

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

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

2018-2022 Transportation Improvement Program

2040 Metropolitan Transportation Plan Amendments

**Projects from the 2018-2022 State Transportation Improvement
Program for the Donut Area in
Union County**

(2008 8-hour Ozone Standard)

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Prepared by:

The North Carolina Department of Transportation as an agent of:

The Cabarrus-Rowan Metropolitan Planning Organization,
The Gaston-Cleveland-Lincoln Metropolitan Planning Organization,
The Charlotte Regional Transportation Planning Organization,
The Rocky River Rural Planning Organization

In cooperation with:

The North Carolina Department of Environment and Natural Resources
Division of Air Quality

Contact Information

Additional information about the content of this report or about transportation conformity can be obtained from:

Heather J. Hildebrandt
Transportation Planning Branch
North Carolina Department of Transportation
1554 Mail Service Center
Raleigh, NC 27699-1554
Phone Number: 919-707-0964
Email: hjhildebrandt@ncdot.gov

Additional copies of this report can be obtained from the following websites:
www.crmppo.org, gclmpo.org, www.crtppo.org, and www.rockyriverrpo.org

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1.0 Introduction

The purpose of this report is to document compliance with the provisions of the Clean Air Act Amendments of 1990 (CAAA) and the Fixing America's Surface Transportation Act (FAST Act). The conformity determination for the FY 2018-2022 Transportation Improvement Program (TIP) is based primarily on a regional emissions analysis that utilized the transportation networks in adopted and conforming 2040 Metropolitan Transportation Plans (MTPs) and the resulting emissions modeled by the North Carolina Division of Air Quality (NCDQA). The Transportation Conformity Determination for the 2040 MTP updates for the Metrolina Area [Cabarrus-Rowan Metropolitan Planning Organization (CRMPO), Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), and Charlotte Regional Transportation Planning Organization (CRTPO)] was completed on May 2, 2014. The Conformity Determination Report (CDR) for the 2040 MTP updates is available on the following websites:

- Cabarrus-Rowan MPO: <http://crmpo.org/Plans/Transportation-Conformity>
- Gaston-Cleveland-Lincoln MPO: <http://gclmpo.org/draft-transportation-conformity-report/>
- Charlotte Regional Transportation Planning Organization: <http://www.crtpo.org/plans-programs/metropolitan-transportation-plan>

The FY 2018-2022 TIPs for the Metrolina Area (Cabarrus-Rowan MPO, Gaston-Cleveland-Lincoln MPO and the Charlotte Regional Transportation Planning Organization) contain a number of project changes which required 2040 MTP amendments and a new Transportation Conformity Determination for the Metrolina Area. The FY 2018-2022 TIP conformity determination for the Metrolina Area includes a new regional emissions analysis that captures all the 2040 MTP project changes to ensure that the FY 2018-2022 TIPs are direct subsets of the 2040 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 amended fiscally-constrained MTPs and TIPs. The intent of this report is to document the transportation conformity determination for the FY 2018-2022 TIPs for the Metrolina Area and projects from the FY 2018-2022 State TIP for the donut area in Union County. In addition, the United States Department of Transportation (USDOT), specifically, the Federal Highway Administration (FHWA) 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 2040 MTP amendments for the Metrolina Area were approved as follows:

- Cabarrus-Rowan MPO: 8/23/2017
- Gaston-Cleveland-Lincoln MPO: 9/28/2017
- Charlotte Regional Transportation Planning Organization: 9/21/2017
- The North Carolina Department of Transportation (NCDOT) (for the donut portion in Union

County in the Metrolina Ozone Maintenance Area): 9/28/2017

By these actions, the MPOs and NCDOT demonstrated that the 2040 MTP amendments are consistent with Section 176(c) of the Clean Air Act, the State Implementation Plan (SIP), FAST ACT, 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 2040 MTP amendments demonstrating that emissions in each of the analysis years of the MTP (2025, 2030, and 2040) are less than the motor vehicle emissions budget established by the SIP in accordance with 40 CFR Part 93 and approved by United States Environmental Protection Agency (USEPA). (See Appendix A for details on budgets set in the SIP.)

AMENDED PROJECTS

As noted above, the 2040 MTP amendments includes changes in the timing of projects included in the FY 2018-2022 TIP for the Metrolina Area. Changes in the horizon years for these regionally-significant projects resulted in having to do new regional emissions analysis for this transportation conformity determination. As agreed upon by the interagency consultation partners, the regional emissions analysis work for this process began on March 27, 2017 and was completed on June 12, 2017. Details related to the interagency consultation associated with this conformity determination can be found in Appendix D.

