DRAFT

Amendment 2

Conformity Analysis and Determination Report for the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, and the Mecklenburg-Union MPO 2030 Long Range Transportation Plans and the FY 2007-2013 Transportation Improvement Programs and for Non-MPO Areas of Lincoln County, Iredell County, Gaston County, and Union County areas

(8-Hour Ozone, and CO (Mecklenburg County Only))

DATE 2007

DATE 2007
USDOT Conformity Finding

Prepared by:

The North Carolina Department of Transportation as an agent of:

The Cabarrus-Rowan Metropolitan Planning Organization,
The Gaston Urban Area Metropolitan Planning Organization,
The Mecklenburg-Union Metropolitan Planning Organization,
The Lake Norman Rural 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

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Additional copies of this report can be obtained from the following websites: www.crmpo.org, www.gastonmpo.org, and www.mumpo.org.

TABLE OF CONTENTS

INTRODUCTION

This report constitutes Amendment 2 to the Conformity Determination Report dated June 8, 2005 prepared on behalf of:

- The Cabarrus-Rowan Metropolitan Planning Organization (CRMPO);
- The Gaston Urban Area Metropolitan Planning Organization (GUAMPO);
- The Mecklenburg-Union Metropolitan Planning Organization (MUMPO);
- The portion of the Lake Norman Rural Planning Organization (RPO) in Western Gaston County, Lincoln County, and Southern Iredell County; and
- The portion of the Rocky River Rural Planning Organization (RPO) in Eastern and Southern Union County.

Based on the results of the analysis described in this report, the 2030 Long-Range Transportation Plans (LRTPs) for CRMPO, GUAMPO, and MUMPO, and their latest, respective Transportation Improvement Programs (TIPs) conform to the purpose of the North Carolina State Implementation Plan (SIP) (or interim emissions test, in areas where no State Implementation Plan is approved or found adequate by EPA). This transportation conformity determination is supported by the following findings:

- The Fiscal Year (FY) 2007-2013 TIP is a direct subset of the conforming 2030 LRTPs.
- Each LRTP has a 20-year planning horizon.
- The conformity determinations for the RPOs (donut areas[1]) were made by the North Carolina Department of Transportation (NCDOT). NCDOT concluded that the projects in the donut areas included in the FY 2007-2013 TIP conform to the purpose of the North Carolina SIP (or interim emissions test, in areas where no State Implementation Plan is approved or found adequate by EPA).

The 2030 LRTPs were adopted:

- by the Cabarrus-Rowan MPO on May 18, 2005
- by the Gaston Urban Area MPO on May 24,2005
- by the Mecklenburg-Union MPO on June 8, 2005

Periodically, as needs and conditions change, it becomes necessary to amend the LRTPs. The above-named MPOs, Lake Norman and Rocky River Rural Planning Organization are taking this opportunity to analyze the transportation conformity implications of the FY 2007-2013 TIP adopted by the North Carolina Board of Transportation on March 1, 2007. The changes in the FY 2007-2013 TIP significant to conformity are that seven projects in the region will be rescheduled

1 Donut areas are geographic areas outside a MPO, but inside the boundary of a nonattainment or maintenance area. Donut areas are not isolated rural nonattainment and maintenance areas.

from the 2010 horizon year to the 2020 horizon year and one project will be rescheduled from the 2030 horizon year to the 2020 horizon year. Four of these projects are regionally significant and/or federally funded. These changes warrant reevaluation and reaffirmation of the transportation conformity determination.

A copy of the 2030 LRTP for each MPO is available on-line at, www.crmpo.org, www.gastonmpo.org, and www.mumpo.org.

AMENDED PROJECTS

As noted above, this amendment includes changes in the timing of projects included in the FY 2007-2013 TIP for the geographic area presented in Figure 1 (see page 12). Changes in the horizon years for this group of four regionally-significant projects resulted in having to do a new regional emissions analysis for this transportation conformity determination.

Non-exempt projects that represent a change in timing of an existing LRTP project may be required to be part of travel demand model assumptions for the appropriate analysis year. All projects in this amendment will be implemented by 2020; therefore, they are included in the travel model assumptions for that horizon year. Table 1 provides a summary of the project horizon year changes. This amendment also provides an opportunity to incorporate the most current cost estimates as required in the fiscal constraint requirements for the LRTPs. 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

All projects in the 2007-2013 MTIP are a direct subset of the currently conforming LRTP (May 18, 2005).

Gaston Urban Area MPO Projects

TIP Project U-4915 in Bessemer City was rescheduled by the North Carolina Board of Transportation to occur after 2010. The project is now scheduled to be completed by 2020. The project is located off SR 1307 (Edgewood Road). The road will be widened to three lanes.

Mecklenburg-Union MPO Projects

TIP Project U-4024A (US 601 widening) in Monroe was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves widening of US 601 from existing US 74 to the proposed Monroe Bypass (R-2559). This project is regionally significant and federally funded.

TIP Project R-2559 (US 74 Monroe Bypass) in Union County was rescheduled by

the North Carolina Board of Transportation to be built beyond 2010. The project will be completed by 2020. The project extends from west of US 601 north of Monroe to existing US 74 west of Marshville. This project is regionally significant and is federally funded.

TIP Project R-0211EC was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves the construction of a new interchange at the existing grade separation of I-485 and SR 3468 (Weddington Road) in Mecklenburg County. This project is regionally significant and federally funded.

TIP Project U-2507A was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves the widening and new location construction for SR 2467 (Mallard Creek Road) from SR 2480 (Sugar Creek Road) to SR 2665 (Harris Boulevard) in Mecklenburg County. This project is regionally significant and federally funded.
TIP Project U-2547 in Monroe was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves making capacity improvements to SR 2188 (Charles Street) from SR 2181 (Sunset Drive) to SR 2100 (Franklin Street). While this project is not regionally significant, it is federally funded.

TIP Project U-3467 was scheduled by the North Carolina Board of Transportation for construction prior to 2020. This project was previously scheduled to be completed by 2030. The project involves the extension of SR 1316 (Rea Road) from NC 16 to SR 1008 (Indian Trail-Waxhaw Road). While this project is not regionally significant, it is federally funded.

TIP Project U-2704 was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves interchange improvements at US 29/74 (Wilkinson Boulevard) and SR 5901 (Billy Graham Parkway). While this project is not regionally significant, it is federally funded.

In the event that the regional emissions analysis for the Mecklenburg Union Metropolitan Planning Organization (MUMPO) and the Gaston Urban Area Metropolitan Planning Organization (GUAMPO) 2030 long range transportation plan (LRTP) amendments cannot be completed in a timely fashion prior to June 30, 2007, a transportation conformity determination will be made only for those projects in the 07-13 State/Metropolitan Transportation Improvement Programs (TIPs) that are direct subsets of the currently conforming MUMPO and GUAMPO 2030 LRTPs.

Table 1. Project Amendment Summary

Plan ID/ County	Route	Description	Scope Change Y = yes N = no * = add to TIP	Original AQ Analysis Year	Revised AQ Analysis Year
U-4915/Gaston	NC-273	CONSTRUCT EXTENSION OF SOUTHRIDGE PARK DRIVE OFF SR 1307 (EDGEWOOD RD.).	N	2010	2020
U-4024 / Union	US 601	US 601, US 74 TO THE PROPOSED MONROE BYPASS (R-2559). WIDEN TO MULTI-LANES.	N	2010	2020
R-2559 / Union	US 74	MONROE BYPASS. FOUR LANES DIVIDED ON NEW LOCATION.	N	2010	2020
U-2547/ Union	SR 2188	SR 2188 (CHARLES STREET), SR 2181 (SUNSET DRIVE) TO SR 2100 (FRANKLIN STREET). WIDEN TO MULTI-LANES.	N	2010	2020
R-0211EC / Mecklenburg	I-485	I-485/SR 3468 (WEDDINGTON ROAD). CONSTRUCT INTERCHANGE.	N	2010	2020
U-2507A/ Mecklenburg	SR 2467	SR 2467 (MALLARD CREEK ROAD), SR 2480 (SUGAR CREEK ROAD) TO SR 2665 (HARRIS BOULEVARD). WIDEN TO MULTI-LANES, PART ON NEW LOCATION.	N	2010	2020
U-3467/ Union	SR 1316	SR 1316 (REA ROAD) EXTENSION, NC 16 TO SR 1008 (INDIAN TRAIL-WAXHAW ROAD). MULTI-LANES, PART ON NEW LOCATION.	N	2030	2020
U-2704/ Mecklenburg	US 29/74	US 29-74 (WILKINSON BOULEVARD) AND SR 5901 (BILLY GRAHAM PARKWAY). AREA IMPROVEMENTS.	N	2010	2020

AMENDED FISCAL CONSTRAINT DETERMINATION

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

These LRTPs 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 LRTPs. The LRTPs also describe revenues from all sources that will be available to pay for capital and O&M costs. Each LRTP describes in detail its own financing plan. The financial constraints for each LRTP were also summarized in Chapter 3 of the June 30, 2005 Conformity document.

Assumptions for revenues and expenditures are the same as shown in the original document because overall costs of projects did not change significantly. The only changes affect the air quality analysis years, as described in Table 1.

TRANSPORTATION CONFORMITY

The conformity determination accomplishes the intent of the North Carolina State Implementation Plan (SIP) (or interim emissions test, in areas where no SIP is approved or found adequate). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by each of the above-named Metropolitan Planning Organizations (MPOs) for their 2030 LRTPs, donut area projects from the FY 2007-2013 for the Rural Planning Organizations (RPOs) and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (DENR). Based on this analysis, the 2030 LRTPs (as amended) for GUAMPO and MUMPO, and their respective FY 2007-2013 Transportation Improvement Programs (TIPs) conform to the purpose of the North Carolina SIP (or interim emissions test, in areas where no SIP is approved or found adequate). The FY 2007-2013 TIPs (i.e., project scope/description, project length, number of lanes) and horizon year (project completion) are direct subsets of the conforming 2030 Long-Range Transportation Plans (LRTPs). The LRTPs have a 20-year planning horizon. The conformity determination for the RPOs (donut areas) was made by the North Carolina Department of Transportation (NCDOT). RPO (donut area) projects conform to the purpose of the North Carolina SIP (or interim emissions test, in areas where no SIP is approved or found adequate).

Mecklenburg County was originally declared to be in nonattainment for carbon monoxide (CO) on March 3, 1978. Mecklenburg County was declared to be in

nonattainment for ozone on November 15, 1990. Following the Clean Air Act Amendments of 1990, the USEPA designated Mecklenburg County as a moderate nonattainment area for ozone and "not-classified" for CO. Mecklenburg County was re-designated as a maintenance area for ozone on July 5, 1995 and for CO on September 18, 1995.

Gaston County was declared to be in nonattainment for ozone on November 15, 1990. Gaston County was re-designated as a maintenance area for ozone on July 5, 1995.

In 1997 the 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 eight-hour ozone standard was established. In April 2004, the USEPA declared the entire Metrolina area (as shown in Figure 1) as being in moderate nonattainment for eight-hour ozone. This area includes:

The Cabarrus-Rowan Metropolitan Planning Organization (CRMPO);
The Gaston Urban Area Metropolitan Planning Organization (GUAMPO);
The Mecklenburg-Union Metropolitan Planning Organization (MUMPO);
The portion of the Lake Norman Rural Planning Organization in western Gaston County, Lincoln County, and southern Iredell County;
The portion of the Rocky River Rural Planning Organization in eastern and southern Union County; and
The Rock Hill, Fort Mill Area Transportation Study (RFATS) an MPO comprising the urbanized (eastern) half of York County, SC.

Although a portion of York County, South Carolina was designated as part of the bi-state Charlotte 8-hour ozone nonattainment area, they are allowed to demonstrate transportation conformity independent of the North Carolina portion of this nonattainment area. As thus, the planning assumptions and methodologies used for the York County, South Carolina portion of this nonattainment area is reflected in a separate transportation conformity determination that is generated by the Rock Hill-Fort Mill Area Transit Study Metropolitan Planning Organization.

This conformity analysis applies the same travel model and planning assumptions, except the highway network amendments described in Table 1, as included in the original 2030 LRTPs. There were slight changes in some of the Mobile 6.2 emissions factors as a result of the shifting of projects. Those changes are documented in the amended Appendix E.

For Carbon Monoxide, vehicle miles of travel (VMT), the VMT normalization, emissions factors used to calculate the emissions budget, and the interpolation equations for 2002 are shown in amended Appendix H.

The transportation conformity emissions for NOx and VOC for 2002, 2010, 2020,

and 2030 use vehicle miles of travel (VMT) and speeds from the MUMPO 2030 LRTP and the GUAMPO 2030 LRTP. Conformity emissions for Mecklenburg County include off-model emissions reductions for Incident Management on Interstates and Freeways. The techniques used for this 2007-2013 TIP conformity process are the following:

- VMT and speed will be done for 4 times of day (the 4 times of days are summed for the regional emissions analysis)
  - 6:30 am - 9:30 am
  - 9:30 am - 3:30 pm
  - 3:30 pm - 6:30 pm
  - 6:30 pm - 6:30 am

- Off model work (applied to all scenarios):
  - ITS enhanced
  - Signal System
  - Vanpool

- Updated vehicle starts from the new model were also added

Incident Management - Incident management reduces congestion by removing vehicles that have been involved in an accident or are simply just broken down. This is not a benefit that can be reflected through the travel demand model therefore, the effect must be determined through off-model calculations. Reductions in emissions for the Metrolina non-attainment area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 18.

Emissions are reduced as a result of implementing incident detection and response along interstates and freeways in the Metrolina region. The projects analyzed are outlined in the *Metrolina Regional ITS Deployment Plan*, one of nine reports comprising the *Statewide Strategic ITS Deployment Plan*. The future year projects analyzed for Mecklenburg County are listed in Tables 6-7, 6-8, and 6-9 of MUMPO's *2030 Long Range Transportation Plan*. All freeway segments analyzed in Cabarrus and Rowan Counties currently have incident detection and response in place.

Regional interstate, freeway, and HOV emissions were calculated based on emission factors established by the North Carolina Department of the Environment and Natural Resources (NCDENR) and based on speeds and VMT provided by the Charlotte Department of Transportation. Daily reductions were calculated by applying the following equation to the AM peak period, midday, PM peak period, and night time periods analyzed in the model.

$E_D = VMT_I * E_C / VMT_T * EFF$

Where:
VMT_I = VMT of Freeway / Interstate
VMT_T = Regional Freeway / Interstate VMT
E_C = Regional Freeway / Interstate Emissions * 0.049
EFF = Project Effectiveness, 50% for Incident Detection and Response

Vanpool Programs - Vanpool programs reduce emissions by reducing the number of vehicle trips during the AM and PM peak periods. Although the Metrolina Regional Travel Demand Model captures the effect of carpooling, it does not reflect the benefit of the Charlotte Area Transit System's Vanpool Program. Reductions in emissions for the Metrolina non-attainment area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 16.

The following equations were used to calculate the reduction in emissions due to vanpooling.

NOx Reductions(kg/day) = Net Reduction of Miles * (Emission Factor(g/mi) / 1000)

where: Net Reduction of Miles = (Cars Removed * Avg. Commute per Vehicle) – (# of Vanpools * Avg. Commute per Vehicle) Cars Removed = (# of Vanpools * Avg. # of Riders) / Commute Vehicle Occupancy Rate

Intersection Improvements – Traffic Signal Computer Upgrade - Although the Metrolina Regional Travel Demand Model captures the effect of intersection controls on speed and capacity, it does not reflect the benefit of coordinated signal systems. As such, the effect must be determined through off-model calculations. Reductions in emissions for the Metrolina Non-Attainment Area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 5.

