Appendix F: MOVES Emissions Summary Spreadsheet

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	11,635	2,029	1,383	15,046	**22,417**	**-7,371**
2035	NOX	5,741	863	503	7,106	**22,417**	**-15,311**
2045	NOX	4,255	644	353	5,251	**22,417**	**-17,166**
2055	NOX	4,344	662	350	5,356	**22,417**	**-17,061**
2026	VOC	7,196	1,576	861	9,633	**13,818**	**-4,185**
2035	VOC	6,216	1,161	519	7,895	**13,818**	**-5,923**
2045	VOC	5,646	1,041	426	7,114	**13,818**	**-6,704**
2055	VOC	5,395	983	398	6,776	**13,818**	**-7,042**

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	2,325	1,996	4,321	**6,543**	**-2,222**
2035	NOX	973	709	1,682	**6,543**	**-4,861**
2045	NOX	771	516	1,287	**6,543**	**-5,256**
2055	NOX	828	525	1,354	**6,543**	**-5,189**
2026	VOC	1,688	1,442	3,130	**4,753**	**-1,623**
2035	VOC	1,293	897	2,190	**4,753**	**-2,563**
2045	VOC	1,192	778	1,970	**4,753**	**-2,783**
2055	VOC	1,187	737	1,925	**4,753**	**-2,828**

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	2,843	1,104	3,947	**5,117**	**-1,170**
2035	NOX	981	383	1,364	**5,117**	**-3,753**
2045	NOX	669	285	954	**5,117**	**-4,163**
2055	NOX	641	281	923	**5,117**	**-4,194**
2026	VOC	1,833	797	2,630	**3,583**	**-953**
2035	VOC	1,170	507	1,677	**3,583**	**-1,906**
2045	VOC	952	457	1,409	**3,583**	**-2,174**
2055	VOC	863	423	1,286	**3,583**	**-2,297**

Appendix G: MOVES Emissions Analysis Results

To obtain copies of the MOVES Emissions Analysis Results, please contact Todd Pasley at todd.pasley@ncdenr.gov

Emissions Modeling Information for Transportation Conformity Determination: Metrolina 2055 MTP, 2008 Ozone Standard

MOVES4.0.2 Emissions Model Input Data Information

Daily vehicle miles traveled (VMT) and speed data for years 2026, 2035, 2045, 2055 were generated by Charlotte DOT (CDOT) using the MRM25v3.0 travel demand model (TDM) and were provided to the NC Division of Air Quality (DAQ) on October 31, 2025. Emissions modeling using MOVES4.0.2 was completed on November 24, 2025.

Allocation of VMT by MOVES road types and source types was based on a VMT Mix (Fraction of VMT on Facility Type by Vehicle Type) created from 2023 NCDOT HPMS Travel Activity by Vehicle Type data, projected for future years (2026 and beyond) according to EPA guidance.

SourceTypeAgeDistributon (Vehicle Age Distribution in the consensus plan) input data were based on 2023 NCDOT vehicle registration data, projected for future years (2026 and beyond) according to EPA guidance.

RoadTypeDistribution, HPMSvTypeYear, and HourVMTFraction input data were generated from MRM25v3.0 TDM data and the VMT Mix data using database operations and EPA converter tools.

Default MOVES4.0.2 model DayVMTFraction and MonthVMTFraction input data were used.

AvgSpeedDistribution input data were generated from MRM25v3.0 TDM data using MOVES tools and EPA guidance.

Meteorological input data (temperature and relative humidity) were developed from 2014 monthly average 24-hour temperature and relative humidity profiles from the Charlotte Douglas Airport (ASOS Station ID KCLT).

I/M Program Compliance Factor Coverage was calculated as per MOVES4.0.2 guidance based on a 96% compliance rate and a 5% waiver rate.

I/M Program Model Year Coverage included vehicles from the 20 latest model years, exempting the 3 latest model year vehicles.

Fuel Supply, Fuel Formulation, and Fuel Usage Fraction input data were based on MOVES4.0.2 default data.

SourceTypePopulation input data were based on 2023 DMV Registration Data projected to 2026, 2035, 2045, and 2055 using future human population projections from the MRM25v3.0 TDM data.