

**Conformity Analysis and Determination Report for the
Metrolina Area:**

**Cabarrus-Rowan MPO
Charlotte Regional Transportation Planning Organization
Gaston-Cleveland-Lincoln MPO**

2020-2029 Transportation Improvement Program as Amended

2050 Metropolitan Transportation Plan

**Projects from the 2020-2029 State Transportation Improvement
Program for the Donut Area in
Union County**

(2008 8-hour Ozone)

(1997 8-hour Ozone)

April XX, 2022

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The North Carolina Department of Environmental Quality
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1.0 Introduction

The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that transportation investments conform to a State implementation plan (SIP) for meeting the Federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations that detail implementation of the CAA requirements were first issued in November 1993, and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from metropolitan transportation plans, transportation improvement programs and projects are consistent with (“conform to”) the state’s air quality goals in the SIP. This document has been prepared for state and local officials who are involved in decision making on transportation investments.

Transportation conformity is required under CAA Section 176(c) to ensure that Federally supported transportation activities are consistent with (“conform to”) the purpose of a state’s SIP. Transportation conformity establishes the framework for improving air quality to protect public health and the environment. Conformity to the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone.

In 1997, the national ambient air quality standard (NAAQS) for ozone was reviewed and revised to reflect improved scientific understanding of the health impacts of this pollutant. When the standard was revised in 1997, an 8-hour ozone standard was established that was designed to replace the 1-hour standard. The US Environmental Protection Agency (USEPA) designated the Metrolina Area as moderate non-attainment for ozone under the 8-hour standard with an effective date of June 15, 2004. The designation covered the following geographic areas:

- Cabarrus County
- Gaston County
- Lincoln County
- Mecklenburg County
- Rowan County
- Union County
- Coddle Creek and Davidson Townships in Iredell County

On March 28, 2013, the North Carolina Division of Air Quality (NCDAQ) submitted the final *"Supplement for Redesignation Demonstration and Maintenance Plan for the Charlotte-Gastonia-Rock Hill, NC-SC 1997 8-hour Ozone Nonattainment Area"* to the USEPA. The supplement documents the Metrolina Area attaining the 1997 8-hour ozone NAAQS and fulfilling the requirements of Section 175A(b) of the Federal Clean Air Act as amended. The USEPA took final

action on December 2, 2013 to redesignate the Metrolina Area to attainment for the 1997 8-hour ozone NAAQS with an effective date of January 2, 2014.

On May 27, 2008, the USEPA once again revised the ozone NAAQS to provide increased protection of public health and welfare especially for children and “at risk” populations. As a result of the new ozone NAAQS, the Metrolina Area was designated by the USEPA as marginal nonattainment for the 2008 8-hour ozone NAAQS on May 21, 2012. The designated area for the 2008 8-hour ozone NAAQS include,

- Central Cabarrus, Concord, Georgeville, Harrisburg, Kannapolis, Midland, Mount Pleasant, Odell, Poplar Tent, New Gilead and Rimertown Townships in Cabarrus County
- Dallas, Crowders Mountain, Gastonia, Riverbend and South Point Townships in Gaston County
- Coddle Creek and Davidson Townships in Iredell County
- Catawba Springs, Lincolnton and Ironton Townships in Lincoln County
- Mecklenburg County
- Atwell, China Grove, Franklin, Gold Hill, Litaker, Locke, Providence, Salisbury, Steele and Unity Townships in Rowan County
- Goose Creek, Marshville, Monroe, Sandy Ridge and Vance Townships in Union County.

The NCDAQ submitted the *"Redesignation Demonstration and Maintenance Plan for the Charlotte-Gastonia-Salisbury, North Carolina 2008 8-Hour Ozone Marginal Nonattainment Area"* to the USEPA on April 16, 2015. In the redesignation demonstration and maintenance plan, the maintenance demonstration was estimated using a Reid vapor pressure (RVP) of 7.8 psi. On May 21, 2015, the USEPA proposed to determine the Metrolina Area was attaining the 2008 8-hour ozone standard, approve the 2014 and 2026 motor vehicle emissions budgets (MVEBs) and redesignate the Metrolina Area to attainment for the 2008 8-hour ozone standard. The USEPA approval and final rule redesignating the Metrolina Area from nonattainment to attainment was signed on July 17, 2015.