The Charlotte Department of Transportation's Engineering and Operations Division, the City of Salisbury's Engineering Division, the City of Concord's Transportation Department, and NCDOT provided information regarding the number of signal systems, average time savings per signalized intersection, and the average number of signals per system. The average number of vehicles per peak period was calculated by computing the vehicle miles of travel on each roadway segment affected by the signal systems and then dividing by the total number of miles covered by the signal systems.

Emission factors were established by the North Carolina Department of the Environment and Natural Resources (NCDENR) based on speeds provided by the Charlotte Department of Transportation. Coordinated signal systems in the Metrolina region optimize travel time with different signal patterns for 24 hours

and different patterns on weekends. While this reduces idling time for the full day, we feel it is appropriate to use the more conservative approach of assuming air quality benefits only when congestion is heaviest in the AM and PM peak periods.

The following equation was used to calculate emission benefits:

NOx Reductions (kg/day) = AM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/AM peak period) + PM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/PM peak period)

VOC Reductions (kg/day) = AM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/AM peak period) + PM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/PM peak period)

CO Reductions (kg/day) = AM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/AM peak period) + PM Peak Period Emission Rate (kg/veh hr) * Savings in Idle Time (hrs/PM peak period)

where:

Savings in Idle Time (hrs/day) = Vehicles per Peak Period * Avg. # of Signals per System * # of Signal Systems * Avg. Time Savings per Signal per Dir./ 3600 (sec/hr)

The VMT, the VMT normalization and emissions factors used to calculate the emissions budget, and the interpolation equations for 2002 are shown in amended Appendix G

Table 2 contains a summary of results from the Gaston County budget comparison, and Table 3 provides the same summary for Mecklenburg County.

In every horizon year for every pollutant, the emissions expected from the implementation of the LRTPs are less than the emissions budgets for Mecklenburg County and Gaston County adopted in the Maintenance Plan and established in the SIP. The other counties in the nonattainment area do not have emissions budgets at this time.

For the nonattainment area as a whole, prescribed interim tests were performed for NOx and VOC, in lieu of budget comparisons. Table 4 provides a summary of the interim test results.

Table 2. Gaston County Emissions Comparison Summary - 1 Hour Ozone

Gaston County Emissions Comparison Summary (tons/day)[1]				
Year	**NO_x**		**VOC**	
	Confor-mity	**SIP Budget**	**Confor-mity**	**SIP Budget**
2010	5.8	8.7	3.8	5.7
2020	2.4	8.7	2.8	5.7
2030	1.7	8.7	2.3	5.7

[1]To obtain kilograms per day, multiply tons per day by 907.18.

Figure 1. MPO and Non-MPO areas Comprising the Metrolina Nonattainment Area

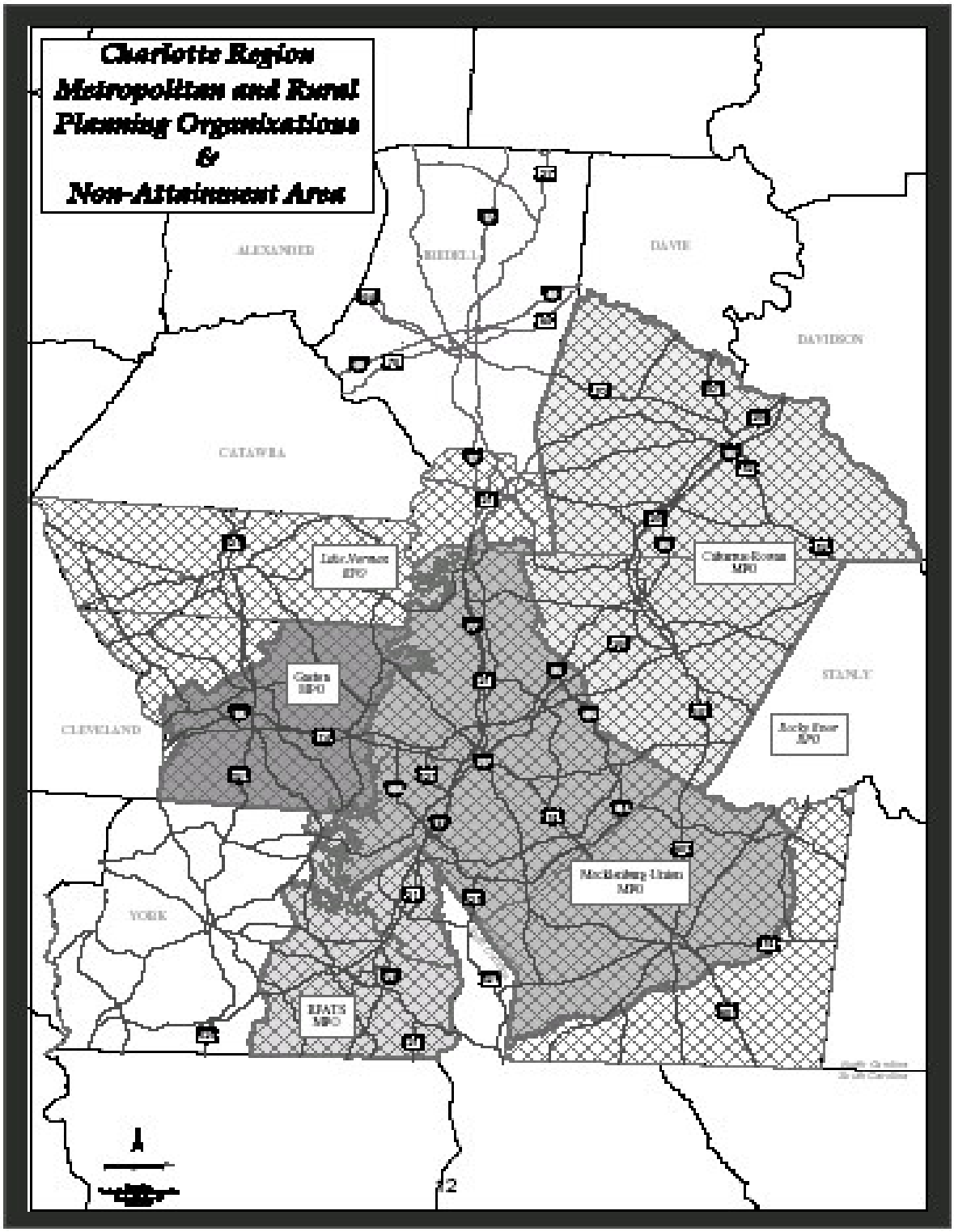

Table 3. Mecklenburg County Emissions Comparison Summary - 1 Hour Ozone and CO

Mecklenburg County Emissions Comparison Summary (tons/day)[1]						
Year	**CO**		**NO_x**		**VOC**	
	Confor-mity	**SIP Budget**	**Confor-mity**	**SIP Budget**	**Confor-mity**	**SIP Budget**
2010	279.90	419.62	20.81	33.0	14.76	25.9
2020	327.59	470.18	8.30	33.0	9.59	25.9
2030	367.74	470.18	6.90	33.0	9.23	25.9

[1]To obtain kilograms per day, multiply tons per day by 907.18.

Table 4. Regional Interim Emissions Test Comparison Summary

Comparison: Metrolina Region Future Year Emissions Less Than Base Year Emissions and Build Emissions Less Than No-Build Emissions (kg/day)						
	NOx			**VOC**		
	Confor-mity	**Build < Base year**	**Build < No-Build**	**Confor-mity**	**Build < Base year**	**Build < No-Build**
Base year 2002	103,089			66,983		
Future year						
2010 Build	55,451	Yes	Yes	40,996	Yes	Yes
2010 No-Build	55,622			41,168		
2020 Build	23,666	Yes	Yes	25,760	Yes	Yes
2020 No-Build	23,711			27,187		
2030 Build	18,280	Yes	Yes	24,567	Yes	Yes
2030 No-Build	18,513			25,677		

Based on the results of the analysis and the interagency consultation meetings discussed in this Amendment 2, the 2030 CRMPO LRTP, the 2030 GUAMPO LRTP, and the 2030 MUMPO LRTP, together with the 2007-2013 STIP projects in the non-MPO donut areas, conform to the purpose of the North Carolina State Implementation Plan. In every analysis year for every pollutant, the emissions expected from the implementation of the long-range transportation plans are less than the emissions budget for each MPO as adopted in the Maintenance Plan and established in the SIP. In addition, in every analysis year for every pollutant, the 2030 CRMPO LRTP, the 2030 GUAMPO LRTP, and the 2030 MUMPO LRTP, together with the 2007-2013 STIP projects in the non-MPO areas pass all interim emissions tests for the eight hour ozone standard.

The North Carolina State Implementation Plan does not contain any transportation control measures (TCM's), therefore, nothing in this Amendment 2 can interfere with the timely implementation of TCMs.

PUBLIC INVOLVEMENT

The 2030 LRTPs for CRMPO, GUAMPO, and MUMPO, as well as the Transportation Conformity Report, were developed with significant attention to public involvement. Provisions for public comment on this Amendment 2 were provided through a 30-day public review and comment period. Advertisements are included in the amended Appendix K. Public comments are summarized in the amended Appendix M.

Note: Both the Advertisements and any public comments will be inserted in this document after they take place.

Appendices A, B, D and are not included in this report because their contents did not change from the conformity document dated June 8, 2005

Appendix C (amended): Discussion of Emissions Development

The following text and tables are revisions to similar information that previously appeared in the Conformity document dated June 8, 2005.

Vehicle Age Distribution

The vehicle age distribution comes from annual registration data from NCDOT. NCDOT provided **2004** registration data by vehicle type for this conformity analysis.

Starts per Vehicle

Estimation of Vehicle Starts:

A component of the emissions rates for each functional class is an estimate of the start-based emissions. This rate is based on an assumed number of starts per vehicle and is added to running emissions to produce a single rate to apply to vehicle miles traveled. Mobile 6 defaults are 7.28 starts for passenger cars and 8.06 starts for light duty trucks.

Mobile6 Defaults

Vehicle type	# of starts
1(LDGV)	7.28
2(LDGT1)	8.06
3(LDGT2)	8.06
4(LDGT3)	8.06
5(LDGT4)	8.06
6(HDGV2B)	6.88
14(LDDV)	7.28
15(LDDT12)	8.06
24(MC)	1.35
28(LDDT34)	8.06

However, the use of default rates isn't the best practice for heavily urbanized area with an updated travel Demand model. Area specific rates could be calculated by dividing the total number of trips from the travel demand model by the total number of registered vehicles.

	Auto & Truck Registration		
Year	Mecklenburg	Gaston	Donut (less Iredell)
1995	435,886	131,789	305,496
1996	445,588	132,591	314,684
1997	449,918	133,039	322,322
1998	469,333	136,161	340,430
1999	490,781	138,198	355,733
2000	508,766	139,695	367,462
2001	512,017	139,378	377,061
2002	524,474	139,984	389,464
2003	533,658	140,178	397,024
2004	548,546	141,928	410,351
2005	571,243	143,721	421,768
2008	606,118	147,133	458,893
2009	619,494	148,290	470,779
2010	632,870	149,447	482,666

2017	726,501	157,544	565,872
2020	766,629	161,015	601,532
2030	900,389	172,583	720,399

- 1995-2005 Reg data are reported and 2008-2030 Reg data are projected.

Total Number of starts/Trips:

Year / Run	Mecklenburg	Gaston	5-County (less Iredell)
2002	3,463,485	779,206	1,917,461
2005	3,654,720	801,121	2,046,143
2010 Build	4,101,885	882,993	2,378,103
2010 Nobuild	4,101,885	882,993	2,378,103
2020 Build	5,083,882	1,051,111	3,165,070
2020 Nobuild	5,110,410	1,052,108	3,284,411
2030 Build	6,029,326	1,229,326	4,024,617
2030 Nobuild	6,039,362	1,230,035	4,026,586

Trip Rates:

Year / Run	Mecklenburg	Gaston	Donut (less Iredell)
2002	6.60	5.57	4.92
2005	6.40	5.57	4.85
2010 Build	6.48	5.91	4.93
2010 Nobuild	6.48	5.91	4.93
2020 Build	6.63	6.53	5.26
2020 Nobuild	6.67	6.53	5.46
2030 Build	6.70	7.12	5.59
2030 Nobuild	6.71	7.13	5.59

- Registrations data is from NCDOT/DMV and Metrolina Trips are provided by

CDOT from Metrolina Regional Travel Demand Model

We recommend using the above rates for various scenarios and for the following vehicle classes (Mobile 6 classes 1,2,3,4,5, 14,15, and 28). Starts per vehicle for MC and all other classes would remain unchanged. The described method is consistent with David Brzezinski 's Email copied below.

Re: Number of starts per day for Mecklenburg County
Date: Mon, 28 Feb 2005 11:50:35 -0500
From: Brzezinski.David@epamail.epa.gov
To: Behshad Norowzi <bnorowzi@dot.state.nc.us>
CC: Aspy.Dale@epamail.epa.gov

I have looked over your methodology and agree that it shows a lower overall starts per day (trips) than any the MOBILE6 default values.
This is true even though your figure includes some starts that are assumed to occur outside Mecklenburg County. It would be reasonable to use your calculated values in place of the MOBILE6 defaults for all of the vehicle classes (gasoline and diesel), except for motorcycles, which already has a very low rate.

David Brzezinski
EPA OTAQ ASD
734-214-4235

David Brzezinski/AA/US EPATo: Dale Aspy/R4/USEPA/: 03/21/2007 11:38 AM
cc: Lynorae Benjamin/R4/USEPA/US@EPA
Subject
Re: Fw: [Fwd: Number of starts per day for Mecklenburg County
It is not clear from the spreadsheet alone whether Behshad's analysis is based on a travel demand model or some other method. I don't remember if this was explained when this was originally discussed. Travel demand models are more appropriate for light duty vehicles that are typically used for transportation purposes, but are not usually a good source for information about commercial heavy duty truck activity.

However, MOBILE6 does *not* have separate engine start emission rates for trucks over 8,500 lbs. GVWR (heavy duty trucks). Using these engine start activity estimates for all vehicle classes will have the same effect as using them for only the light duty vehicle (up to 8,500 lbs.). "Expanding" the use of these rates to heavy duty vehicles should have no effect on the emission estimates for these trucks.

So, as long as these new engine start activity estimates were not applied to motorcycles (which I explicitly mentioned in my earlier email), it is reasonable to apply these rates to all of the other vehicle classes in MOBILE6. Only the light duty vehicles will be affected.

Speed Assumptions

Speeds were provided for 2002, 2010 build and no-build, 2020 build and no-build, and 2030 build and no-build. **Table C-14** reflects the shift to four evaluations per day analysis and indicates the speed assumptions by road type for each evaluation year.

