reports to take the form of SIP revisions. States will be required to consult with FLMs and obtain public comment on their progress reports before submission to EPA. The EPA will be reviewing but not formally approving or disapproving these progress reports.

The requirements in this revised rule will be incorporated into the second round of regional haze SIPs. The DAQ is participating in several regional planning efforts that are designed, in part, to identify and address, if needed, any North Carolina emissions sources that may significantly contribute to visibility impairment in Class I Federal areas in neighboring states. For example, the DAQ is participating with nine other southeastern states, tribal and local agencies, and FLMs in the Regional Planning Organization known as Visibility Improvement - State and Tribal Association of the Southeast (VISTAS). This collaborative effort serves to coordinate the technical analyses and planning activities for the southeastern states to prepare the second round of regional haze SIPs. The DAQ also participated in the Mid-Atlantic/Northeast Visibility Union's (MANE-VU) regional haze planning consultation process and provided technical data to MANE-VU to support their regional haze planning efforts.

Federal Implementation Plan – CSAPR Phase I and II NO_x and SO₂ budgets: North Carolina EGUs are subject to the Phase I annual NO_x and SO₂ budgets (beginning January 2015) and NO_x ozone season budgets (beginning May 2015). North Carolina EGUs are also subject to the Phase II annual NO_x and SO₂ budgets (beginning January 2017), but not the Phase II NO_x ozone season budgets (beginning May 2017). North Carolina EGUs are complying with the Phase I annual and ozone season and Phase II annual budgets. Although North Carolina is not relying on CSAPR for maintaining compliance with the ozone NAAQS, CSAPR is a federally enforceable program that has yielded residual NO_x and SO₂ emissions reduction benefits.

NCGS 143-215.107(a)(7) provides the authority “To develop and adopt standards and plans necessary to implement programs for the prevention of significant deterioration and for the attainment of air quality standards in nonattainment areas.”

Interstate Pollution Abatement and International Air Pollution [§ 110(a)(2)(D)(ii)]:

Section 110(a)(2)(D)(ii) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

"contain adequate provisions -

(ii) insuring compliance with the applicable requirements of sections 126 and 115 of this title (relating to interstate and international pollution abatement)."

The following rules address the requirements of Section 126(a) which directs each SIP to include provisions requiring a new or modified source to notify neighboring states of potential impacts from the source:

- 15A NCAC 2D .0530 "*Prevention of Significant Deterioration*"
- 15A NCAC 2D .0531 "*Sources in Nonattainment Areas*"

North Carolina has submitted all PSD requirements to EPA for approval, including a SIP revision related to adoption of PSD requirements established in the 2008 NSR PM_{2.5} Rule and the 2010 PM_{2.5} Increments, SILs and SMC Rule to comply with 2006 PM_{2.5} infrastructure requirements for elements C, (D)(i) and (J). These requirements will also satisfy the same elements for the 2012 annual PM_{2.5} infrastructure SIP. The PSD rules became state effective on September 5, 2013, after adoption by the North Carolina EMC and the Rules Review Commission. The DAQ made a final submission to EPA on September 5, 2013. The EPA issued a disapproval of the DAQ's submission as they pertain to elements (C), (D)(i), and (J) on October 14, 2016 (81 FR 63107). The issue that resulted in EPA's disapproval regarded the DAQ's PM_{2.5} NSR permitting program. The DAQ amended its PSD rule in July of 2017, following a public hearing, to correct the deficiencies that EPA cited in its disapproval. The DAQ submitted this revision to EPA on October 17, 2017, and EPA proposed to approve it on June 21, 2018 (83 FR 28789). In the interim, the DAQ's NSR permitting program as it pertains to ozone precursors (i.e., NOx and VOC) is not and has never been a source of controversy to EPA.

Unless a state is the subject of a Section 126(b) or 126(c) petition with respect to PM_{2.5}, the state has no continuing obligation under these sections. North Carolina is not the subject of a Section 126(b) or 126(c) petition. Since there are no pending EPA actions pursuant to Section 115 of the CAA, there is no expectation that North Carolina would need to submit anything in regards to Section 115 at this time.