On April 16, 2015, the NCDAQ also submitted to the USEPA the *"Clean Air Act Section 110(l) Non-Interference Demonstration to Support the Gasoline Reid Vapor Pressure (RVP) Standard Relaxation in Gaston and Mecklenburg Counties"* (RVP-related SIP). The RVP-related SIP requested the USEPA to change the Federal requirement Reid vapor pressure (RVP) in Gaston and Mecklenburg Counties from 7.8 psi to 9.0 psi. The RVP-related SIP also included updated motor vehicle emissions budgets that incorporated the RVP changes to Gaston and Mecklenburg Counties. In a final rule on July 28, 2015, the USEPA took action in support of the RVP-related SIP revision noninterference demonstration by determining that the changes to the RVP in Mecklenburg and Gaston Counties will not interfere with attainment or maintenance of any NAAQS or with any other applicable provisions of the Clean Air Act.

On May 4, 2017, the North Carolina legislative act signed by Gov. Cooper changed the state’s inspection and maintenance (I/M) requirements for the 22 counties subject to the state’s expanded I/M program. As a result, the NCDAQ submitted a SIP revision via a letter dated July 25, 2018 to the USEPA to support the state’s request to change the vehicle model year coverage for the 22 counties subject to the expanded I/M program. The NCDAQ’s SIP revision also included updates

to the Metrolina maintenance plan and associated MVEBs used for transportation conformity. On May 20, 2019, the USEPA proposed to find that the change in the vehicle model year coverage for the 22 counties subject to the expanded I/M program meets the requirements of the CAA section 110(l) and will not interfere with attainment or maintenance of any NAAQS in North Carolina. The USEPA took final action on September 11, 2019 to approve that North Carolina's SIP revision to the vehicle model year coverage for the 22 counties will not interfere with continued attainment or maintenance of any applicable NAAQS and approve the updated emissions for the 2008 8-hour ozone maintenance plan, including the updated MVEBs for the Charlotte 2008 Ozone Maintenance Area. This rule became effective on October 11, 2019. On August 25, 2021, the USEPA took final action to approve a SIP revision allocating a portion of the available safety margin to revised the 2026 MVEB's used for transportation conformity. All of the USEPA's federal register notices are in Appendix A.

South Coast Air Quality Mgmt. District v. EPA ("South Coast IP")

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* ("South Coast II," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These conformity determinations are required in these areas after February 16, 2019. As previously stated, a portion of the Metrolina Area was designated attainment with a maintenance plan for the 2008 ozone NAAQS with an effective date of July 28, 2015. Therefore, per the *South Coast II* decision, this conformity determination is being made for that partial portion of the 1997 8-hour ozone NAAQS.

For the 1997 8-hour ozone NAAQS areas, transportation conformity for metropolitan transportation plans (MTPs) and state transportation improvement program (TIP) for the 1997 8-hour ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of the USEPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 8-hour ozone NAAQS revocation was effective on April 6, 2015, and the *South Coast II* court upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, except to address transportation control measures (TCMs), or budget or interim emissions tests for the 1997 8-hour ozone NAAQS. There are no TCMs in the Metrolina SIP.

Therefore, transportation conformity for the 1997 8-hour ozone NAAQS for the Metrolina Area [Cabarrus-Rowan Metropolitan Planning Organization (CRMPO), Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), and Charlotte Regional Transportation Planning Organization (CRTPO)] and NC Department of Transportation (NCDOT) FY 2020 – 2029 Transportation Improvement Program can be demonstrated by showing the remaining requirements in Table 1 in 40 CFR 93.109 have been met.