Table C- 14. Speeds by Road Type (amended) ***Note:*** speeds for 2010 were the same for build no build

Average Speed MPH	2002	2002	2002	2002	2010	2010	2010	2010	20Bld	20Bld	20Bld	20Bld	20No b	20No b	20No b	20No b	30Bld	30Bld	30Bld	30Bld	30No b	30No b	30No b	30No b
AM Peak	AMPk	Middy	PMPk	Nite	AMPk	Middy	PMPk	Nite	AMPk	Middy	PMPk	Nite	AMPk	Middy	PMPk	Nite	AMPk	Middy	PMPk	Nite	AMPk	Middy	PMPk	Nite
Gaston																								
71IR: Rural Interstate	51	55	54	55	39	55	48	55	32	53	33	55	24	53	33	55	31	54	45	55	30	54	44	55
71PR: Rural Principal Arterial	54	55	54	55	50	55	53	55	47	54	51	54	45	54	51	55	47	54	50	54	42	52	48	54
71MR: Rural Minor Arterial	44	51	46	53	42	49	40	51	36	47	37	49	34	48	35	51	36	46	36	49	29	45	29	49
71CM: Rural Major Collector	42	51	44	53	41	51	42	53	29	48	36	53	30	48	34	53	36	47	35	53	28	43	28	52
71CR: Rural Minor Collector	39	40	39	40	39	40	39	40	37	39	37	40	37	39	36	40	36	39	36	39	35	39	35	40
71LR: Rural Local	27	27	28	27	27	27	27	26	27	26	28	26	27	26	27	26	27	26	27	26	27	27	27	26
71IU: Urban Interstate	46	59	51	58	36	59	42	59	38	59	42	60	26	58	32	59	44	60	42	61	34	59	34	60
71FU: Urban Oth Frwy/Xprwy	52	55	52	56	51	54	51	55	51	53	51	55	50	53	49	55	52	54	52	55	47	53	48	55
71PU: Urban Principal Arterial	32	39	31	45	30	37	29	43	30	40	32	44	22	34	24	42	31	40	32	45	26	38	27	45
71MU: Urban Minor Arterial	34	40	33	44	31	39	32	44	31	39	32	44	25	36	26	43	32	40	33	44	28	37	28	44
71CU: Urban Collector	25	30	21	37	24	31	21	37	20	31	20	38	21	30	20	38	24	32	22	38	17	30	17	38
71LU: Urban Local	23	23	23	23	23	23	23	23	23	23	23	23	23	24	24	24	23	23	23	23	22	23	23	23
Mecklenburg																								
119PR: Rural Principal Arterial	40	49	38	51	34	48	32	54	29	43	29	52	22	39	20	51	29	46	30	53	21	38	20	50
119MR: Rural Minor Arterial	25	36	26	50	22	31	22	48	16	24	15	42	14	23	13	42	22	38	28	51	11	18	10	38
119CM: Rural Major Collector	35	38	34	38	32	41	29	44	29	40	28	43	22	35	20	43	26	40	31	43	18	34	17	43
119CR: Rural Minor Collector	44	48	44	50	39	46	37	50	35	43	33	48	26	40	23	47	33	40	29	48	26	37	23	47
119LR: Rural Local	30	29	30	29	29	29	29	29	27	28	27	28	26	28	26	28	26	28	26	30	24	28	24	29
119IU: Urban Interstate	45	57	42	60	46	57	43	61	44	54	41	60	31	54	28	61	43	57	39	60	36	54	34	59
119FU: Urban Oth Frwy/Xprwy	41	46	40	51	47	50	46	53	47	53	48	54	42	49	41	52	47	53	47	55	42	52	42	54
119PU: Urban Principal Arterial	26	32	24	43	25	31	23	43	24	31	22	42	20	29	19	42	22	29	20	42	20	28	18	42
119MU: Urban Minor Arterial	26	32	23	42	25	31	22	42	24	29	20	41	20	28	17	41	23	30	20	42	20	27	17	41
119CU: Urban Collector	22	31	22	41	21	29	20	41	19	28	18	41	16	26	15	40	17	26	16	40	15	25	14	39
119LU: Urban Local	22	22	21	24	22	22	20	24	21	22	19	24	21	22	19	24	19	16	11	24	18	16	10	24
119HO: Urban HOV	0	0	0	0	53	50	52	50	53	50	53	50	52	50	52	50	48	50	47	50	47	50	44	50
5 County																								
500IR: Rural Interstate	60	65	62	65	58	65	54	65	56	61	49	61	41	62	30	65	57	62	54	62	52	61	33	61
500PR: Rural Principal Arterial	48	52	47	55	48	52	47	55	49	52	48	54	42	50	41	54	46	51	46	54	45	50	44	54
500MR: Rural Minor Arterial	41	50	40	56	40	47	37	55	34	43	34	53	29	43	27	53	36	45	36	53	27	38	26	52
500CM: Rural Major Collector	48	51	47	53	45	50	44	53	42	47	40	53	36	46	34	52	39	46	37	52	36	44	34	52
500CR: Rural Minor Collector	44	46	42	48	41	45	41	48	39	45	37	49	34	42	33	48	36	44	34	49	33	42	31	49
500LR: Rural Local	28	28	29	28	28	28	28	28	28	28	27	29	27	28	27	28	27	27	26	28	26	27	26	28
500IU: Urban Interstate	55	61	53	62	46	62	43	62	53	59	53	59	33	60	21	62	51	60	53	60	47	59	46	59
500FU: Urban Oth Frwy/Xprwy	34	45	33	54	33	44	32	54	33	50	40	51	25	39	24	52	35	52	41	53	20	49	27	51
500PU: Urban Principal Arterial	35	40	32	49	33	38	30	47	31	35	28	46	25	34	22	45	30	35	27	46	26	32	23	45
500MU: Urban Minor Arterial	35	40	33	46	32	37	30	45	30	35	27	45	25	33	22	44	30	35	27	45	24	32	22	44
500CU: Urban Collector	33	35	30	40	31	34	28	40	27	32	24	40	25	32	22	40	27	33	24	40	22	29	20	40
500LU: Urban Local	25	25	25	25	25	25	24	26	25	25	24	26	23	25	22	26	25	25	24	26	23	25	23	26

Appendix E (amended): Mobile 6.2 Emission Factor Summary

The following Tables are revisions to Tables that previously appeared in Amendment 1 dated September 16, 2005.

Note: Emission Factor Summary for 2010 build and no build is the same

2002 Build Emission Factors for Gaston County

Road Type	2002 Build - AM Peak				2002 Build - Midday Peak				2002 Build - PM Peak				2002 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	4.883	4.894	0.944	0.995	5.185	5.196	0.930	0.980	5.113	5.125	0.934	0.984	5.185	5.196	0.930	0.980
Rural principle arterial	2.990	3.001	1.024	1.085	3.026	3.037	1.021	1.081	2.990	3.001	1.024	1.085	3.026	3.037	1.021	1.081
Rural minor arterial	1.782	1.793	1.092	1.161	1.902	1.913	1.063	1.129	1.810	1.822	1.083	1.151	1.950	1.962	1.056	1.121
Rural major collector	1.623	1.635	1.109	1.179	1.746	1.758	1.070	1.136	1.643	1.655	1.099	1.169	1.787	1.798	1.063	1.128
Rural minor collector	1.657	1.668	1.120	1.192	1.662	1.674	1.115	1.186	1.657	1.668	1.120	1.192	1.662	1.674	1.115	1.186
Rural local	1.689	1.700	1.245	1.327	1.689	1.700	1.245	1.327	1.676	1.688	1.230	1.311	1.689	1.700	1.245	1.327
Urban interstate	3.050	3.061	1.039	1.101	3.664	3.675	0.995	1.052	3.222	3.233	1.018	1.078	3.601	3.612	0.997	1.055
Urban freeway	2.375	2.385	1.053	1.117	2.458	2.469	1.043	1.106	2.375	2.385	1.053	1.117	2.502	2.512	1.041	1.103
Urban principle arterial	1.357	1.369	1.193	1.273	1.362	1.374	1.139	1.212	1.362	1.374	1.205	1.286	1.405	1.416	1.111	1.182
Urban minor arterial	1.356	1.367	1.171	1.247	1.375	1.386	1.132	1.205	1.360	1.372	1.181	1.259	1.406	1.418	1.113	1.184
Urban collector	1.397	1.409	1.293	1.380	1.344	1.355	1.218	1.300	1.462	1.475	1.386	1.479	1.331	1.343	1.150	1.224
Urban local	1.428	1.440	1.335	1.425	1.428	1.440	1.335	1.425	1.428	1.440	1.335	1.425	1.428	1.440	1.335	1.425

2002 Build Emission Factors for Mecklenburg County

Road Type	2002 Build - AM Peak				2002 Build - Midday Peak				2002 Build - PM Peak				2002 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	2.683	2.694	1.142	1.215	2.880	2.891	1.099	1.168	2.667	2.678	1.153	1.227	2.946	2.958	1.091	1.159
Rural minor arterial	1.866	1.879	1.336	1.427	1.785	1.797	1.195	1.274	1.851	1.863	1.319	1.408	1.952	1.964	1.126	1.199
Rural major collector	1.649	1.661	1.209	1.289	1.667	1.679	1.190	1.269	1.653	1.665	1.219	1.300	1.667	1.679	1.190	1.269
Rural minor collector	1.783	1.795	1.155	1.231	1.841	1.853	1.138	1.211	1.783	1.795	1.155	1.231	1.871	1.883	1.130	1.202
Rural local	1.730	1.742	1.263	1.349	1.741	1.753	1.276	1.363	1.730	1.742	1.263	1.349	1.741	1.753	1.276	1.363
Urban interstate	3.086	3.097	1.098	1.167	3.607	3.618	1.054	1.117	3.028	3.040	1.113	1.183	3.795	3.806	1.048	1.110
Urban freeway	2.235	2.246	1.159	1.235	2.310	2.321	1.136	1.209	2.220	2.232	1.165	1.241	2.420	2.432	1.115	1.186
Urban principle arterial	1.491	1.503	1.338	1.431	1.436	1.448	1.256	1.342	1.519	1.532	1.375	1.471	1.470	1.481	1.181	1.260
Urban minor arterial	1.496	1.509	1.337	1.429	1.443	1.455	1.255	1.340	1.540	1.553	1.397	1.493	1.470	1.482	1.184	1.263
Urban collector	1.525	1.538	1.422	1.520	1.417	1.429	1.268	1.355	1.525	1.538	1.422	1.520	1.431	1.443	1.191	1.270
Urban local	1.526	1.539	1.422	1.520	1.526	1.539	1.422	1.520	1.545	1.558	1.449	1.549	1.492	1.505	1.376	1.471

2002 Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties

Road Type	2002 Build - AM Peak				2002 Build - Midday Peak				2002 Build - PM Peak				2002 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	6.248	6.266	1.233	1.304	7.113	7.132	1.218	1.287	6.611	6.629	1.226	1.297	7.113	7.132	1.218	1.287
Rural principle arterial	3.105	3.123	1.394	1.487	3.250	3.268	1.364	1.455	3.076	3.094	1.402	1.496	3.373	3.391	1.344	1.433
Rural minor arterial	2.024	2.042	1.487	1.590	2.165	2.183	1.414	1.511	2.010	2.029	1.497	1.600	2.332	2.350	1.374	1.466
Rural major collector	1.972	1.990	1.437	1.536	2.024	2.043	1.415	1.512	1.956	1.975	1.445	1.545	2.068	2.087	1.401	1.496
Rural minor collector	1.980	1.999	1.466	1.567	2.009	2.028	1.450	1.550	1.957	1.976	1.483	1.586	2.044	2.062	1.434	1.532
Rural local	1.943	1.962	1.688	1.808	1.943	1.962	1.688	1.808	1.931	1.950	1.666	1.785	1.943	1.962	1.688	1.808
Urban interstate	3.765	3.783	1.329	1.415	4.227	4.245	1.301	1.383	3.671	3.689	1.342	1.429	4.331	4.349	1.297	1.379
Urban freeway	2.395	2.413	1.552	1.660	2.505	2.523	1.441	1.541	2.396	2.414	1.569	1.678	2.744	2.762	1.374	1.467
Urban principle arterial	1.596	1.614	1.568	1.680	1.620	1.638	1.518	1.626	1.608	1.626	1.619	1.735	1.706	1.725	1.444	1.545
Urban minor arterial	1.602	1.621	1.569	1.680	1.627	1.646	1.518	1.625	1.610	1.629	1.602	1.716	1.681	1.700	1.467	1.570
Urban collector	1.576	1.595	1.604	1.719	1.569	1.588	1.571	1.682	1.589	1.608	1.661	1.782	1.593	1.612	1.520	1.628
Urban local	1.645	1.665	1.776	1.905	1.645	1.665	1.776	1.905	1.645	1.665	1.776	1.905	1.645	1.665	1.776	1.905

2010 Build Emission Factors for Gaston County *(same for 2010 No Build)*

Road Type	2010 Build - AM Peak				2010 Build - Midday Peak				2010 Build - PM Peak				2010 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	1.533	1.594	0.518	0.569	1.909	1.970	0.474	0.519	1.689	1.750	0.489	0.537	1.909	1.970	0.474	0.519
Rural principle arterial	1.072	1.148	0.525	0.583	1.161	1.238	0.514	0.570	1.128	1.204	0.518	0.575	1.161	1.238	0.514	0.570
Rural minor arterial	0.751	0.831	0.557	0.622	0.799	0.879	0.539	0.601	0.740	0.819	0.563	0.629	0.819	0.899	0.534	0.595
Rural major collector	0.697	0.778	0.563	0.630	0.760	0.841	0.538	0.599	0.702	0.783	0.560	0.626	0.780	0.861	0.533	0.594
Rural minor collector	0.712	0.792	0.567	0.634	0.714	0.795	0.564	0.631	0.712	0.792	0.567	0.634	0.714	0.795	0.564	0.631
Rural local	0.727	0.810	0.629	0.706	0.727	0.810	0.629	0.706	0.727	0.810	0.629	0.706	0.733	0.817	0.636	0.715
Urban interstate	1.054	1.127	0.558	0.621	1.415	1.489	0.502	0.553	1.091	1.164	0.538	0.598	1.415	1.489	0.502	0.553
Urban freeway	0.917	0.997	0.532	0.592	0.958	1.037	0.526	0.584	0.917	0.997	0.532	0.592	0.970	1.050	0.524	0.582
Urban principle arterial	0.601	0.686	0.615	0.693	0.596	0.680	0.581	0.653	0.606	0.691	0.621	0.700	0.614	0.698	0.564	0.632
Urban minor arterial	0.605	0.689	0.609	0.685	0.607	0.690	0.574	0.645	0.603	0.687	0.603	0.678	0.624	0.707	0.561	0.628
Urban collector	0.625	0.714	0.660	0.744	0.593	0.678	0.609	0.685	0.648	0.740	0.693	0.783	0.590	0.674	0.581	0.652
Urban local	0.633	0.723	0.670	0.756	0.633	0.723	0.670	0.756	0.633	0.723	0.670	0.756	0.633	0.723	0.670	0.756