Adequate Resources and Authority, Conflict of Interest, and Oversight of Local Governments [§ 110(a)(2)(E)]:

Section 110(a)(2)(E) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

- “provide
- i. *necessary assurances that the State (or, except where the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof).*
 - ii. *requirements that the State comply with the requirements respecting State boards under section 128, and*
 - iii. *necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.”*

15A NCAC 2Q .0200 “*Permit Fees*”, provides the mechanism by which stationary sources that emit air pollutants pay a fee based on the quantity of emissions emitted. The statutory authority to allow rulemaking and requiring permit fees can be found in NCGS 143-215.3 *General powers of Commission and Department; auxiliary powers*. Additionally, NCGS 143-215.107(a)(1) *Air quality standards and classifications*, provides the North Carolina EMC with the statutory authority “To prepare and develop, after proper study, a comprehensive plan or plans for the prevention, abatement and control of air pollution in the State or in any designated area of the State.” In general, the elements of 110(a)(2)(E)(i) are met when EPA performs a completeness determination for each SIP submittal. Each submittal provides for adequate personnel, funding and legal authority under State law to carry out the SIPs and related issues. This information is contained in all final SIP submittal packages in the historical record of the rule.

Section 110(a)(2)(E)(ii) of the CAA, as listed above, requires that the state comply with the requirements of Section 128 “*State Boards*”. Section 128(a)(1) requires any board or body which approves permits or enforcement orders shall have at least a majority of members who represent the public interest and do not derive any significant portion of their income from persons subject to permits or enforcement orders. Section 128(a)(2) requires any potential conflicts of interest by members of such boards or body or the head of an executive agency with similar powers be adequately disclosed. On November 3, 2015, EPA published its final approval of the DEQ’s Section 128 certification procedures that satisfy Section 110(a)(2)(E)(ii) requirements for the 2015 8-hour ozone NAAQS Infrastructure SIP (80 FR 67645).

North Carolina addresses Section 110(a)(2)(E)(iii) of the CAA as listed above by requiring the state to provide the necessary assurances that where the state relied on a local or regional government for the implementation of any plan provision, the state has the responsibility for ensuring adequate implementation of such plan provisions. North Carolina has three local programs that implement the air program. These agencies are located in Buncombe, Forsyth and Mecklenburg Counties. NCGS 143-215.112 *Local air pollution control programs*, provides the North Carolina EMC with the statutory authority “to review and have general oversight and supervision over all local air pollution control programs.” In order for submittals made by the local air program deemed complete, all local and regional implementation plans must be submitted through the DEQ to EPA.

Stationary Source Monitoring and Reporting [§ 110(a)(2)(F)]

Section 110(a)(2)(F) of the CAA dictates that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

“require, as may be prescribed by the Administrator—

- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources,*
- (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and*
- (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection.”*

The following North Carolina rules require monitoring of emissions from stationary sources:

- 15A NCAC 2D .0604 “*Exceptions to Monitoring and Reporting Requirements*”
- 15A NCAC 2D .0605 “*General Recordkeeping and Reporting Requirements*”
- 15A NCAC 2D .0611 “*Monitoring Emissions from Other Sources*”
- 15A NCAC 2D .0612 “*Alternative Monitoring and Reporting Procedures*”
- 15A NCAC 2D .0613 “*Quality Assurance Program*”
- 15A NCAC 2D .0614 “*Compliance Assurance Monitoring*”

The Annual Emissions Reporting Rule requires stationary sources to submit periodic emissions reports to the state. North Carolina's requirements meet the emissions reporting requirements of 40 CFR Part 51, including the Air Emissions Reporting Rule requirements. NCGS 143-215.107(a)(4) *Air quality standards and classifications*, provides the EMC with the statutory authority “To collect information or to require reporting from classes of sources which, in the judgment of the [EMC], may cause or contribute to air pollution.”

With respect to Section 110(a)(2)(F)(i), the cited provisions in this SIP exclude any provision that would prevent the use of any credible evidence of noncompliance.

Emergency Episodes [§ 110(a)(2)(G)]:

Section 110(a)(2)(G) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“provide for authority comparable to that in section 303 of this title and adequate contingency plans to implement such authority.”