Non-exempt projects that represent a change in timing of an existing MTP project may be required to be part of travel demand model assumptions for the appropriate analysis year. All projects in this amendment are included in the travel model assumptions for the appropriate horizon year. This amendment also provides an opportunity to incorporate the most current cost estimates as required in the fiscal constraint requirements for the MTPs. No significant overall cost or fiscal capacity changes are associated with the changes of costs for some projects. This conformity analysis will focus on the project changes presented below:

Cabarrus-Rowan MPO Project(s)

The complete list of 2040 MTP projects are provided in Appendix B.

Project Identifier	Amendment Description
U-6029	Horizon Year (HY) shifting to 2030
U-6032	Project added to 2040 MTP
U-5956	Project added to 2040 MTP
R-5778	Project added to 2040 MTP

Gaston-Cleveland-Lincoln MPO Project(s)

The complete list of 2040 MTP projects are provided in Appendix B.

Project Identifier	Amendment Description
U-3608	Modify mileage in MTP
U-2523	Modify mileage in MTP

U-6043	Modify MTP Project Details
R-5849	Project added to 2040 MTP
I-5713	Project added to 2040 MTP
R-5712	Project added to 2040 MTP
R-5710	Project added to 2040 MTP
R-5721B	Project added to 2040 MTP
R-2307A	Project added to 2040 MTP
U-5965	Project added to 2040 MTP
U-5775	Project added to 2040 MTP
U-5959	Project added to 2040 MTP
U-5929	Project added to 2040 MTP
U-5800	Project added to 2040 MTP
U-5819	Project added to 2040 MTP
U-5778	Project added to 2040 MTP
U-5821	Project added to 2040 MTP

Charlotte Regional Transportation Planning Organization Project(s)

The complete list of amended 2040 MTP projects is provided in Appendix B.

Project Identifier	Amendment Description
R-5706A	Horizon Year (HY) shifting to 2025
R-5721A	Horizon Year (HY) shifting to 2025
US 21 Widening	Horizon Year (HY) shifting to 2030
NC 115 Widening	Horizon Year (HY) shifting to 2030
R-2522	Horizon Year (HY) shifting to 2025
U-5960	Horizon Year (HY) shifting to 2030
U-6030	Horizon Year (HY) shifting to 2030
U-6028	Horizon Year (HY) shifting to 2025
U-5807	Horizon Year (HY) shifting to 2025
U-6031	Horizon Year (HY) shifting to 2030
I-5507	Modify mileage in MTP
U-2509	Modify mileage in MTP
I-3819B	Modify MTP Project Details
U-5766	Modify project limits/Modify mileage in MTP
U-5772	Modify mileage in MTP
U-5007	Modify mileage in MTP
U-3467	Modify mileage in MTP
R-2307B	Modify MTP Project Details
U-5905	Modify project limits/Modify mileage in MTP
U-5808	Modify mileage in MTP
U5804	Modify mileage in MTP
U-4714	Modify MTP Project Details
U-5816	Modify mileage in MTP
U-5931	Project added to 2040 MTP

I-5973	Project added to 2040 MTP
I-5963	Project added to 2040 MTP
I-5962	Project added to 2040 MTP
U-5957	Project added to 2040 MTP
C-5701	Project added to 2040 MTP
U-6037	Project added to 2040 MTP
U-5964	Project added to 2040 MTP
U-5107	Project added to 2040 MTP
U-6032	Project added to 2040 MTP
U-6029	Project added to 2040 MTP
U-5987	Project added to 2040 MTP
U-4713A	Project added to 2040 MTP
U-6054	Project added to 2040 MTP
U-6039	Project added to 2040 MTP

Donut Area Project(s)

There were no projects in the Donut Area that were changed from the previous STIP.

AMENDED 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.

Assumptions for revenues and expenditures are the same as shown in the original 2040 MTP Conformity Determination Report because overall costs of projects did not change significantly.

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 2018-2022 are a direct subset of the 2040 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 that is the responsibility of the North Carolina Department of Transportation. The 2040 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 2040 MTPs conform to the provisions of the CAAA of 1990 and MAP-21. Also, the 2040 MTPs conform to the purpose of the SIP in accordance with 40 CFR Part 93.

Copies of the 2018-2022 TIPs and the FY 2018-2022 STIP (for the donut portion in Union County) are attached to this report in Appendix C.

3.0 Latest Planning Assumptions

The planning assumptions used to develop the Conformity Determination Report are the latest planning assumptions in the 2040 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.

4.0 Interagency Consultation

The FY 2018-2022 TIP has undergone interagency consultation as required in the North Carolina Administrative Code Title 15A Subpart 2D 2002-2003 inclusive. Interagency consultation meetings involving the MPOs, NCDOT, NCDQA, FHWA and USEPA- Region 4 were held on March 14, 2017 and June 6, 2017. A summary of issues raised and responses, along with any written agency comments, are provided in Appendix D.