2010 Build Emission Factors for Mecklenburg County *(same for 2010 No Build)*

Road Type	2010 Build - AM Peak						2010 Build - Midday Peak						2010 Build - PM Peak						2010 Build - Night Peak					
	NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	0.979	1.060	0.591	0.661	9.989	11.803	1.077	1.159	0.546	0.608	10.845	12.837	0.980	1.062	0.602	0.673	9.99	11.807	1.174	1.255	0.533	0.592	11.285	13.358
Rural minor arterial	0.821	0.914	0.693	0.781	10.895	12.987	0.762	0.849	0.619	0.695	10.404	12.324	0.821	0.914	0.693	0.781	10.895	12.987	0.822	0.908	0.559	0.624	11.321	13.417
Rural major collector	0.713	0.801	0.616	0.692	10.507	12.447	0.727	0.814	0.581	0.651	10.926	12.945	0.722	0.811	0.634	0.713	10.542	12.504	0.742	0.828	0.573	0.641	11.139	13.202
Rural minor collector	0.742	0.828	0.585	0.655	10.725	12.7	0.778	0.864	0.566	0.632	11.219	13.295	0.736	0.822	0.591	0.663	10.596	12.544	0.807	0.893	0.556	0.621	11.511	13.644
Rural local	0.746	0.834	0.633	0.711	10.484	12.429	0.746	0.834	0.633	0.711	10.484	12.429	0.746	0.834	0.633	0.711	10.484	12.429	0.746	0.834	0.633	0.711	10.484	12.429
Urban interstate	1.161	1.239	0.543	0.604	10.403	12.291	1.385	1.464	0.520	0.575	11.23	13.262	1.128	1.206	0.552	0.613	10.211	12.061	1.516	1.596	0.516	0.569	11.59	13.675
Urban freeway	0.906	0.991	0.559	0.624	11.152	13.221	0.933	1.018	0.552	0.616	11.363	13.473	0.896	0.981	0.562	0.627	11.076	13.13	0.975	1.060	0.545	0.608	11.604	13.758
Urban principle arterial	0.658	0.753	0.669	0.755	10.932	13.04	0.630	0.721	0.628	0.708	10.737	12.749	0.672	0.769	0.689	0.778	11.09	13.253	0.645	0.735	0.583	0.654	11.349	13.472
Urban minor arterial	0.663	0.757	0.669	0.755	10.915	13.01	0.636	0.726	0.627	0.707	10.712	12.713	0.685	0.782	0.700	0.791	11.167	13.348	0.648	0.737	0.585	0.656	11.241	13.336
Urban collector	0.681	0.779	0.712	0.805	11.288	13.506	0.630	0.722	0.640	0.721	10.761	12.785	0.690	0.789	0.725	0.821	11.398	13.654	0.632	0.721	0.588	0.660	11.182	13.265
Urban local	0.673	0.770	0.700	0.791	11.187	13.371	0.673	0.770	0.700	0.791	11.187	13.371	0.691	0.790	0.725	0.821	11.398	13.654	0.658	0.753	0.679	0.766	11.011	13.136
Urban interstate (HOV)	0.714	0.808	0.553	0.622	12.452	14.836	0.689	0.784	0.560	0.630	12.202	14.536	0.706	0.800	0.555	0.625	12.372	14.739	0.689	0.784	0.560	0.630	12.202	14.536

2010 Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties *(same for 2010 No Build)*

Road Type	2010 Build - AM Peak				2010 Build - Midday Peak				2010 Build - PM Peak				2010 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	2.679	2.752	0.667	0.714	3.242	3.315	0.654	0.698	2.447	2.519	0.679	0.728	3.242	3.315	0.654	0.698
Rural principle arterial	1.391	1.481	0.753	0.818	1.466	1.556	0.737	0.799	1.376	1.466	0.758	0.823	1.529	1.620	0.726	0.786
Rural minor arterial	0.984	1.079	0.809	0.883	1.039	1.134	0.777	0.846	0.973	1.068	0.826	0.902	1.135	1.231	0.744	0.808
Rural major collector	0.953	1.049	0.791	0.863	0.995	1.092	0.769	0.837	0.948	1.044	0.795	0.867	1.032	1.128	0.757	0.823
Rural minor collector	0.959	1.054	0.807	0.881	0.984	1.079	0.789	0.860	0.959	1.054	0.807	0.881	1.012	1.107	0.775	0.844
Rural local	0.958	1.056	0.906	0.992	0.958	1.056	0.906	0.992	0.958	1.056	0.906	0.992	0.958	1.056	0.906	0.992
Urban interstate	1.501	1.588	0.753	0.817	1.990	2.079	0.699	0.753	1.461	1.547	0.767	0.833	1.990	2.079	0.699	0.753
Urban freeway	1.085	1.180	0.848	0.927	1.136	1.231	0.784	0.855	1.086	1.180	0.856	0.937	1.268	1.363	0.742	0.806
Urban principle arterial	0.801	0.901	0.865	0.949	0.805	0.905	0.832	0.911	0.807	0.908	0.894	0.981	0.846	0.946	0.790	0.862
Urban minor arterial	0.810	0.909	0.875	0.959	0.810	0.909	0.838	0.917	0.814	0.914	0.894	0.981	0.841	0.940	0.799	0.873
Urban collector	0.797	0.897	0.885	0.971	0.791	0.890	0.858	0.940	0.809	0.911	0.915	1.005	0.803	0.902	0.823	0.900
Urban local	0.828	0.932	0.951	1.045	0.828	0.932	0.951	1.045	0.836	0.941	0.966	1.062	0.822	0.925	0.938	1.031

2020 Build Emission Factors for Gaston County

Road Type	2020 Build - AM Peak				2020 Build - Midday Peak				2020 Build - PM Peak				2020 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.342	0.423	0.294	0.368	0.409	0.493	0.255	0.318	0.342	0.423	0.291	0.364	0.422	0.506	0.253	0.315
Rural principle arterial	0.278	0.381	0.274	0.356	0.301	0.405	0.268	0.346	0.290	0.394	0.270	0.350	0.301	0.405	0.268	0.346
Rural minor arterial	0.227	0.333	0.292	0.385	0.242	0.350	0.277	0.364	0.228	0.334	0.291	0.383	0.245	0.354	0.275	0.360
Rural major collector	0.224	0.335	0.311	0.413	0.235	0.345	0.277	0.364	0.220	0.328	0.293	0.387	0.246	0.356	0.273	0.357
Rural minor collector	0.224	0.331	0.291	0.383	0.226	0.333	0.288	0.379	0.224	0.331	0.291	0.383	0.227	0.334	0.286	0.377
Rural local	0.231	0.343	0.318	0.421	0.233	0.346	0.323	0.426	0.230	0.340	0.315	0.416	0.233	0.346	0.323	0.426
Urban interstate	0.276	0.374	0.285	0.369	0.350	0.451	0.264	0.336	0.283	0.381	0.278	0.360	0.355	0.457	0.264	0.336
Urban freeway	0.264	0.372	0.273	0.357	0.270	0.378	0.272	0.354	0.264	0.372	0.273	0.357	0.275	0.384	0.271	0.351
Urban principle arterial	0.209	0.323	0.309	0.413	0.209	0.321	0.288	0.383	0.207	0.320	0.303	0.404	0.214	0.326	0.284	0.376
Urban minor arterial	0.209	0.322	0.306	0.408	0.209	0.321	0.290	0.385	0.208	0.321	0.303	0.404	0.215	0.327	0.284	0.375
Urban collector	0.231	0.356	0.355	0.476	0.208	0.320	0.306	0.408	0.231	0.356	0.355	0.476	0.207	0.319	0.291	0.386
Urban local	0.222	0.343	0.337	0.450	0.222	0.343	0.337	0.450	0.222	0.343	0.337	0.450	0.222	0.343	0.337	0.450

2020 Build Emission Factors for Mecklenburg County

Road Type	2020 Build - AM Peak						2020 Build - Midday Peak						2020 Build - PM Peak						2020 Build - Night Peak					
	NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	0.269	0.377	0.311	0.406	6.721	8.806	0.279	0.387	0.280	0.365	7.074	9.270	0.269	0.377	0.311	0.406	6.721	8.806	0.304	0.414	0.271	0.351	7.537	9.871
Rural minor arterial	0.285	0.420	0.408	0.538	7.879	10.553	0.252	0.373	0.334	0.441	7.189	9.504	0.292	0.429	0.424	0.559	8.018	10.768	0.243	0.358	0.285	0.374	7.352	9.646
Rural major collector	0.235	0.352	0.313	0.415	7.098	9.335	0.233	0.348	0.288	0.380	7.321	9.608	0.236	0.355	0.316	0.419	7.122	9.377	0.238	0.353	0.284	0.375	7.483	9.822
Rural minor collector	0.232	0.346	0.296	0.390	7.038	9.226	0.241	0.356	0.284	0.373	7.438	9.758	0.234	0.348	0.301	0.397	7.038	9.231	0.250	0.365	0.278	0.365	7.703	10.104
Rural local	0.242	0.360	0.320	0.423	7.111	9.366	0.240	0.357	0.316	0.418	7.085	9.320	0.242	0.360	0.320	0.423	7.111	9.366	0.240	0.357	0.316	0.418	7.085	9.320
Urban interstate	0.297	0.401	0.277	0.358	6.926	9.051	0.332	0.438	0.267	0.342	7.439	9.711	0.290	0.394	0.281	0.364	6.788	8.869	0.365	0.473	0.266	0.338	7.818	10.177
Urban freeway	0.264	0.379	0.279	0.365	7.533	9.893	0.280	0.395	0.273	0.356	7.861	10.317	0.266	0.381	0.277	0.363	7.586	9.962	0.283	0.398	0.273	0.355	7.915	10.386
Urban principle arterial	0.232	0.358	0.333	0.446	7.388	9.814	0.219	0.339	0.307	0.411	7.225	9.521	0.237	0.367	0.344	0.461	7.502	9.993	0.222	0.342	0.287	0.382	7.612	10.016
Urban minor arterial	0.232	0.358	0.334	0.445	7.385	9.797	0.222	0.343	0.314	0.419	7.233	9.537	0.244	0.376	0.357	0.478	7.643	10.197	0.222	0.340	0.289	0.383	7.538	9.912
Urban collector	0.246	0.380	0.367	0.491	7.745	10.352	0.223	0.344	0.317	0.423	7.269	9.593	0.251	0.386	0.378	0.506	7.840	10.501	0.220	0.339	0.288	0.383	7.551	9.927
Urban local	0.239	0.370	0.350	0.469	7.587	10.104	0.236	0.365	0.344	0.460	7.519	10.000	0.246	0.380	0.367	0.491	7.747	10.354	0.231	0.357	0.333	0.445	7.401	9.817
Urban interstate (HOV)	0.240	0.368	0.268	0.359	8.400	11.116	0.234	0.361	0.270	0.363	8.219	10.879	0.240	0.368	0.268	0.359	8.400	11.116	0.234	0.361	0.270	0.363	8.219	10.879

2020 Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties

Road Type	2020 Build - AM Peak				2020 Build - Midday Peak				2020 Build - PM Peak				2020 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.718	0.831	0.326	0.403	0.805	0.920	0.324	0.397	0.638	0.749	0.335	0.417	0.805	0.920	0.324	0.397
Rural principle arterial	0.446	0.585	0.347	0.449	0.462	0.602	0.344	0.442	0.441	0.580	0.349	0.451	0.474	0.614	0.341	0.438
Rural minor arterial	0.342	0.486	0.383	0.504	0.355	0.500	0.363	0.475	0.342	0.486	0.383	0.504	0.387	0.534	0.348	0.451
Rural major collector	0.340	0.486	0.366	0.480	0.351	0.499	0.357	0.467	0.335	0.481	0.369	0.486	0.370	0.519	0.350	0.454
Rural minor collector	0.341	0.486	0.371	0.487	0.353	0.499	0.360	0.471	0.338	0.483	0.375	0.494	0.364	0.511	0.354	0.461
Rural local	0.344	0.492	0.407	0.540	0.344	0.492	0.407	0.540	0.346	0.496	0.413	0.546	0.342	0.489	0.403	0.533
Urban interstate	0.507	0.641	0.340	0.435	0.559	0.696	0.336	0.426	0.507	0.641	0.340	0.435	0.559	0.696	0.336	0.426
Urban freeway	0.365	0.508	0.384	0.506	0.401	0.546	0.349	0.455	0.372	0.515	0.366	0.481	0.406	0.552	0.348	0.453
Urban principle arterial	0.307	0.459	0.395	0.527	0.303	0.454	0.381	0.507	0.312	0.466	0.407	0.545	0.319	0.472	0.360	0.475
Urban minor arterial	0.309	0.461	0.399	0.533	0.305	0.455	0.382	0.507	0.316	0.471	0.413	0.552	0.319	0.471	0.362	0.478
Urban collector	0.313	0.468	0.413	0.552	0.305	0.456	0.392	0.522	0.321	0.480	0.430	0.576	0.308	0.459	0.371	0.491
Urban local	0.318	0.476	0.424	0.567	0.318	0.476	0.424	0.567	0.321	0.480	0.430	0.576	0.316	0.472	0.418	0.559

2020 No Build Emission Factors for Gaston County

Road Type	2020 No Build - AM Peak				2020 No Build - Midday Peak				2020 No Build - PM Peak				2020 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.351	0.433	0.329	0.409	0.409	0.493	0.255	0.318	0.342	0.423	0.291	0.364	0.422	0.506	0.253	0.315
Rural principle arterial	0.272	0.375	0.276	0.360	0.301	0.405	0.268	0.346	0.290	0.394	0.270	0.350	0.305	0.409	0.267	0.345
Rural minor arterial	0.226	0.333	0.296	0.391	0.243	0.352	0.276	0.362	0.226	0.332	0.294	0.388	0.250	0.359	0.274	0.357
Rural major collector	0.223	0.332	0.308	0.408	0.235	0.345	0.277	0.364	0.219	0.328	0.297	0.393	0.246	0.356	0.273	0.357
Rural minor collector	0.224	0.331	0.291	0.383	0.226	0.333	0.288	0.379	0.223	0.330	0.292	0.386	0.227	0.334	0.286	0.377
Rural local	0.231	0.343	0.318	0.421	0.233	0.346	0.323	0.426	0.231	0.343	0.318	0.421	0.233	0.346	0.323	0.426
Urban interstate	0.276	0.375	0.319	0.413	0.344	0.445	0.264	0.337	0.273	0.371	0.299	0.387	0.350	0.451	0.264	0.336
Urban freeway	0.260	0.368	0.274	0.358	0.270	0.378	0.272	0.354	0.258	0.366	0.275	0.359	0.275	0.384	0.271	0.351
Urban principle arterial	0.226	0.348	0.342	0.458	0.206	0.318	0.298	0.397	0.221	0.340	0.332	0.444	0.211	0.324	0.286	0.379
Urban minor arterial	0.219	0.337	0.327	0.437	0.207	0.318	0.294	0.391	0.217	0.334	0.323	0.431	0.214	0.326	0.285	0.377
Urban collector	0.228	0.351	0.348	0.466	0.209	0.322	0.309	0.412	0.231	0.356	0.355	0.476	0.207	0.319	0.291	0.386
Urban local	0.222	0.343	0.337	0.450	0.220	0.339	0.332	0.443	0.220	0.339	0.332	0.443	0.220	0.339	0.332	0.443

2020 No Build Emission Factors for Mecklenburg County

Road Type	2020 No Build - AM Peak				2020 No Build - Midday Peak				2020 No Build - PM Peak				2020 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	0.274	0.384	0.339	0.442	0.272	0.380	0.287	0.374	0.277	0.386	0.351	0.456	0.300	0.410	0.272	0.353
Rural minor arterial	0.299	0.440	0.440	0.581	0.255	0.378	0.339	0.449	0.307	0.451	0.458	0.604	0.244	0.358	0.285	0.375
Rural major collector	0.251	0.376	0.345	0.458	0.229	0.344	0.297	0.392	0.258	0.386	0.358	0.476	0.238	0.353	0.285	0.375
Rural minor collector	0.244	0.363	0.325	0.429	0.237	0.351	0.288	0.380	0.252	0.374	0.339	0.449	0.248	0.364	0.280	0.367
Rural local	0.244	0.363	0.325	0.429	0.240	0.357	0.317	0.419	0.244	0.363	0.325	0.429	0.240	0.357	0.317	0.419
Urban interstate	0.283	0.387	0.304	0.394	0.332	0.438	0.267	0.343	0.284	0.389	0.314	0.407	0.374	0.482	0.266	0.338
Urban freeway	0.255	0.369	0.285	0.375	0.269	0.384	0.277	0.362	0.253	0.367	0.286	0.377	0.277	0.393	0.275	0.358
Urban principle arterial	0.244	0.377	0.357	0.480	0.222	0.343	0.314	0.420	0.248	0.382	0.368	0.493	0.222	0.342	0.288	0.382
Urban minor arterial	0.245	0.377	0.357	0.479	0.224	0.346	0.318	0.424	0.257	0.395	0.392	0.524	0.222	0.341	0.289	0.384
Urban collector	0.261	0.401	0.406	0.542	0.227	0.350	0.325	0.434	0.267	0.410	0.423	0.564	0.219	0.338	0.290	0.386
Urban local	0.240	0.370	0.350	0.469	0.236	0.365	0.344	0.461	0.247	0.381	0.367	0.492	0.231	0.357	0.334	0.446
Urban interstate (HOV)	0.238	0.366	0.269	0.361	0.234	0.361	0.270	0.364	0.238	0.366	0.269	0.361	0.234	0.361	0.270	0.364