These requirements, which are laid out in Section 2.4 of the USEPA's November 2018 Guidance

and are addressed in the remainder of the document and includes:

- Latest planning assumptions (93.110)
- Consultation (93.112)
- Transportation Control Measures (93.113)
- Fiscal constraint (93.108)

The purpose of this report is to document compliance with the provisions of the Clean Air Act Amendments of 1990 (CAAA), the Moving Ahead for Progress in the 21st Century Act (MAP-21), Fixing America's Surface Transportation ACT (FAST Act) and the Infrastructure Investment and Jobs Act (IIJA) also known as the Bipartisan Infrastructure Law (BIL). The conformity determination for the Amended FY 2020-2029 Transportation Improvement Program amendments is based primarily on a regional emissions analysis that utilized the transportation networks in adopted and conforming 2050 Metropolitan Transportation Plans and the resulting emissions modeled by the North Carolina Division of Air Quality. The aforementioned processes will be completed on April XX, 2022. The Conformity Determination Report (CDR) for the 2050 MTP updates is available on the following websites:

- Cabarrus-Rowan MPO:
<http://crmpo.org/Plans/Transportation-Conformity>
- Gaston-Cleveland-Lincoln MPO:
<https://gclmpo.org/plans-programs-and-studies/long-range-planning/>
- Charlotte Regional TPO:
<https://www.crtpo.org/metropolitan-transportation-plan-1>

The FY 2020-2029 TIPs amendments for the Metrolina Area contain a number of project changes which have been included in the 2050 MTP and Transportation Conformity Determination for the Metrolina Area. The 2050 MTP conformity determination for the Metrolina area includes a new regional emissions analysis that ensures that the FY 2020-2029 TIPs are direct subsets of the 2050 MTPs.

The MPOs and the NCDOT are required by 23 CFR Parts 450 and 500 and 40 CFR Parts 51 and 93 to make a conformity determination on any newly adopted or fiscally-constrained MTPs and TIPs. The intent of this report is to document the transportation conformity determination for the FY 2020-2029 TIPs as amended for the Metrolina Area and projects from the FY 2020-2029 State TIP as amended for the donut area in Union County. In addition, the United States Department of Transportation (USDOT), specifically, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) must make a conformity determination on the MTPs and TIPs in all non-attainment and maintenance areas. The Metrolina Area is maintenance for the 2008 8-hour ozone.

Transportation Conformity Determinations for the 2050 MTP for the Metrolina Area were approved as follows:

- Cabarrus-Rowan MPO: March 23, 2022
- Gaston-Cleveland-Lincoln MPO: March 24, 2022
- Charlotte Regional Transportation Planning Organization: March 16, 2022
- The North Carolina Department of Transportation (NCDOT) (for the donut portion in Union County in the Metrolina Ozone Maintenance Area): March XX, 2022

By these actions, the MPOs and NCDOT demonstrated that the 2050 MTP's are consistent with Section 176(c) of the Clean Air Act, the State Implementation Plan, FAST Act, IJJA, and 40 CFR Parts 51 and 93. These conformity demonstrations were documented by the MPOs and NCDOT in this report. This report includes the regional emissions analysis comparison prepared for the 2050 MTP's demonstrating that emissions in each of the analysis years of the MTP (2025, 2035, 2045, and 2050) are less than the motor vehicle emissions budgets established by the attainment demonstration and maintenance plan SIP in accordance with 40 CFR Part 93 and approved by the USEPA. (See Appendix A for details on MVEBs in the SIP.)

Metropolitan Transportation Plans

As noted above, the 2050 MTP's include the timing of regionally significant projects included in the FY 2020-2029 TIP as amended for the Metrolina Area. A new regional emissions analysis was conducted for this transportation conformity determination to reflect the appropriate horizon year for these regionally significant projects. As agreed upon by the interagency consultation partners, the regional emissions analysis work for this process began on June 29, 2021 and was completed on January 7, 2022. Details related to the interagency consultation associated with this conformity determination can be found in Appendix C.

Non-exempt projects in the 2050 MTP's are required to be part of travel demand model assumptions for the appropriate analysis year. All projects are included in the travel model assumptions for the appropriate horizon year. The 2050 MTP's provide an opportunity to incorporate the most current cost estimates as required in the fiscal constraint requirements. This conformity analysis will focus on the regionally significant 2050 MTP projects presented in Appendix D as reviewed by the Interagency partners on March 8, 2021. There were no regionally significant projects in the Donut area.

FISCAL CONSTRAINT DETERMINATION

As part of the federal transportation planning requirements 23 CFR Parts 450 and 500 for MTPs, the costs of implementing transportation programs and projects included in MTPs are compared with the funding expected to be available. These MTPs' financial analyses were developed in response to the requirements for "financially-constrained plans".