Section 303 provides legal authority to EPA to stop the emission of air pollutants that present an imminent and substantial endangerment to public health or welfare or the environment. The EPA is authorized to either bring a lawsuit in federal court or, if such civil action cannot assure prompt protection of public health or welfare, to issue such orders as may be necessary to protect public health or welfare or the environment. The requirement for states to provide adequate contingency plans (40 CFR 51.150 through 51.153) to implement such authority is intended to establish emergency episode plans for responding to elevated pollutant levels in urban areas. Emergency episode plans are required in areas that record ambient pollutant concentrations in excess of threshold levels specified in 40 CFR Part 51.150.

Section 110(a)(2)(G) of the CAA requires that SIPs must provide for the authority comparable to that in Section 303 and must include adequate contingency plans to implement such authority. Pursuant to these provisions, EPA promulgated 40 CFR 51.16 (36 FR 24002), which established “significant harm levels” for five criteria pollutants – SO₂, inhalable particulate matter (PM₁₀), 2010 nitrogen dioxide (NO₂), carbon monoxide (CO), and ozone. Part 51.16 was restructured as Subpart H and Appendix L of Part 51.

The requirement for a state to submit an emergency episode plan for each of the five criteria pollutants is based on a priority region classification (40 CFR 51.150). Priority I Regions are required to develop an emergency episode plan for ozone in areas with 1-hour ozone concentration above 195 micrograms per cubic meter (0.10 ppm), using the most recent three years of data. Based on this criterion, North Carolina is a Priority I Region for ozone. The North Carolina emergency episode plan is found in 15A NCAC 2D .0300 “*Air Pollution Emergencies*” which provides the means to implement emergency air pollution episode measures and is authorized under NCGS 143-215.3(a)(1) and NCGS 143.215.3(a)(12). The plan is designed to prevent the excessive buildup of air contaminants during air pollution episodes thereby preventing the occurrence of an emergency due to the effects of high ozone levels on the public health.

In addition, the welfare and environment components of CAA Section 303 is satisfied with state authority provided in NCGS 143.215.3(a)(12), which provides the DEQ Secretary with the authority, when emissions from one or more air contaminant sources is causing imminent danger to human health and safety or to fish and wildlife, to order (with concurrence from the Governor) the person or persons responsible for the operation or operations in question to immediately reduce or discontinue the emissions of air contaminants or to take such other measures as are, in the Secretary’s judgment, necessary.

Future SIP Revisions [§ 110(a)(2)(H)]:

Section 110(a)(2)(H) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“provide for revision of such plan—

- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and*
- (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this chapter.”*

NCGS 143-215.107(a)(1) and (a)(10) provide the authority “To prepare and develop, after proper study, a comprehensive plan or plans for the prevention, abatement and control of air pollution in the State or in any designated area of the State” and “To develop and adopt standards and plans necessary to implement requirements of the CAA and implementing regulations adopted by the United States Environmental Protection Agency”, respectively.

Plan Revisions for Nonattainment Areas [§ 110(a)(2)(I)]:

Section 110(a)(2)(I) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

“in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D of this subchapter (relating to nonattainment areas).”

Per EPA's September 13, 2013 memorandum, “*Guidance on Infrastructure State Implementation Plan (SIP) Elements under CAA Sections 110(a)(1) and 110(a)(2)*” for preparing this certification, this element does not need to be addressed in the context of an infrastructure SIP submission according to EPA's interpretation of the CAA. This requirement only applies when an area is designated nonattainment with the 2015 8-hour ozone NAAQS and is only addressed when an attainment demonstration is required, as required by a separate provision and schedule as defined by the CAA. Therefore, no submission for this element is necessary.

Consultation and Public Notification [§ 110(a)(2)(J)]:

Section 110(a)(2)(J) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“meet the applicable requirements of section 121 of this title (relating to consultation), section 127 of this title (relating to public notification), and part C of this subchapter (relating to prevention of significant deterioration of air quality and visibility protection).”

This element contains four separable sub-elements: consultation with identified officials on certain air agency actions, public notification, prevention of significant deterioration, and visibility protection.