2020 No Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties

Road Type	2020 No Build - AM Peak				2020 No Build - Midday Peak				2020 No Build - PM Peak				2020 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.588	0.698	0.355	0.444	0.830	0.945	0.328	0.402	0.570	0.680	0.395	0.494	0.896	1.012	0.327	0.399
Rural principle arterial	0.421	0.560	0.364	0.473	0.451	0.591	0.350	0.453	0.418	0.556	0.366	0.476	0.475	0.617	0.346	0.445
Rural minor arterial	0.350	0.497	0.407	0.539	0.357	0.503	0.367	0.481	0.354	0.504	0.417	0.552	0.388	0.537	0.353	0.458
Rural major collector	0.332	0.478	0.383	0.505	0.350	0.498	0.364	0.477	0.331	0.478	0.388	0.513	0.368	0.518	0.356	0.463
Rural minor collector	0.338	0.483	0.388	0.512	0.348	0.494	0.370	0.485	0.339	0.485	0.391	0.517	0.363	0.511	0.360	0.470
Rural local	0.348	0.498	0.417	0.553	0.346	0.495	0.412	0.546	0.348	0.498	0.417	0.553	0.346	0.495	0.412	0.546
Urban interstate	0.437	0.569	0.386	0.500	0.569	0.707	0.340	0.430	0.451	0.584	0.448	0.581	0.598	0.736	0.340	0.429
Urban freeway	0.370	0.514	0.422	0.558	0.372	0.516	0.373	0.490	0.371	0.515	0.427	0.565	0.412	0.559	0.352	0.457
Urban principle arterial	0.321	0.480	0.428	0.573	0.306	0.457	0.389	0.518	0.331	0.495	0.448	0.603	0.318	0.472	0.367	0.485
Urban minor arterial	0.322	0.481	0.428	0.573	0.308	0.460	0.393	0.523	0.332	0.495	0.449	0.603	0.319	0.471	0.369	0.487
Urban collector	0.320	0.478	0.428	0.574	0.307	0.459	0.396	0.529	0.330	0.493	0.449	0.603	0.310	0.461	0.376	0.498
Urban local	0.326	0.488	0.441	0.593	0.320	0.479	0.429	0.574	0.330	0.493	0.449	0.603	0.317	0.475	0.423	0.566

2030 Build Emission Factors for Gaston County

Road Type	2030 Build - AM Peak				2030 Build - Midday Peak				2030 Build - PM Peak				2030 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.209	0.291	0.248	0.323	0.253	0.337	0.207	0.271	0.222	0.305	0.217	0.285	0.256	0.341	0.207	0.270
Rural principle arterial	0.185	0.289	0.220	0.304	0.199	0.305	0.215	0.295	0.190	0.294	0.218	0.300	0.199	0.305	0.215	0.295
Rural minor arterial	0.157	0.265	0.235	0.329	0.166	0.275	0.222	0.311	0.157	0.265	0.235	0.329	0.170	0.280	0.220	0.307
Rural major collector	0.154	0.263	0.235	0.331	0.163	0.274	0.222	0.311	0.153	0.262	0.237	0.333	0.171	0.284	0.218	0.303
Rural minor collector	0.155	0.264	0.235	0.330	0.157	0.266	0.231	0.323	0.155	0.264	0.235	0.330	0.157	0.266	0.231	0.323
Rural local	0.162	0.274	0.259	0.363	0.164	0.277	0.263	0.368	0.162	0.274	0.259	0.363	0.164	0.277	0.263	0.368
Urban interstate	0.187	0.287	0.223	0.304	0.229	0.332	0.213	0.286	0.185	0.284	0.225	0.308	0.234	0.337	0.213	0.286
Urban freeway	0.182	0.292	0.218	0.302	0.186	0.296	0.217	0.300	0.182	0.292	0.218	0.302	0.187	0.298	0.216	0.299
Urban principle arterial	0.150	0.264	0.246	0.350	0.150	0.263	0.230	0.327	0.149	0.263	0.244	0.346	0.154	0.268	0.225	0.318
Urban minor arterial	0.149	0.262	0.244	0.346	0.150	0.263	0.230	0.326	0.149	0.261	0.242	0.342	0.154	0.267	0.226	0.319
Urban collector	0.159	0.279	0.270	0.382	0.148	0.262	0.244	0.346	0.163	0.286	0.280	0.396	0.148	0.261	0.233	0.330
Urban local	0.161	0.282	0.275	0.389	0.161	0.282	0.275	0.389	0.161	0.282	0.275	0.389	0.161	0.282	0.275	0.389

2030 Build Emission Factors for Mecklenburg County

Road Type	2030 Build - AM Peak						2030 Build - Midday Peak						2030 Build - PM Peak						2030 Build - Night Peak					
	NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO		NOX		VOC		CO	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	0.178	0.286	0.248	0.342	6.327	8.314	0.189	0.298	0.217	0.299	6.799	8.938	0.178	0.286	0.245	0.338	6.308	8.287	0.203	0.314	0.211	0.289	7.154	9.396
Rural minor arterial	0.180	0.303	0.277	0.386	6.887	9.152	0.165	0.278	0.227	0.318	6.736	8.863	0.169	0.285	0.251	0.351	6.638	8.761	0.179	0.295	0.214	0.297	7.377	9.705
Rural major collector	0.168	0.288	0.258	0.361	6.759	8.945	0.162	0.277	0.225	0.315	6.894	9.075	0.162	0.277	0.242	0.339	6.663	8.777	0.165	0.281	0.221	0.310	7.048	9.279
Rural minor collector	0.162	0.276	0.236	0.331	6.627	8.718	0.164	0.278	0.225	0.314	6.853	9.018	0.165	0.281	0.248	0.346	6.650	8.765	0.173	0.288	0.216	0.301	7.258	9.549
Rural local	0.170	0.289	0.258	0.360	6.725	8.892	0.167	0.284	0.251	0.351	6.672	8.803	0.170	0.289	0.258	0.360	6.725	8.892	0.164	0.279	0.244	0.342	6.627	8.725
Urban interstate	0.192	0.296	0.220	0.299	6.482	8.496	0.225	0.332	0.208	0.281	7.192	9.405	0.187	0.290	0.225	0.307	6.309	8.266	0.235	0.343	0.208	0.279	7.375	9.629
Urban freeway	0.180	0.294	0.217	0.302	7.094	9.347	0.190	0.306	0.213	0.294	7.406	9.752	0.180	0.294	0.217	0.302	7.094	9.347	0.194	0.310	0.211	0.292	7.507	9.882
Urban principle arterial	0.171	0.300	0.275	0.389	7.064	9.438	0.158	0.279	0.247	0.350	6.818	9.025	0.176	0.308	0.286	0.405	7.194	9.643	0.158	0.277	0.223	0.315	7.167	9.460
Urban minor arterial	0.168	0.295	0.270	0.381	7.007	9.336	0.157	0.277	0.244	0.346	6.791	8.971	0.176	0.307	0.287	0.405	7.200	9.635	0.158	0.277	0.223	0.315	7.151	9.432
Urban collector	0.185	0.322	0.319	0.447	7.488	10.083	0.162	0.285	0.257	0.363	6.892	9.146	0.189	0.329	0.332	0.464	7.601	10.262	0.156	0.274	0.225	0.318	7.054	9.303
Urban local	0.178	0.311	0.296	0.417	7.298	9.784	0.189	0.329	0.332	0.464	7.602	10.264	0.220	0.380	0.419	0.582	8.448	11.618	0.165	0.291	0.265	0.374	6.970	9.273
Urban interstate (HOV)	0.160	0.286	0.207	0.300	7.629	10.136	0.162	0.289	0.205	0.297	7.732	10.272	0.159	0.285	0.208	0.301	7.573	10.064	0.162	0.289	0.205	0.297	7.732	10.272

2030 Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties

Road Type	2030 Build - AM Peak				2030 Build - Midday Peak				2030 Build - PM Peak				2030 Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.329	0.444	0.237	0.314	0.369	0.485	0.236	0.309	0.310	0.424	0.239	0.318	0.369	0.485	0.236	0.309
Rural principle arterial	0.226	0.366	0.256	0.361	0.237	0.379	0.250	0.350	0.226	0.366	0.256	0.361	0.246	0.388	0.247	0.345
Rural minor arterial	0.195	0.340	0.275	0.394	0.204	0.351	0.259	0.370	0.195	0.340	0.275	0.394	0.218	0.368	0.250	0.354
Rural major collector	0.193	0.340	0.270	0.387	0.201	0.350	0.259	0.370	0.192	0.338	0.273	0.393	0.211	0.361	0.252	0.358
Rural minor collector	0.193	0.338	0.275	0.394	0.201	0.347	0.261	0.373	0.193	0.338	0.280	0.402	0.208	0.356	0.254	0.362
Rural local	0.200	0.350	0.306	0.438	0.200	0.350	0.306	0.438	0.202	0.353	0.311	0.445	0.198	0.347	0.301	0.432
Urban interstate	0.248	0.383	0.248	0.345	0.282	0.421	0.243	0.333	0.254	0.391	0.246	0.341	0.282	0.421	0.243	0.333
Urban freeway	0.201	0.344	0.277	0.396	0.225	0.373	0.250	0.355	0.206	0.351	0.265	0.379	0.227	0.376	0.249	0.353
Urban principle arterial	0.187	0.340	0.293	0.427	0.183	0.334	0.278	0.403	0.191	0.348	0.305	0.443	0.193	0.347	0.260	0.375
Urban minor arterial	0.187	0.339	0.293	0.426	0.183	0.334	0.278	0.403	0.191	0.347	0.306	0.443	0.192	0.344	0.261	0.377
Urban collector	0.190	0.346	0.305	0.443	0.183	0.335	0.283	0.411	0.196	0.356	0.320	0.465	0.186	0.337	0.269	0.389
Urban local	0.194	0.352	0.315	0.456	0.194	0.352	0.315	0.456	0.196	0.356	0.320	0.465	0.192	0.349	0.310	0.449

2030 No Build Emission Factors for Gaston County

Road Type	2030 No Build - AM Peak				2030 No Build - Midday Peak				2030 No Build - PM Peak				2030 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.209	0.291	0.251	0.328	0.253	0.337	0.207	0.271	0.221	0.303	0.218	0.287	0.256	0.341	0.207	0.270
Rural principle arterial	0.178	0.281	0.226	0.313	0.195	0.300	0.216	0.297	0.187	0.291	0.220	0.303	0.199	0.305	0.215	0.295
Rural minor arterial	0.161	0.272	0.253	0.354	0.165	0.274	0.224	0.313	0.161	0.272	0.253	0.354	0.170	0.280	0.220	0.307
Rural major collector	0.159	0.271	0.256	0.359	0.159	0.269	0.226	0.317	0.159	0.271	0.256	0.359	0.170	0.282	0.218	0.304
Rural minor collector	0.155	0.263	0.237	0.332	0.157	0.266	0.231	0.324	0.155	0.263	0.237	0.332	0.158	0.266	0.229	0.322
Rural local	0.162	0.274	0.259	0.363	0.162	0.274	0.259	0.363	0.162	0.274	0.259	0.363	0.164	0.277	0.263	0.368
Urban interstate	0.178	0.276	0.239	0.327	0.226	0.328	0.213	0.287	0.178	0.276	0.239	0.327	0.229	0.332	0.213	0.286
Urban freeway	0.174	0.283	0.222	0.309	0.184	0.294	0.217	0.301	0.175	0.284	0.221	0.308	0.187	0.298	0.216	0.299
Urban principle arterial	0.156	0.275	0.262	0.372	0.149	0.262	0.233	0.331	0.155	0.272	0.259	0.367	0.154	0.269	0.225	0.318
Urban minor arterial	0.153	0.269	0.255	0.362	0.149	0.261	0.234	0.332	0.153	0.269	0.255	0.362	0.154	0.267	0.226	0.319
Urban collector	0.177	0.309	0.324	0.455	0.150	0.264	0.249	0.353	0.177	0.309	0.324	0.455	0.148	0.261	0.233	0.330
Urban local	0.163	0.286	0.280	0.396	0.161	0.282	0.275	0.389	0.161	0.282	0.275	0.389	0.161	0.282	0.275	0.389

2030 No Build Emission Factors for Mecklenburg County

Road Type	2030 No Build - AM Peak				2030 No Build - Midday Peak				2030 No Build - PM Peak				2030 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural principle arterial	0.182	0.290	0.280	0.381	0.179	0.287	0.228	0.314	0.183	0.291	0.285	0.388	0.196	0.306	0.213	0.293
Rural minor arterial	0.233	0.387	0.423	0.580	0.192	0.322	0.310	0.429	0.243	0.403	0.450	0.617	0.165	0.278	0.228	0.318
Rural major collector	0.188	0.320	0.309	0.430	0.160	0.274	0.234	0.329	0.192	0.326	0.321	0.445	0.165	0.281	0.221	0.310
Rural minor collector	0.170	0.289	0.258	0.360	0.162	0.276	0.229	0.320	0.176	0.298	0.272	0.379	0.171	0.287	0.217	0.303
Rural local	0.174	0.295	0.267	0.372	0.167	0.284	0.251	0.351	0.174	0.295	0.267	0.372	0.166	0.281	0.248	0.346
Urban interstate	0.184	0.287	0.231	0.314	0.215	0.321	0.209	0.284	0.183	0.287	0.235	0.320	0.232	0.339	0.208	0.280
Urban freeway	0.174	0.287	0.223	0.310	0.188	0.303	0.213	0.295	0.174	0.287	0.223	0.310	0.192	0.308	0.212	0.293
Urban principle arterial	0.176	0.308	0.287	0.406	0.160	0.282	0.250	0.355	0.182	0.318	0.307	0.432	0.158	0.277	0.223	0.316
Urban minor arterial	0.176	0.307	0.287	0.405	0.161	0.283	0.254	0.359	0.186	0.324	0.319	0.447	0.157	0.276	0.224	0.317
Urban collector	0.193	0.337	0.348	0.484	0.164	0.288	0.261	0.368	0.198	0.345	0.362	0.504	0.155	0.273	0.226	0.320
Urban local	0.181	0.317	0.307	0.431	0.189	0.329	0.332	0.464	0.230	0.396	0.446	0.619	0.165	0.291	0.265	0.374
Urban interstate (HOV)	0.159	0.285	0.208	0.302	0.162	0.289	0.206	0.297	0.156	0.282	0.210	0.306	0.162	0.289	0.206	0.297

2030 No Build Emission Factors for Union, Rowan, Iredell, Cabarrus, Lincoln Counties

Road Type	2030 No Build - AM Peak				2030 No Build - Midday Peak				2030 No Build - PM Peak				2030 No Build - Night Peak			
	NOX		VOC		NOX		VOC		NOX		VOC		NOX		VOC	
	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM	IM	NonIM
Rural interstate	0.300	0.414	0.241	0.321	0.359	0.475	0.236	0.310	0.256	0.366	0.282	0.375	0.359	0.475	0.236	0.310
Rural principle arterial	0.224	0.363	0.257	0.363	0.234	0.375	0.251	0.352	0.223	0.362	0.259	0.365	0.246	0.388	0.247	0.345
Rural minor arterial	0.203	0.352	0.306	0.438	0.197	0.342	0.271	0.388	0.204	0.355	0.311	0.445	0.216	0.365	0.251	0.356
Rural major collector	0.191	0.337	0.276	0.396	0.198	0.347	0.262	0.375	0.191	0.337	0.280	0.403	0.211	0.361	0.252	0.358
Rural minor collector	0.193	0.339	0.283	0.406	0.198	0.345	0.264	0.378	0.195	0.341	0.290	0.416	0.208	0.356	0.254	0.362
Rural local	0.202	0.353	0.311	0.445	0.200	0.350	0.306	0.438	0.202	0.353	0.311	0.445	0.198	0.347	0.301	0.432
Urban interstate	0.237	0.372	0.253	0.353	0.278	0.416	0.243	0.333	0.235	0.369	0.255	0.355	0.278	0.416	0.243	0.333
Urban freeway	0.205	0.348	0.339	0.483	0.218	0.365	0.254	0.360	0.202	0.346	0.303	0.434	0.222	0.370	0.251	0.356
Urban principle arterial	0.193	0.351	0.310	0.450	0.185	0.337	0.286	0.416	0.199	0.361	0.326	0.474	0.192	0.345	0.261	0.377
Urban minor arterial	0.197	0.357	0.321	0.465	0.185	0.337	0.287	0.416	0.201	0.365	0.333	0.483	0.191	0.343	0.262	0.379
Urban collector	0.200	0.364	0.332	0.483	0.187	0.341	0.297	0.431	0.206	0.373	0.347	0.505	0.186	0.337	0.269	0.389
Urban local	0.198	0.359	0.326	0.473	0.194	0.352	0.315	0.456	0.198	0.359	0.326	0.473	0.192	0.349	0.310	0.449

Appendix F (amended) MPO and Non-MPO Funded and Exempt FY 2007-2013 TIP Lists

The following Tables contain Exempt projects within the Metrolina Region per the 2007-2013 TIP which are consistent with the federal definition outlined in 40 CFR 93. These tables are considered an update to tables previously provided in Conformity Document dated June 8, 2005.