5.0 Public Involvement

The FY 2018-2022 TIP was 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 (RPO). Copies of citizen comments and agency responses to them are attached to this report in Appendix E. The newspaper advertisements for public review and comment period are attached to this report in Appendix F.

6.0 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 July 28, 2015. The horizon years for this conformity determination are 2026, 2030 and 2040. The 2026 MVEB will be used for years 2026, 2030, and 2040.

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

Cabarrus-Rowan MPO		
	2014	2026
NOx	11,814	3,749
VOC	7,173	3,762

Gaston Cleveland Lincoln MPO		
	2014	2026
NOx	10,079	2,996
VOC	5,916	2,755

Charlotte Regional TPO- Rocky River RPO		
	2014	2026
NOx	32,679	9,946
VOC	18,038	9,690

7.0 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	NOx		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	3,459	3,749	3,178	3,762
2030	2,779	3,749	2,802	3,762
2040	1,705	3,749	2,020	3,762

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	NOx		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	2,637	2,996	2,385	2,755
2030	2,010	2,996	2,002	2,755
2040	1,251	2,996	1,461	2,755

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	NOx		VOC	
	MTP Emissions	SIP Budget	MTP Emissions	SIP Budget
2026	8,872	9,946	8,406	9,690
2030	7,299	9,946	7,317	9,690
2040	5,539	9,946	5,991	9,690

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

8.0 Findings of Conformity

Cabarrus-Rowan MPO Ozone Conformity Finding for the 2040 Metropolitan Transportation Plan Amendment and 2018-2022 Transportation Improvement Program

Based on the analysis and consultation and involvement process described in this report, the Cabarrus-Rowan MPO 2040 Metropolitan Transportation Plan Amendment and 2018-2022 Transportation Improvement Program are found to conform to the purpose of the North Carolina SIP. The emissions expected from the implementation of the Cabarrus-Rowan MPO 2040 Metropolitan Transportation Plan Amendment and 2018-2022 Transportation Improvement Program are in conformity with the 2008 8-hour ozone standard.

Gaston-Cleveland-Lincoln MPO Ozone Conformity Finding for the 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program

Based on the analysis and consultation and involvement process described in this report, the Gaston-Cleveland-Lincoln MPO 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program are found to conform to the purpose of the North Carolina SIP. The emissions expected from the implementation of the Gaston-Cleveland-Lincoln MPO 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program are in conformity with the 2008 8-hour ozone standard.

Charlotte Regional Transportation Planning Organization Ozone Conformity Finding for the 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program

Based on the analysis and consultation and involvement process described in this report, the Charlotte Regional Transportation Planning Organization 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program 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 2040 Metropolitan Transportation Plan Amendments and 2018-2022 Transportation Improvement Program are in conformity with the 2008 8-hour ozone standards

NCDOT Donut Area Conformity Finding for Projects from the 2018-2022 State Transportation Improvement Program

Based on the analysis and consultation and involvement process described in this report, the projects from the 2018-2022 State Transportation Improvement Program 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 (SIP). The emissions expected from the implementation of the projects from the 2018-2022 State Transportation Improvement Program are in conformity with the 2008 8-hour ozone standard.

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

The USDOT Conformity Determination Letter is provided in Appendix H.

Appendix A: Metrolina Area Ozone SIP Federal Register Notices

See attached file: "Appendix A.pdf"

Appendix B: Amended 2040 MTPs and Projects from the 2018-2022 STIP for the donut areas

See attached file: “Appendix B.pdf”

The accompanying file includes the MTPs (STIPs for donut areas), by MPO and RPO donut area counties.

- Cabarrus-Rowan MPO 2040 MTP Amended Project List
- Gaston Cleveland Lincoln MPO 2040 MTP Amended Project List
- Charlotte Regional Transportation Planning Organization 2040 MTP Amended Project List

Appendix C: FY 2018-2022 Transportation Improvement Programs

See attached file: “Appendix C.pdf”

The accompanying file includes the TIP (STIP for donut areas), by MPO and RPO donut area counties.