Consultation with identified officials on certain actions: Section 121 requires that states provide a satisfactory process of consultation with general purpose local governments, designated organizations of elected officials of local governments, and any affected FLMs in carrying out CAA requirements. North Carolina's authority to satisfy these requirements is found in:

- 15A NCAC 2D .2000 “*Transportation Conformity*”
- 15A NCAC 2D .0531 “*Sources in Nonattainment Areas*” address consultation requirements with the FLMs when permitting stationary sources.
- “*Regional Haze SIP for North Carolina Class I areas*,” December 17, 2007
- “*Regional Haze 5-Year Periodic Review State Implementation Plan for North Carolina Class I Areas*,” May 31, 2013
- “*Alternative to Source-Specific Best Available Retrofit Technology Demonstration (BART) for Electric Generating Units*,” October 31, 2014

40 CFR 51.308(i)(4) requires states to maintain continuing consultation procedures with the Federal Land Managers (FLM) regarding any regional haze plan (or plan revision) and progress reports, and that the state maintain such procedures in North Carolina's regional haze plan and progress report. North Carolina fulfilled this FLM consultation requirement during the development of its first regional haze SIP and progress report. North Carolina is continuing the FLM consultation process as the state proceeds with preparing its second 10-year regional haze SIP and 5-year progress report due to EPA in July 2021.

Public Notification: Section 127 requires states to provide measures which will be effective to notify the public on a regular basis of instances or areas in which any air quality standard is exceeded during the preceding calendar year, to advise the public of the health hazards associated with such pollution, and to enhance public awareness of measures that can be taken to prevent such standards from being exceeded. North Carolina's authority to satisfy these requirements is found in:

- 15A NCAC 2D .0300 “*Air Pollution Emergencies*”

Additionally, the DAQ has several public notice mechanisms in place, including social media, to notify the public of ambient air quality levels of ozone and PM_{2.5} through the North Carolina Air Quality Forecasting Program. The DAQ also has an extensive outreach program to educate the public and promote voluntary emission reduction measures through the North Carolina Air Awareness Program. North Carolina participates in EPA's AirNOW program, which also enhances public awareness of air quality in North Carolina and throughout the United States.

Prevention of Significant Determination: The requirements for Element J are the same as those described earlier with respect to Element C. North Carolina's authority resides in the following rules:

- 15A NCAC 2D .0530 “*Prevention of Significant Deterioration*”
- 15A NCAC 2D .0531 “*Sources in Nonattainment Areas*”
- 15A NCAC 2Q .0300 “*Construction and Operation permits*”
- 15A NCAC 2Q .0500 “*Title V Procedures*”

North Carolina has submitted all PSD requirements to EPA for approval, including a SIP revision related to adoption of PSD requirements established in the 2008 NSR PM_{2.5} Rule and the 2010 PM_{2.5} Increments, SILs and SMC Rule to comply with 2006 PM_{2.5} infrastructure requirements for elements C, (D)(i) and (J). These requirements will also satisfy the same elements for the 2012 annual PM_{2.5} infrastructure SIP. The PSD rules became state effective on September 5, 2013, after adoption by the North Carolina EMC and the Rules Review Commission. The DAQ made a final submission to EPA on September 5, 2013. The EPA issued a disapproval of the DAQ's submission as they pertain to elements (C), (D)(i), and (J) on October 14, 2016 (81 FR 63107). The issue that resulted in EPA's disapproval regarded the DAQ's PM_{2.5} NSR permitting program. The DAQ amended its PSD rule in July of 2017, following a public hearing, to correct the deficiencies that EPA cited in its disapproval. The DAQ submitted this revision to EPA on October 17, 2017, and EPA proposed to approve it on June 21, 2018 (83 FR 28789). In the interim, the DAQ's NSR permitting program as it pertains to ozone precursors (i.e., NO_x and VOC) is not and has never been a source of controversy to EPA. Therefore, the DAQ, as demonstrated by the rules and authority listed above as it pertains to the 2015 8-hour ozone NAAQS, is meeting its obligations under element (J).

Visibility Protection: Per EPA's September 13, 2013 memorandum, “*Guidance on Infrastructure State Implementation Plan (SIP) Elements under CAA Sections 110(a)(1) and 110(a)(2)*”, there are no other applicable visibility protection obligations under Section 110(a)(2)(J) as a result of the 2015 8-hour ozone NAAQS.