This information will be inserted as part of the final conformity document and will be sourced to NCDOT STIP

Appendix G (amended): VMT Normalization Methodology

The following tables are revised to reflect VMT normalization methodology changes and are considered revisions to tables first provided in conformity document dated June 8, 2005.

VMT Normalization			Model 2002	Universe 2002	
Gaston					
71IR	Rural	interstate	81,172	127,230	
71PR		principal arterial	150,106	194,400	
71MR		minor arterial	312,139	295,760	
71CM		major collector	319,282	444,180	
71CR		minor collector	136,927	196,830	
71IU	Urban	interstate	1,562,577	1,565,860	
71FU		other freeway	83,442	108,230	
71PU		principal arterial	1,173,304	1,104,960	
71MU		minor arterial	961,479	771,350	Non-local
71CU		collector	187,423	115,380	normalization factor
Non-local total			4,967,851	4,924,180	**0.991209**
71LR	Rural	local	269,504	155,270	Local
71LU	Urban	local	882,853	262,980	normalization factor
Local total			1,152,357	418,250	**0.362952**
Gaston grand total			6,120,209	5,342,430	

VMT Normalization			Model 2002	Universe 2002	
Mecklenburg			**24 Hour**		
	Rural	interstate	0	1,418,570	
119PR		principal arterial	112,241	168,290	
119MR		minor arterial	99,373	528,990	
119CM		major collector	10,160	479,570	
119CR		minor collector	95,058	83,640	
119IU	Urban	interstate	5,478,065	6,128,220	
119FU		other freeway	2,290,241	1,732,730	
119PU		principal arterial	4,055,948	3,489,720	
119MU		minor arterial	4,710,445	2,285,900	Non-local
119CU		collector	2,979,904	605,930	normalization factor
Non-local total			19,831,435	16,921,560	**0.85327**
119LR	Rural	local	180,075	493,940	Local
119LU	Urban	local	5,411,886	1,282,390	normalization factor
Local total			5,591,961	1,776,330	**0.317658**
Mecklenburg grand total			25,423,396	18,697,890	

Appendix H (amended): Carbon Monoxide: emissions calculations, and interpolation.

The following Tables are revisions to Tables, which previously appeared in Amendment 1 dated September 16, 2005.

The information in the following tables is provided as 24 hour regional emissions totals. Additional tables containing four times per day calculations will be provided with accompanying CD in the final conformity document. Please contact the following person to request these additional tables if needed per Draft conformity document review:

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USING MOBILE6.2 **1 Ton=English ton=2000lb**

MECKLENBURG COUNTY

CO Comparison Table (kg/day)

Analysis Year	Model	Off-Model	Comparison Amount	Budget Amount	
2010	282.0	2.1	279.90	419.6	OK
2020	330.4	2.8	327.59	470.2	OK
2030	370.8	3.1	367.74	470.2	OK

NOTE: **VMT normalization has been applied to 2010 CO only for the old Budget**

CARBON MONOXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

							Normalize	Non-Norm
2010 Mecklenburg	Model VMT	Normalized VMT	MPH	CO RATES IM	No IM	Comp	CO tons/day	CO tons/day
Mecklenburg	**24 Hour**							
119PR: Rural Principal Arterial	169,106	144,293					1.70	1.99
119MR: Rural Minor Arterial	132,874	113,377					1.38	1.62
119CM: Rural Major Collector	15,527	13,249					0.16	0.19
119CR: Rural Minor Collector	161,291	137,625					1.70	1.99
119LR: Rural Local	368,299	116,993					1.38	4.34
119IU: Urban Interstate	6,542,982	5,582,930					67.74	79.39
119FU: Urban Oth Frwy/Xprwy	3,977,468	3,393,854					42.88	50.25
119PU: Urban Principal Arterial	4,656,346	3,973,121					49.05	57.49
119MU: Urban Minor Arterial	5,180,895	4,420,702					54.48	63.85
119CU: Urban Collector	3,375,664	2,880,353					35.97	42.16
119LU: Urban Local	6,375,023	2,025,077					25.52	80.33
119HO: Urban HOV	5,223	4,456					0.06	0.07
Mecklenburg	30,960,698	22,806,031					282.02	383.67
Non-Local VMT Normalization Factor		0.85327		off model tons / day			-2.1	
Local VMT Normalization Factor		0.31766		total emissions			279.92	
				emissions budget			419.62	
				budget - est. emiss emissions			139.70	

CARBON MONOXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 Mecklenburg			CO RATES			CO
AM Peak	VMT	MPH	IM	No IM	Comp	tons/day
Mecklenburg	**24 Hour**					
119PR: Rural Principal Arterial	211,059					1.67
119MR: Rural Minor Arterial	170,081					1.46
119CM: Rural Major Collector	18,562					0.15
119CR: Rural Minor Collector	214,499					1.77
119LR: Rural Local	677,431					5.46
119IU: Urban Interstate	7,870,703					64.28
119FU: Urban Oth Frwy/Xprwy	6,109,841					53.33
119PU: Urban Principal Arterial	5,482,886					46.12
119MU: Urban Minor Arterial	6,117,236					51.62
119CU: Urban Collector	4,208,271					36.21
119LU: Urban Local	7,792,027					67.07
119HO: Urban HOV	127,312					1.21
Mecklenburg	38,999,908					330.36
			off model tons / day			-2.80
			total emissions			327.56
			emissions budget			470.18
			budget - est. emissions			142.62

CARBON MONOXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 Mecklenburg	Model VMT	MPH	CO RATES IM	CO RATES No IM	CO RATES Comp	CO tons/day
Mecklenburg	**24 Hour**					
119PR: Rural Principal Arterial	313,121					2.35
119MR: Rural Minor Arterial	252,474					1.97
119CM: Rural Major Collector	43,380					0.33
119CR: Rural Minor Collector	265,734					2.06
119LR: Rural Local	1,035,847					7.86
119IU: Urban Interstate	8,439,576					65.30
119FU: Urban Oth Frwy/Xprwy	7,581,842					62.24
119PU: Urban Principal Arterial	6,139,127					49.04
119MU: Urban Minor Arterial	7,281,928					57.97
119CU: Urban Collector	5,016,290					41.24
119LU: Urban Local	9,036,741					78.65
119HO: Urban HOV	208,064					1.80
Mecklenburg	45,614,125					370.81
			off model tons / day			-3.10
			total emissions			367.71
			emissions budget			470.18
			budget - est. emissions			102.47

Appendix I (amended): Ozone precursors: Oxides of Nitrogen and Volatile Organic Compounds: VMT, Normalized VMT and emissions calculations

The following Tables are revisions to Tables, which previously appeared in Amendment 1 dated September 16, 2005.

The information in the following tables is provided as 24 hour regional emissions totals. Additional tables containing four times per day calculations will be provided with accompanying CD in the final conformity document. Please contact the following person to request these additional tables if needed per Draft conformity document review:

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GASTON COUNTY BUDGET COMPARISON

USING MOBILE6.2 **1 Ton=English ton=2000lb**

NOx Comparison Table (Tons/day)					
Analysis Year	**Model**	**Off-Model**	**Comparison Amount**	**Budget Amount**	
2010	5.9	0.1	5.8	8.7	OK
2020	2.4	0.0	2.4	8.7	OK
2030	1.7	0.0	1.7	8.7	OK

VMT normalization has been applied all years for NOx

Volatile Organic Compound Comparison Table (Tons/day)					
Analysis Year	**Model**	**Off-Model**	**Comparison Amount**	**Budget Amount**	
2010	3.9	0.1	3.8	5.7	OK
2020	2.7	0.0	2.7	5.7	OK
2030	2.2	0.0	2.2	5.7	OK

VMT normalization has been applied all years for VOC.

MECKLENBURG COUNTY BUDGE COMPARISION

USING MOBILE6.2 **1 Ton=English ton=2000lb**

NOx Comparison Table (Tons/day)					
Analysis Year	**Model**	**Off-Model**	**Comparison Amount**	**Budget Amount**	
2010	21.6	0.8	20.81	33.0	OK
2020	8.6	0.3	8.30	33.0	OK
2030	7.1	0.2	6.90	33.0	OK

VMT normalization has been applied all years for NOx

Volatile Organic Compound Comparison Table (Tons/day)					
Analysis Year	**Model**	**Off-Model**	**Comparison Amount**	**Budget Amount**	
2010	15.5	0.7	14.76	25.9	OK
2020	10.0	0.4	9.59	25.9	OK
2030	9.5	0.3	9.23	25.9	OK

VMT normalization has been applied all years for VOC.

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 Gaston	Model VMT	Normalized VMT	MPH	NOX RATES IM	No IM	Comp	NOX tons/day
	24 Hour						
71IR: Rural Interstate	101,843	100,948					0.20
71PR: Rural Principal Arterial	174,651	173,115					0.22
71MR: Rural Minor Arterial	336,570	333,611					0.29
71CM: Rural Major Collector	365,223	362,012					0.29
71CR: Rural Minor Collector	155,015	153,653					0.12
71LR: Rural Local	313,598	113,821					0.09
71IU: Urban Interstate	1,995,665	1,978,121					2.70
71FU: Urban Oth Frwy/Xprwy	78,044	77,358					0.08
71PU: Urban Principal Arterial	1,240,440	1,229,536					0.83
71MU: Urban Minor Arterial	1,073,265	1,063,830					0.72
71CU: Urban Collector	220,619	218,680					0.15
71LU: Urban Local	986,581	358,082					0.25
Gaston	7,041,515	6,162,767		model tons / day		NOX	5.9
Non Local VMT Normalization Factor		0.99121		off model tons / day			0.1
Local VMT Normalization Factor		0.36295		total emissions			5.8
				emissions budget			8.7
				budget - est. emissions			2.9

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 Gaston	Model VMT	Normalized VMT	MPH	VOC RATES IM	No IM	Comp	VOC tons/day
Gaston	**24 Hour**						
71IR: Rural Interstate	101,843	100,948					0.05
71PR: Rural Principal Arterial	174,651	173,115					0.10
71MR: Rural Minor Arterial	336,570	333,611					0.20
71CM: Rural Major Collector	365,223	362,012					0.22
71CR: Rural Minor Collector	155,015	153,653					0.10
71LR: Rural Local	313,598	113,821					0.08
71IU: Urban Interstate	1,995,665	1,978,121					1.16
71FU: Urban Oth Frwy/Xprwy	78,044	77,358					0.05
71PU: Urban Principal Arterial	1,240,440	1,229,536					0.82
71MU: Urban Minor Arterial	1,073,265	1,063,830					0.70
71CU: Urban Collector	220,619	218,680					0.16
71LU: Urban Local	986,581	358,082					0.27
Gaston	7,041,515	6,162,767					3.9
Non Local VMT Normalization Factor		0.99121		off model tons / day			0.1
Local VMT Normalization Factor		0.36295		total emissions			3.8
				emissions budget			5.7
				budget - est. emissions			1.9

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 Gaston	Model	Normalized	NOX RATES	NOX
Gaston	**24 Hour**			
71IR: Rural Interstate	119,117	118,070		0.05
71PR: Rural Principal Arterial	210,688	208,836		0.07
71MR: Rural Minor Arterial	402,670	399,130		0.11
71CM: Rural Major Collector	465,054	460,966		0.12
71CR: Rural Minor Collector	192,629	69,915		0.02
71LR: Rural Local	424,048	420,320		0.11
71IU: Urban Interstate	2,675,278	2,651,760		0.95
71FU: Urban Oth Frwy/Xprwy	86,625	85,863		0.03
71PU: Urban Principal Arterial	1,544,952	1,531,370		0.37
71MU: Urban Minor Arterial	1,127,514	1,117,602		0.27
71CU: Urban Collector	270,577	98,206		0.02
71LU: Urban Local	1,123,079	1,113,206		0.29
Gaston	8,642,232	8,275,246		2.4

Non Local VMT Normalization Factor	0.99121	off model tons / day	
Local VMT Normalization Factor	0.36295	total emissions	2.4
		emissions budget	8.7
		budget - est. emissions	6.3

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 Gaston		Normalized		VOC RATES			VOC
	VMT	VMT	MPH	IM	No IM	Comp	tons/day
Gaston	**24 Hour**						
71IR: Rural Interstate	119,117	118,070					0.04
71PR: Rural Principal Arterial	210,688	208,836					0.06
71MR: Rural Minor Arterial	402,670	399,130					0.13
71CM: Rural Major Collector	465,054	460,966					0.15
71CR: Rural Minor Collector	192,629	69,915					0.02
71LR: Rural Local	424,048	420,320					0.15
71IU: Urban Interstate	2,675,278	2,651,760					0.81
71FU: Urban Oth Frwy/Xprwy	86,625	85,863					0.03
71PU: Urban Principal Arterial	1,544,952	1,531,370					0.51
71MU: Urban Minor Arterial	1,127,514	1,117,602					0.37
71CU: Urban Collector	270,577	98,206					0.04
71LU: Urban Local	1,123,079	1,113,206					0.42
Gaston	8,642,232	8,275,246					2.7

Non Local VMT Normalization Factor	0.99121	off model tons / day	
Local VMT Normalization Factor	0.36295	total emissions	2.7
		emissions budget	5.7
		budget - est. emissions	3.0