These MTPs consider capital costs and operation and maintenance (O&M) costs associated with the preservation and continued operation of the existing transportation system, as well as the costs associated with the recommended expansion of the transportation networks included in the MTPs. The MTPs also describe revenues from all sources that will be available to pay for capital and

O&M costs. Each MTP describes in detail its own financing plan.

2.0 Relationship of the MTP and TIP

In accordance with 40 CFR Parts 51 and 93, the TIP is a direct subset of the MTP if the following conditions are met:

- The TIP is consistent with the conforming MTP such that the regional emissions analysis performed on the MTP applies to the TIP;
- The TIP contains all projects which must be started in the TIP's timeframe to implement the highway and transit system envisioned by the MTP in each of its horizon years;
- All federally funded TIP projects which are regionally significant are part of the specific highway or transit system envisioned in the MTP horizon years; and
- The design concept and scope of each regionally significant project identified in the TIP is not significantly different from that described in the MTP.
- The number of travel lanes of each regionally significant project identified in the TIP is not significantly different from that described in the MTP.

This report documents that the TIPs for FY 2020-2029 as amended are a direct subset of the 2050 MTPs for the Cabarrus-Rowan MPO, the Gaston-Cleveland-Lincoln MPO, the Charlotte Regional Transportation Planning Organization and the projects from the donut area in Union County is the responsibility of the North Carolina Department of Transportation. The 2050 MTPs for these areas are fiscally-constrained and are consistent with 23 CFR Part 450 Subpart C. This conformity determination is based on the most recent estimates of the emissions and the most recent planning assumptions (including population, employment, travel and congestion estimates available) as determined by the appropriate MPOs and NCDOT. It has been demonstrated in the Conformity Determination Report that the 2050 MTPs conform to the provisions of the CAAA of 1990, FAST Act, IJJA and 40 CFR Parts 51 and 93. Also, the 2050 MTPs conform to the purpose of the SIP in accordance with 40 CFR Part 93.

3.0 Latest Planning Assumptions

The planning assumptions used to develop the Conformity Determination Report for the 2008 8-hour ozone NAAQS are the latest planning assumptions in the 2050 MTP that were approved by the respective MPOs and NCDOT. Estimates of future population and employment are less than five years old. The vehicle age distribution and fleet mix distributions used as input to the emission model were based on the current data from North Carolina Division of Motor Vehicles. This data is also less than five years old. The planning assumptions are outlined in the pre-consensus plan in Appendix C.

4.0 Transportation Control Measures

As mentioned before, there are no TCMs in the Metrolina SIP.

5.0 Interagency Consultation

The FY 2020-2029 TIP as amended has undergone interagency consultation as required in the North Carolina Administrative Code Title 15A Subpart 02D .0201-.0203 inclusive. Interagency consultation meetings involving the MPOs, NCDOT, NCDAQ, FHWA and USEPA- Region 4 were held on June 29, 2021 and August 26, 2021. A summary of issues raised and responses, along with any written agency comments, are provided in Appendix I.

6.0 Public Involvement

The FY 2020-2029 TIP as amended, Transportation Conformity Determination for the Metrolina Area, and the 2050 MTPs were reviewed by the public in accordance with the Public Involvement Policies of the Cabarrus-Rowan MPO, the Gaston-Cleveland-Lincoln MPO, the Charlotte Regional Transportation Planning Organization and the NCDOT. This report was also made available for public review by the Rocky River Rural Planning Organization (RRRPO). Copies of citizen comments and agency responses to them are attached to this report in Appendix I. The newspaper advertisements for public review and comment period are attached to this report in Appendix J.

7.0 Regional Emissions Analysis Approach

The regional emissions analysis (REA) was conducted using the 2008 8-hour ozone Maintenance Plan (9.0 psi RVP based) MVEBs published on August 25, 2021. The horizon years for this conformity determination are 2026, 2035, 2045, and 2050. The 2026 MVEB will be used for years 2026, 2035, 2045, and 2050.