NCGS 143-215.107(a)(7) provides the authority “To develop and adopt standards and plans necessary to implement programs for the prevention of significant deterioration and for the attainment of air quality standards in nonattainment areas.”

Air Quality Modeling and Reporting [§ 110(a)(2)(K)]:

Section 110(a)(2)(K) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall -

"provide for-

- (i) *the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and*
- (ii) *the submission, upon request, of data related to such air quality modeling to the Administrator."*

On November 6, 2017, EPA designated the entire state of North Carolina "Unclassifiable/Attainment" for the 2015 8-hour ozone NAAQS.³ Therefore, North Carolina is not required to perform air quality modeling to support attainment demonstrations for submittal to EPA.

However, the DAQ has and will continue to maintain in the future, personnel with training and experience with benchmarking and running photochemical grid, source apportionment, trajectory, meteorological, and dispersion models and emissions processors for preparing input files to air quality models. The DAQ's modeling work complies with EPA's final guidance on the use of models in attainment demonstrations, and uses the latest methods and techniques to document modeling information and computer model performance evaluations. The DAQ works closely with the southeast region and other areas to conduct air quality modeling to ensure compatibility with federal guidelines. In addition, the DAQ's staff conduct for selected regions across North Carolina daily air quality forecasting of ozone during the ozone season (March 1 through October 30) following EPA's established procedures and guidance.

Emissions data collected through 15A NCAC 2D .0600 "*Monitoring: Recordkeeping: Reporting*" (authorized under NCGS 143-215.107(a)(4)) provide the necessary information to model potential impacts of major and some minor stationary sources.

³ *Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards (NAAQS)*, Final Rule, 82 FR 54232, November 16, 2017. This final rule became effective on January 16, 2018.

Permitting Fees [§ 110(a)(2)(L)]:

Section 110(a)(2)(L) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this chapter, a fee sufficient to cover—

- (i) *the reasonable costs of reviewing and acting upon any application for such a permit, and*
- (ii) *if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator’s approval of a fee program under subchapter V of this chapter.”*

North Carolina's authority to satisfy these requirements is found in:

- 15A NCAC 2Q .0200 “*Permit Fees*”

This rule provides the mechanism by which stationary sources that emit air pollutants pay a fee based on the type of permit and the quantity of emissions emitted. These fees cover the costs of reviewing, approving, implementing and enforcing a permit. The statutory authority to allow permit fees can be found in NCGS 143-215.3 *General powers of Commission and Department; auxiliary powers.*

Consultation and Participation by Affected Local Entities [§ 110(a)(2)(M)]:

Section 110(a)(2)(M) of the CAA requires that North Carolina's SIP for the 2015 8-hour ozone NAAQS shall –

“provide for consultation and participation by local political subdivisions affected by the plan.”

North Carolina's authority related to this element is found in:

- 15A NCAC 2D .0530 “*Prevention of Significant Deterioration*” requires that the Department notify the public of the application, preliminary determination, degree of incremental consumption, and the opportunity for comment prior to making a final permitting decision.
- 15A NCAC 2D .2000 “*Transportation Conformity*” requires a consultation with all affected partners to be implemented for transportation conformity determinations.

All State rules go through the public review process as defined in the North Carolina Administrative Procedures Act (NCGS 150B-21.1 and 150B-21.2). All Attainment Demonstrations, Redesignation Demonstrations, Maintenance Plans, and CAA Section 110(I) Noninterference Demonstrations go through a public notification process prior to submittal to EPA for inclusion in the SIP. Additionally, the Regional Haze SIP planning efforts undergo an extensive consultation process between appropriate state, local, and tribal air pollution control agencies as well as the corresponding FLMs. Finally, the DAQ organizes stakeholder meetings to support SIP development and rule-making efforts.

In addition, the DAQ has developed and signed Memoranda of Understanding (MOU) with local, state, and federal transportation planning partners that formalizes the consultation process for developing metropolitan transportation plans, transportation improvement plans and updates, and motor vehicle emissions budgets for maintenance plans.