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 Gaston	Model VMT	Normalized VMT	MPH	NOX RATES IM	NOX RATES No IM	NOX RATES Comp	NOX tons/day
Gaston	**24 Hour**						
71IR: Rural Interstate	121,494	120,524					0.03
71PR: Rural Principal Arterial	240,198	238,280					0.05
71MR: Rural Minor Arterial	431,780	428,332					0.08
71CM: Rural Major Collector	559,184	554,718					0.10
71CR: Rural Minor Collector	216,061	214,336					0.04
71LR: Rural Local	544,306	197,529					0.04
71IU: Urban Interstate	2,981,472	2,957,663					0.70
71FU: Urban Oth Frwy/Xprwy	79,609	78,973					0.02
71PU: Urban Principal Arterial	1,769,758	1,755,626					0.31
71MU: Urban Minor Arterial	1,225,607	1,215,820					0.21
71CU: Urban Collector	317,204	314,671					0.06
71LU: Urban Local	1,273,255	462,065					0.09
Gaston	9,759,930	8,538,539					1.7

Non Local VMT Normalization Factor	0.99201
Local VMT Normalization Factor	0.36290

off model tons / day	
total emissions	1.7
emissions budget	8.7
budget - est. emissions	7.0

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 Gaston	Model VMT	Normalized VMT	MPH	VOC RATES IM	VOC RATES No IM	VOC RATES Comp	VOC tons/day
Gaston	**24 Hour**						
71IR: Rural Interstate	121,494	120,524					0.03
71PR: Rural Principal Arterial	240,198	238,280					0.06
71MR: Rural Minor Arterial	431,780	428,332					0.11
71CM: Rural Major Collector	559,184	554,718					0.14
71CR: Rural Minor Collector	216,061	214,336					0.06
71LR: Rural Local	544,306	197,529					0.06
71IU: Urban Interstate	2,981,472	2,957,663					0.73
71FU: Urban Oth Frwy/Xprwy	79,609	78,973					0.02
71PU: Urban Principal Arterial	1,769,758	1,755,626					0.47
71MU: Urban Minor Arterial	1,225,607	1,215,820					0.33
71CU: Urban Collector	317,204	314,671					0.09
71LU: Urban Local	1,273,255	462,065					0.14
Gaston	9,759,930	8,538,539					2.2

Non Local VMT Normalization Factor	0.99201
Local VMT Normalization Factor	0.36290

off model tons / day	
total emissions	2.2
emissions budget	5.7
budget - est. emissions	3.5

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 Mecklenburg	Model VMT	Normalized VMT	MPH	NOX RATES IM	No IM	Comp	NOX tons/day
Mecklenburg	**24 Hour**						
119PR: Rural Principal Arterial	169,106	144,293					0.17
119MR: Rural Minor Arterial	132,874	113,377					0.10
119CM: Rural Major Collector	15,527	13,249					0.01
119CR: Rural Minor Collector	161,291	137,625					0.12
119LR: Rural Local	368,299	116,993					0.10
119IU: Urban Interstate	6,542,982	5,582,930					7.91
119FU: Urban Oth Frwy/Xprwy	3,977,468	3,393,854					3.46
119PU: Urban Principal Arterial	4,656,346	3,973,121					2.88
119MU: Urban Minor Arterial	5,180,895	4,420,702					3.24
119CU: Urban Collector	3,375,664	2,880,353					2.11
119LU: Urban Local	6,375,023	2,025,077					1.53
119HO: Urban HOV	5,223	4,456					0.00
Mecklenburg	30,960,698	22,806,031					21.6

Non-Local VMT Normalization Factor	0.85327	off model tons / day	0.8
Local VMT Normalization Factor	0.31766	total emissions	20.8
		emissions budget	33.0
		budget - est. emissions	12.2

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 Mecklenburg	Model VMT	Normalized VMT	MPH	VOC RATES IM	No IM	Comp	VOC tons/day
Mecklenburg	**24 Hour**						
119PR: Rural Principal Arterial	169,106	144,293					0.1
119MR: Rural Minor Arterial	132,874	113,377					0.1
119CM: Rural Major Collector	15,527	13,249					0.0
119CR: Rural Minor Collector	161,291	137,625					0.1
119LR: Rural Local	368,299	116,993					0.1
119IU: Urban Interstate	6,542,982	5,582,930					3.3
119FU: Urban Oth Frwy/Xprwy	3,977,468	3,393,854					2.1
119PU: Urban Principal Arterial	4,656,346	3,973,121					2.8
119MU: Urban Minor Arterial	5,180,895	4,420,702					3.2
119CU: Urban Collector	3,375,664	2,880,353					2.1
119LU: Urban Local	6,375,023	2,025,077					1.6
119HO: Urban HOV	5,223	4,456					0.0
Mecklenburg	30,960,698	22,806,031					15.5

Non-Local VMT Normalization Factor	0.85327	off model tons / day	0.7
Local VMT Normalization Factor	0.31766	total emissions	14.8
		emissions budget	25.9
		budget - est. emissions	11.1

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 Mecklenburg	Model	Normalized	NOX RATES	NOX
Mecklenburg	**24 Hour**			
119PR: Rural Principal Arterial	211,059	180,090		0.06
119MR: Rural Minor Arterial	170,081	145,125		0.04
119CM: Rural Major Collector	18,562	15,839		0.00
119CR: Rural Minor Collector	214,499	183,026		0.05
119LR: Rural Local	677,431	215,191		0.06
119IU: Urban Interstate	7,870,703	6,715,835		2.43
119FU: Urban Oth Frwy/Xprwy	6,109,841	5,213,344		1.63
119PU: Urban Principal Arterial	5,482,886	4,678,382		1.23
119MU: Urban Minor Arterial	6,117,236	5,219,654		1.39
119CU: Urban Collector	4,208,271	3,590,791		0.98
119LU: Urban Local	7,792,027	2,475,200		0.69
119HO: Urban HOV	127,312	108,632		0.03
Mecklenburg	38,999,908	28,741,108		8.6

Non-Local VMT Normalization Factor	0.85327	off model tons / day	0.3
Local VMT Normalization Factor	0.31766	total emissions	8.3
		emissions budget	33.0
		budget - est. emissions	24.7

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 Mecklenburg		Normalized		VOC RATES			VOC
AM Peak	VMT	VMT	MPH	IM	No IM	Comp	tons/day
Mecklenburg	**24 Hour**						
119PR: Rural Principal Arterial	211,059	180,090					0.1
119MR: Rural Minor Arterial	170,081	145,125					0.1
119CM: Rural Major Collector	18,562	15,839					0.0
119CR: Rural Minor Collector	214,499	183,026					0.1
119LR: Rural Local	677,431	215,191					0.1
119IU: Urban Interstate	7,870,703	6,715,835					2.1
119FU: Urban Oth Frwy/Xprwy	6,109,841	5,213,344					1.6
119PU: Urban Principal Arterial	5,482,886	4,678,382					1.7
119MU: Urban Minor Arterial	6,117,236	5,219,654					1.9
119CU: Urban Collector	4,208,271	3,590,791					1.4
119LU: Urban Local	7,792,027	2,475,200					1.0
119HO: Urban HOV	127,312	108,632					0.0
Mecklenburg	38,999,908	28,741,108					10.0

Non-Local VMT Normalization Factor	0.85327	off model tons / day	0.4
Local VMT Normalization Factor	0.31766	total emissions	9.6
		emissions budget	25.9
		budget - est. emissions	16.3

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 Mecklenburg	Model VMT	Normalized VMT	MPH	NOX RATES IM	NOX RATES No IM	NOX RATES Comp	NOX tons/day
Mecklenburg	**24 Hour**						
119PR: Rural Principal Arterial	313,121	267,145					0.06
119MR: Rural Minor Arterial	252,474	215,403					0.04
119CM: Rural Major Collector	43,380	37,011					0.01
119CR: Rural Minor Collector	265,734	226,716					0.04
119LR: Rural Local	1,035,847	328,891					0.06
119IU: Urban Interstate	8,439,576	7,200,393					1.73
119FU: Urban Oth Frwy/Xprwy	7,581,842	6,468,600					1.39
119PU: Urban Principal Arterial	6,139,127	5,237,719					1.02
119MU: Urban Minor Arterial	7,281,928	6,212,722					1.21
119CU: Urban Collector	5,016,290	4,279,748					0.87
119LU: Urban Local	9,036,741	2,869,247					0.64
119HO: Urban HOV	208,064	177,514					0.03
Mecklenburg	45,614,125	33,521,109					7.1

Non-Local VMT Normalization Factor	0.85317	off model tons / day	0.2
Local VMT Normalization Factor	0.31751	total emissions	6.9
		emissions budget	33.0
		budget - est. emissions	26.1

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 Mecklenburg	Model VMT	Normalized VMT	MPH	VOC RATES IM	VOC RATES No IM	VOC RATES Comp	VOC tons/day
Mecklenburg	**24 Hour**						
119PR: Rural Principal Arterial	313,121	267,145					0.1
119MR: Rural Minor Arterial	252,474	215,403					0.1
119CM: Rural Major Collector	43,380	37,011					0.0
119CR: Rural Minor Collector	265,734	226,716					0.1
119LR: Rural Local	1,035,847	328,891					0.1
119IU: Urban Interstate	8,439,576	7,200,393					1.8
119FU: Urban Oth Frwy/Xprwy	7,581,842	6,468,600					1.6
119PU: Urban Principal Arterial	6,139,127	5,237,719					1.5
119MU: Urban Minor Arterial	7,281,928	6,212,722					1.8
119CU: Urban Collector	5,016,290	4,279,748					1.4
119LU: Urban Local	9,036,741	2,869,247					1.1
119HO: Urban HOV	208,064	177,514					0.0
Mecklenburg	45,614,125	33,521,109					9.5

Non-Local VMT Normalization Factor	0.85317	off model tons / day	0.3
Local VMT Normalization Factor	0.31751	total emissions	9.2
		emissions budget	25.9
		budget - est. emissions	16.7

REGIONAL INTERIM EMISSIONS - BUILD-NO BUILD SUMMARY

		NOx	Off Model	Total NOx	VOC	Off Model	Total VOC
		Kg/Day	Credit		Kg/Day	Credit	
2002	Gaston	12,570			7,177		
	Meck	50,209			33,215		
	5Co	41,959			27,903		
	Region	104,738	**1,649**	**103,089**	68,295	**1,312**	**66,983**
2010	Gaston	5,977			4,112		
BUILD	Meck	25,916			19,524		
	5Co	24,696			18,393		
	Region	56,589	**1,138**	**55,451**	42,029	**1,033**	**40,996**
2010	Gaston	5,977			4,112		
NOBUILD	Meck	25,916			19,524		
	5Co	24,696			18,393		
	Region	56,589	**967**	**55,622**	42,029	**861**	**41,168**
2020	Gaston	2,266			2,601		
BUILD	Meck	10,464			12,477		
	5Co	11,362			11,212		
	Region	24,092	**426**	**23,666**	26,290	**530**	**25,760**
2020	Gaston	2,243			2,697		
NOBUILD	Meck	10,488			12,974		
	5Co	11,352			11,976		
	Region	24,083	**372**	**23,711**	27,647	**460**	**27,187**
2030	Gaston	1,780			2,374		
BUILD	Meck	8,839			12,284		
	5Co	7,995			10,374		
	Region	18,614	**334**	**18,280**	25,032	**465**	**24,567**
2030	Gaston	1,826			2,525		
NOBUILD	Meck	9,000			12,893		
	5Co	8,009			10,725		
	Region	18,835	**322**	**18,513**	26,143	**466**	**25,677**

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2002 **24 Hour summary**	VMT	NOX kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	81,172	413
71PR: Rural Principal Arterial	150,106	451
71MR: Rural Minor Arterial	312,139	580
71CM: Rural Major Collector	319,282	541
71CR: Rural Minor Collector	136,927	227
71LR: Rural Local	269,504	454
71IU: Urban Interstate	1,562,577	5,250
71FU: Urban Oth Frwy/Xprwy	83,442	202
71PU: Urban Principal Arterial	1,173,304	1,608
71MU: Urban Minor Arterial	961,479	1,321
71CU: Urban Collector	187,423	261
71LU: Urban Local	882,853	1,262
Gaston	6,120,209	12,570
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	112,241	312
119MR: Rural Minor Arterial	99,373	184
119CM: Rural Major Collector	10,160	17
119CR: Rural Minor Collector	95,058	173
119LR: Rural Local	180,075	313
119IU: Urban Interstate	5,478,065	18,343
119FU: Urban Oth Frwy/Xprwy	2,290,241	5,229
119PU: Urban Principal Arterial	4,055,948	5,988
119MU: Urban Minor Arterial	4,710,445	6,999
119CU: Urban Collector	2,979,904	4,390
119LU: Urban Local	5,411,886	8,262
119HO: Urban HOV	0	0
Mecklenburg	25,423,396	50,209
5 County	**24 Hour**	
500IR: Rural Interstate	928,039	6,289
500PR: Rural Principal Arterial	747,184	2,386
500MR: Rural Minor Arterial	996,436	2,121
500CM: Rural Major Collector	1,819,433	3,641
500CR: Rural Minor Collector	1,063,976	2,121
500LR: Rural Local	2,322,664	4,509
500IU: Urban Interstate	2,044,477	8,121
500FU: Urban Oth Frwy/Xprwy	75,219	188
500PU: Urban Principal Arterial	1,894,102	3,088
500MU: Urban Minor Arterial	2,306,369	3,757
500CU: Urban Collector	1,065,652	1,685
500LU: Urban Local	2,461,394	4,053
5 County	17,724,945	41,959
	VMT	**NOX (kg)**
REGION - MODEL	49,268,550	104,738
OFF Model Adjustment		1,649
REGION TOTAL EMISSIONS		**103,089**

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2002 **24 Hour summary**	VMT	VOC (kg) kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	81,172	78
71PR: Rural Principal Arterial	150,106	158
71MR: Rural Minor Arterial	312,139	346
71CM: Rural Major Collector	319,282	358
71CR: Rural Minor Collector	136,927	158
71LR: Rural Local	269,504	345
71IU: Urban Interstate	1,562,577	1,632
71FU: Urban Oth Frwy/Xprwy	83,442	90
71PU: Urban Principal Arterial	1,173,304	1,407
71MU: Urban Minor Arterial	961,479	1,142
71CU: Urban Collector	187,423	247
71LU: Urban Local	882,853	1,216
Gaston	6,120,209	7,177
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	112,241	130
119MR: Rural Minor Arterial	99,373	128
119CM: Rural Major Collector	10,160	13
119CR: Rural Minor Collector	95,058	113
119LR: Rural Local	180,075	236
119IU: Urban Interstate	5,478,065	6,111
119FU: Urban Oth Frwy/Xprwy	2,290,241	2,716
119PU: Urban Principal Arterial	4,055,948	5,405
119MU: Urban Minor Arterial	4,710,445	6,314
119CU: Urban Collector	2,979,904	4,098
119LU: Urban Local	5,411,886	7,952
119HO: Urban HOV	0	0
Mecklenburg	25,423,396	33,215
5 County	**24 Hour**	
500IR: Rural Interstate	928,039	1,168
500PR: Rural Principal Arterial	747,184	1,063
500MR: Rural Minor Arterial	996,436	1,487
500CM: Rural Major Collector	1,819,433	2,682
500CR: Rural Minor Collector	1,063,976	1,607
500LR: Rural Local	2,322,664	4,035
500IU: Urban Interstate	2,044,477	2,783
500FU: Urban Oth Frwy/Xprwy	75,219	116
500PU: Urban Principal Arterial	1,894,102	3,013
500MU: Urban Minor Arterial	2,306,369	3,674
500CU: Urban Collector	1,065,652	1,758
500LU: Urban Local	2,461,394	4,517
5 County	17,724,945	27,903
	VMT	**VOC (kg)**
REGION - MODEL	49,268,550	68,295
OFF Model Adjustment		1,312
REGION TOTAL EMISSIONS		**66,983**