- Cabarrus-Rowan MPO FY 2018-2022 TIP
- Charlotte Regional Transportation Planning Organization TIP FY 2018-2022
- Gaston-Cleveland-Lincoln MPO TIP FY 2018-2022
- Projects from the FY 2018-2022 STIP for Union County

Appendix D: Interagency Consultation

See attached file: “Appendix D.pdf”

The accompanying file includes:

- Consensus Plan
- Conformity Process Schedule
- Interagency Consultation Meeting Minutes

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

See attached file: “Appendix E.pdf”

The accompanying file includes:

- DAQ Comments on the draft Conformity Determination Report
- DAQ Letter of support for the finding of Conformity
- EPA Comments on the draft Conformity Determination Report
- FHWA Comments on the draft Conformity Determination Report
- Public comments received by CRMPO
- Public Comments received by CRTPO
- Public Comments received by GCLMPO

Appendix F: Newspaper Advertisements and Affidavits

See attached file: "Appendix F.pdf"

The accompanying file includes:

- Affidavit for advertisements by CRMPO
- Affidavit for advertisements by CRTPO
- Affidavit for advertisements by GCLMPO

Appendix G: MPO/NCDOT Conformity Determinations and TIP/MTP Amendment Adoptions

Appendix G includes TIP adoption/endorsement and conformity finding resolutions for applicable MPOs (adoption), RPOs (endorsement) and the NCDOT (conformity findings for rural counties).

See attached file: “Appendix G.pdf”

The accompanying file includes:

- Cabarrus-Rowan MPO 2040 MTP Amendment Conformity Determination
- Cabarrus-Rowan MPO 2040 MTP Amendment Adoption
- Cabarrus-Rowan MPO FY 2018-2022 TIP Conformity Determination
- Cabarrus-Rowan MPO FY 2018-2022 TIP Adoption

- Charlotte Regional Transportation Planning Organization 2040 MTP Amendment Conformity Determination
- Charlotte Regional Transportation Planning Organization 2040 MTP Amendment Adoption
- Charlotte Regional Transportation Planning Organization FY 2018-2022 TIP Conformity Determination
- Charlotte Regional Transportation Planning Organization FY 2018-2022 TIP Adoption

- Gaston-Cleveland-Lincoln MPO 2040 MTP Amendment Conformity Determination
- Gaston-Cleveland-Lincoln MPO 2040 MTP Amendment Adoption
- Gaston-Cleveland-Lincoln MPO FY 2018-2022 TIP Conformity Determination
- Gaston-Cleveland-Lincoln MPO FY 2018-2022 TIP Adoption

- NCDOT 2018-2022 STIP conformity finding for the donut area in Union County

Appendix H: USDOT Conformity Determination

SEE ATTACHED FOLDER: "APPENDIX H"

Appendix I: MOVES 2014 & Regional Emissions Analysis Files

MOVES 2014 input and output files are available by request. For copies of the MOVES 2014 files, please contact Todd Pasley at todd.pasley@ncdenr.gov.

Charlotte Regional TPO / Rocky River RPO							
Year	Pollutant	Mecklenburg County (kg/day)	Union County Nonattainment Area (kg/day)	Iredell County Nonattainment Area (kg/day)	Charlotte Regional TPO/ Rocky River RPO Total (kg/day)	Emissions Budget (kg/day)	Comparison to Budget (negative indicates under budget) kg/day
2026	NOX	6,480	1,474	918	8,872	9,946	-1,074
2030	NOX	5,396	1,161	742	7,299	9,946	-2,647
2040	NOX	4,263	773	503	5,539	9,946	-4,407
2026	VOC	6,097	1,490	819	8,406	9,690	-1,284
2030	VOC	5,333	1,278	706	7,317	9,690	-2,373
2040	VOC	4,461	999	531	5,991	9,690	-3,699

Cabarrus-Rowan MPO						
Year	Pollutant	Cabarrus County Nonattainment Area (kg/day)	Rowan County Nonattainment Area (kg/day)	Cabarrus-Rowan MPO Total (kg/day)	Emissions Budget (kg/day)	Comparison to Budget (negative indicates under budget) kg/day
2026	NOX	1,858	1,601	3,459	3,749	-290
2030	NOX	1,538	1,241	2,779	3,749	-970
2040	NOX	1,005	700	1,705	3,749	-2,044
2026	VOC	1,805	1,373	3,178	3,762	-584
2030	VOC	1,650	1,152	2,802	3,762	-960
2040	VOC	1,248	772	2,020	3,762	-1,742

Gaston-Lincoln-Cleveland MPO						
Year	Pollutant	Gaston County Nonattainment Area (kg/day)	Lincoln County Nonattainment Area (kg/day)	Gaston-Lincoln-Cleveland MPO Total (kg/day)	Emissions Budget (kg/day)	Comparison to Budget (negative indicates under budget) kg/day
2026	NOX	1,870	767	2,637	2,996	-359
2030	NOX	1,419	591	2,010	2,996	-986
2040	NOX	915	336	1,251	2,996	-1,745
2026	VOC	1,623	762	2,385	2,755	-370
2030	VOC	1,357	645	2,002	2,755	-753
2040	VOC	986	475	1,461	2,755	-1,294