Approved 2008 8-hour Ozone Maintenance SIP (kilograms/day) – (9.0 psi RVP)

Cabarrus-Rowan MPO		
	2014	2026
NOx	11,814	4,903
VOC	7,173	4,888

Gaston Cleveland Lincoln MPO		
	2014	2026
NOx	10,079	3,768
VOC	5,916	3,472

Charlotte Regional TPO- Rocky River RPO		
	2014	2026
NOx	32,679	12,241
VOC	18,038	11,943

8.0 Emission Comparison Summary Tests by Location and Pollutants

Ozone

Cabarrus-Rowan MPO Emissions 2008 8-hour ozone Maintenance Plan MVEB Comparison Summary (9.0 psi RVP)

CRMPO Emissions Comparison Summary (kilograms/day)				
Year	NO_x		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	3,746	4,903	3,488	4,888
2035	1,962	4,903	2,410	4,888
2045	1,751	4,903	2,232	4,888
2050	1,796	4,903	2,251	4,888

Gaston-Cleveland-Lincoln MPO Emissions 2008 8-hour ozone Maintenance Plan MVEB Comparison Summary (9.0 psi RVP)

GCLMPO Emissions Comparison Summary (kilograms/day)				
Year	NO_x		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	2,982	3,768	2,687	3,472
2035	1,455	3,768	1,718	3,472
2045	1,237	3,768	1,487	3,472
2050	1,227	3,768	1,433	3,472

CRTPO and RRRPO 2008 8-hour ozone Maintenance Plan MVEB Comparison Summary (9.0 psi RVP)

CRTPO and RRPO Emissions Comparison Summary (kilograms/day)				
Year	NO_x		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	10,853	12,241	9,866	11,943
2035	6,905	12,241	7,496	11,943
2045	6,855	12,241	7,531	11,943
2050	7,181	12,241	7,863	11,943

The MOVES and Regional Emission Analysis files are provided in Appendix G.

9.0 Findings of Conformity

Cabarrus-Rowan MPO Ozone Conformity Finding for the 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended

Based on the analysis and consultation and involvement process described in this report, the Cabarrus-Rowan MPO 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are found to conform to the purpose of the North Carolina SIP. The emissions expected from the implementation of the Cabarrus-Rowan MPO 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are in conformity with the 1997 and 2008 8-hour ozone standard.

Gaston-Cleveland-Lincoln MPO Ozone Conformity Finding for the 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended

Based on the analysis and consultation and involvement process described in this report, the Gaston-Cleveland-Lincoln MPO 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are found to conform to the purpose of the North Carolina SIP. The emissions expected from the implementation of the Gaston-Cleveland-Lincoln MPO 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are in conformity with the 1997 and 2008 8-hour ozone standard.

Charlotte Regional Transportation Planning Organization Ozone Conformity Finding for the 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended

Based on the analysis and consultation and involvement process described in this report, the Charlotte Regional Transportation Planning Organization 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are found to conform to the purpose of the North Carolina SIP. The emissions expected from the implementation of the Charlotte Regional Transportation Planning Organization 2050 Metropolitan Transportation Plan and 2020-2029 Transportation Improvement Program as amended are in conformity with the 1997 and 2008 8-hour ozone standard.

NCDOT Donut Area Conformity Finding for Projects from the 2020-2029 State Transportation Improvement Program as amended

Based on the analysis and consultation and involvement process described in this report, the projects from the 2020-2029 State Transportation Improvement Program as amended for the donut area in Union County that is outside of the MPO boundary is found to conform to the purpose of the North Carolina State Implementation Plan. The emissions expected from the implementation of the projects from the 2020-2029 State Transportation Improvement Program as amended are in conformity with the 1997 and 2008 8-hour ozone standard.

The MPO/NCDOT conformity determinations and TIP/MTP adoptions are provided in Appendix J.

The USDOT Conformity Determination Letter is provided in Appendix K.

Appendix A: Metrolina Area Ozone SIP Federal Register Notices

Appendix B: North Carolina's Non-Interference Demonstration for the Federal Low RVP Submittal

Appendix C: Interagency Consultation and Pre-Consensus Plan

Appendix D: List of Roadway Projects within the Maintenance Areas

Appendix E: VMT and speeds

Appendix F: MOVES Emissions Summary Spreadsheet

Appendix G: MOVES Emissions Analysis Results

Appendix H: Public Participation Policies

Appendix I: Comments & Responses from the Agency Review and Public Involvement Process

Appendix J: Adoption and Endorsement Resolutions and Agency Determinations (TBA)

Appendix K: USDOT Conformity Determination (TBA)