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 Build		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	101,843	179
71PR: Rural Principal Arterial	174,651	197
71MR: Rural Minor Arterial	336,570	263
71CM: Rural Major Collector	365,223	270
71CR: Rural Minor Collector	155,015	111
71LR: Rural Local	313,598	230
71IU: Urban Interstate	1,995,665	2,468
71FU: Urban Oth Frwy/Xprwy	78,044	74
71PU: Urban Principal Arterial	1,240,440	757
71MU: Urban Minor Arterial	1,073,265	660
71CU: Urban Collector	220,619	138
71LU: Urban Local	986,581	632
Gaston	7,041,515	5,977
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	169,106	177
119MR: Rural Minor Arterial	132,874	108
119CM: Rural Major Collector	15,527	11
119CR: Rural Minor Collector	161,291	124
119LR: Rural Local	368,299	278
119IU: Urban Interstate	6,542,982	8,412
119FU: Urban Oth Frwy/Xprwy	3,977,468	3,683
119PU: Urban Principal Arterial	4,656,346	3,065
119MU: Urban Minor Arterial	5,180,895	3,446
119CU: Urban Collector	3,375,664	2,248
119LU: Urban Local	6,375,023	4,360
119HO: Urban HOV	5,223	4
Mecklenburg	30,960,698	25,916
5 County	**24 Hour**	
500IR: Rural Interstate	1,104,712	3,218
500PR: Rural Principal Arterial	1,083,400	1,562
500MR: Rural Minor Arterial	1,066,448	1,104
500CM: Rural Major Collector	2,172,665	2,143
500CR: Rural Minor Collector	1,345,601	1,322
500LR: Rural Local	3,195,784	3,087
500IU: Urban Interstate	2,578,138	4,472
500FU: Urban Oth Frwy/Xprwy	108,131	123
500PU: Urban Principal Arterial	2,137,398	1,754
500MU: Urban Minor Arterial	2,699,492	2,227
500CU: Urban Collector	1,318,296	1,064
500LU: Urban Local	3,127,871	2,619
5 County	21,937,936	24,696
	VMT	**NOX (kg)**
REGION - MODEL	59,940,150	56,588
OFF Model Adjustment		1,138
REGION TOTAL EMISSIONS		**55,450**

2010 NoBUILD		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	101,843	179
71PR: Rural Principal Arterial	174,651	197
71MR: Rural Minor Arterial	336,570	263
71CM: Rural Major Collector	365,223	270
71CR: Rural Minor Collector	155,015	111
71LR: Rural Local	313,598	230
71IU: Urban Interstate	1,995,665	2,468
71FU: Urban Oth Frwy/Xprwy	78,044	74
71PU: Urban Principal Arterial	1,240,440	757
71MU: Urban Minor Arterial	1,073,265	660
71CU: Urban Collector	220,619	138
71LU: Urban Local	986,581	632
Gaston	7,041,515	5,977
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	169,106	177
119MR: Rural Minor Arterial	132,874	108
119CM: Rural Major Collector	15,527	11
119CR: Rural Minor Collector	161,291	124
119LR: Rural Local	368,299	278
119IU: Urban Interstate	6,542,982	8,412
119FU: Urban Oth Frwy/Xprwy	3,977,468	3,683
119PU: Urban Principal Arterial	4,656,346	3,065
119MU: Urban Minor Arterial	5,180,895	3,446
119CU: Urban Collector	3,375,664	2,248
119LU: Urban Local	6,375,023	4,360
119HO: Urban HOV	5,223	4
Mecklenburg	30,960,698	25,916
5 County	**24 Hour**	
500IR: Rural Interstate	1,104,712	3,218
500PR: Rural Principal Arterial	1,083,400	1,562
500MR: Rural Minor Arterial	1,066,448	1,104
500CM: Rural Major Collector	2,172,665	2,143
500CR: Rural Minor Collector	1,345,601	1,322
500LR: Rural Local	3,195,784	3,087
500IU: Urban Interstate	2,578,138	4,472
500FU: Urban Oth Frwy/Xprwy	108,131	123
500PU: Urban Principal Arterial	2,137,398	1,754
500MU: Urban Minor Arterial	2,699,492	2,227
500CU: Urban Collector	1,318,296	1,064
500LU: Urban Local	3,127,871	2,619
5 County	21,937,936	24,696
	VMT	**NOX (kg)**
REGION - MODEL	59,940,150	56,588
OFF Model Adjustment		967
REGION TOTAL EMISSIONS		**55,621**

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2010 BUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	101,843	50
71PR: Rural Principal Arterial	174,651	91
71MR: Rural Minor Arterial	336,570	186
71CM: Rural Major Collector	365,223	202
71CR: Rural Minor Collector	155,015	89
71LR: Rural Local	313,598	200
71IU: Urban Interstate	1,995,665	1,058
71FU: Urban Oth Frwy/Xprwy	78,044	42
71PU: Urban Principal Arterial	1,240,440	747
71MU: Urban Minor Arterial	1,073,265	636
71CU: Urban Collector	220,619	143
71LU: Urban Local	986,581	668
Gaston	7,041,515	4,112
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	169,106	97
119MR: Rural Minor Arterial	132,874	86
119CM: Rural Major Collector	15,527	9
119CR: Rural Minor Collector	161,291	94
119LR: Rural Local	368,299	236
119IU: Urban Interstate	6,542,982	3,526
119FU: Urban Oth Frwy/Xprwy	3,977,468	2,235
119PU: Urban Principal Arterial	4,656,346	3,027
119MU: Urban Minor Arterial	5,180,895	3,392
119CU: Urban Collector	3,375,664	2,284
119LU: Urban Local	6,375,023	4,536
119HO: Urban HOV	5,223	3
Mecklenburg	30,960,698	19,524
5 County	**24 Hour**	
500IR: Rural Interstate	1,104,712	737
500PR: Rural Principal Arterial	1,083,400	812
500MR: Rural Minor Arterial	1,066,448	849
500CM: Rural Major Collector	2,172,665	1,705
500CR: Rural Minor Collector	1,345,601	1,080
500LR: Rural Local	3,195,784	2,917
500IU: Urban Interstate	2,578,138	1,896
500FU: Urban Oth Frwy/Xprwy	108,131	88
500PU: Urban Principal Arterial	2,137,398	1,824
500MU: Urban Minor Arterial	2,699,492	2,319
500CU: Urban Collector	1,318,296	1,162
500LU: Urban Local	3,127,871	3,003
5 County	21,937,936	18,393
	VMT	**VOC (kg)**
REGION - MODEL	59,940,150	42,029
OFF Model Adjustment		1,033
REGION TOTAL EMISSIONS		**40,996**

2010 NoBUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	101,843	50
71PR: Rural Principal Arterial	174,651	91
71MR: Rural Minor Arterial	336,570	186
71CM: Rural Major Collector	365,223	202
71CR: Rural Minor Collector	155,015	89
71LR: Rural Local	313,598	200
71IU: Urban Interstate	1,995,665	1,058
71FU: Urban Oth Frwy/Xprwy	78,044	42
71PU: Urban Principal Arterial	1,240,440	747
71MU: Urban Minor Arterial	1,073,265	636
71CU: Urban Collector	220,619	143
71LU: Urban Local	986,581	668
Gaston	7,041,515	4,112
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	169,106	97
119MR: Rural Minor Arterial	132,874	86
119CM: Rural Major Collector	15,527	9
119CR: Rural Minor Collector	161,291	94
119LR: Rural Local	368,299	236
119IU: Urban Interstate	6,542,982	3,526
119FU: Urban Oth Frwy/Xprwy	3,977,468	2,235
119PU: Urban Principal Arterial	4,656,346	3,027
119MU: Urban Minor Arterial	5,180,895	3,392
119CU: Urban Collector	3,375,664	2,284
119LU: Urban Local	6,375,023	4,536
119HO: Urban HOV	5,223	3
Mecklenburg	30,960,698	19,524
5 County	**24 Hour**	
500IR: Rural Interstate	1,104,712	737
500PR: Rural Principal Arterial	1,083,400	812
500MR: Rural Minor Arterial	1,066,448	849
500CM: Rural Major Collector	2,172,665	1,705
500CR: Rural Minor Collector	1,345,601	1,080
500LR: Rural Local	3,195,784	2,917
500IU: Urban Interstate	2,578,138	1,896
500FU: Urban Oth Frwy/Xprwy	108,131	88
500PU: Urban Principal Arterial	2,137,398	1,824
500MU: Urban Minor Arterial	2,699,492	2,319
500CU: Urban Collector	1,318,296	1,162
500LU: Urban Local	3,127,871	3,003
5 County	21,937,936	18,393
	VMT	**VOC (kg)**
REGION - MODEL	59,940,150	42,029
OFF Model Adjustment		861
REGION TOTAL EMISSIONS		**41,168**

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 BUILD		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	119,117	46
71PR: Rural Principal Arterial	210,688	63
71MR: Rural Minor Arterial	402,670	98
71CM: Rural Major Collector	465,054	112
71CR: Rural Minor Collector	192,629	45
71LR: Rural Local	424,048	102
71IU: Urban Interstate	2,675,278	865
71FU: Urban Oth Frwy/Xprwy	86,625	24
71PU: Urban Principal Arterial	1,544,952	339
71MU: Urban Minor Arterial	1,127,514	248
71CU: Urban Collector	270,577	62
71LU: Urban Local	1,123,079	261
Gaston	8,642,232	2,266
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	211,059	61
119MR: Rural Minor Arterial	170,081	47
119CM: Rural Major Collector	18,562	5
119CR: Rural Minor Collector	214,499	54
119LR: Rural Local	677,431	171
119IU: Urban Interstate	7,870,703	2,579
119FU: Urban Oth Frwy/Xprwy	6,109,841	1,729
119PU: Urban Principal Arterial	5,482,886	1,311
119MU: Urban Minor Arterial	6,117,236	1,480
119CU: Urban Collector	4,208,271	1,039
119LU: Urban Local	7,792,027	1,957
119HO: Urban HOV	127,312	32
Mecklenburg	38,999,908	10,464
5 County	**24 Hour**	
500IR: Rural Interstate	1,571,263	1,177
500PR: Rural Principal Arterial	1,668,883	776
500MR: Rural Minor Arterial	1,284,959	472
500CM: Rural Major Collector	2,712,985	976
500CR: Rural Minor Collector	1,800,724	647
500LR: Rural Local	4,623,328	1,646
500IU: Urban Interstate	3,426,644	1,854
500FU: Urban Oth Frwy/Xprwy	230,406	91
500PU: Urban Principal Arterial	2,513,423	808
500MU: Urban Minor Arterial	3,280,992	1,062
500CU: Urban Collector	1,646,704	534
500LU: Urban Local	3,986,449	1,320
5 County	28,746,761	11,362
	VMT	**NOX (kg)**
REGION - MODEL	76,388,901	24,091
OFF Model Adjustment		426
REGION TOTAL EMISSIONS		**23,665**

2020 NoBUILD		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	120,806	47
71PR: Rural Principal Arterial	219,297	66
71MR: Rural Minor Arterial	406,037	99
71CM: Rural Major Collector	493,629	118
71CR: Rural Minor Collector	226,873	53
71LR: Rural Local	433,967	105
71IU: Urban Interstate	2,316,816	740
71FU: Urban Oth Frwy/Xprwy	94,659	26
71PU: Urban Principal Arterial	1,522,417	344
71MU: Urban Minor Arterial	1,360,711	304
71CU: Urban Collector	290,522	67
71LU: Urban Local	1,186,301	274
Gaston	8,672,034	2,243
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	237,202	69
119MR: Rural Minor Arterial	178,489	51
119CM: Rural Major Collector	23,206	6
119CR: Rural Minor Collector	267,857	69
119LR: Rural Local	715,193	181
119IU: Urban Interstate	7,884,382	2,567
119FU: Urban Oth Frwy/Xprwy	5,414,081	1,477
119PU: Urban Principal Arterial	5,531,442	1,359
119MU: Urban Minor Arterial	6,303,374	1,572
119CU: Urban Collector	4,266,015	1,092
119LU: Urban Local	8,113,114	2,041
119HO: Urban HOV	20,611	5
Mecklenburg	38,954,964	10,488
5 County	**24 Hour**	
500IR: Rural Interstate	1,416,160	1,037
500PR: Rural Principal Arterial	1,398,397	629
500MR: Rural Minor Arterial	1,394,027	519
500CM: Rural Major Collector	2,954,266	1,050
500CR: Rural Minor Collector	1,964,120	700
500LR: Rural Local	4,765,584	1,711
500IU: Urban Interstate	3,070,662	1,606
500FU: Urban Oth Frwy/Xprwy	138,173	54
500PU: Urban Principal Arterial	2,791,266	924
500MU: Urban Minor Arterial	3,429,670	1,138
500CU: Urban Collector	1,819,692	600
500LU: Urban Local	4,115,943	1,384
5 County	29,257,959	11,352
	VMT	**NOX (kg)**
REGION - MODEL	76,884,957	24,084
OFF Model Adjustment		372
REGION TOTAL EMISSIONS		**23,712**

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2020 BUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	119,117	33
71PR: Rural Principal Arterial	210,688	58
71MR: Rural Minor Arterial	402,670	117
71CM: Rural Major Collector	465,054	138
71CR: Rural Minor Collector	192,629	57
71LR: Rural Local	424,048	139
71IU: Urban Interstate	2,675,278	746
71FU: Urban Oth Frwy/Xprwy	86,625	24
71PU: Urban Principal Arterial	1,544,952	469
71MU: Urban Minor Arterial	1,127,514	341
71CU: Urban Collector	270,577	91
71LU: Urban Local	1,123,079	388
Gaston	8,642,232	2,601
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	211,059	64
119MR: Rural Minor Arterial	170,081	63
119CM: Rural Major Collector	18,562	6
119CR: Rural Minor Collector	214,499	64
119LR: Rural Local	677,431	221
119IU: Urban Interstate	7,870,703	2,199
119FU: Urban Oth Frwy/Xprwy	6,109,841	1,730
119PU: Urban Principal Arterial	5,482,886	1,794
119MU: Urban Minor Arterial	6,117,236	2,037
119CU: Urban Collector	4,208,271	1,466
119LU: Urban Local	7,792,027	2,799
119HO: Urban HOV	127,312	35
Mecklenburg	38,999,908	12,477
5 County	**24 Hour**	
500IR: Rural Interstate	1,571,263	524
500PR: Rural Principal Arterial	1,668,883	590
500MR: Rural Minor Arterial	1,284,959	486
500CM: Rural Major Collector	2,712,985	1,003
500CR: Rural Minor Collector	1,800,724	676
500LR: Rural Local	4,623,328	1,935
500IU: Urban Interstate	3,426,644	1,184
500FU: Urban Oth Frwy/Xprwy	230,406	86
500PU: Urban Principal Arterial	2,513,423	997
500MU: Urban Minor Arterial	3,280,992	1,311
500CU: Urban Collector	1,646,704	683
500LU: Urban Local	3,986,449	1,738
5 County	28,746,761	11,212
	VMT	VOC (kg)
REGION - MODEL	76,388,901	26,290
OFF Model Adjustment		530
REGION TOTAL EMISSIONS		**25,760**

2020 NoBUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	120,806	35
71PR: Rural Principal Arterial	219,297	61
71MR: Rural Minor Arterial	406,037	119
71CM: Rural Major Collector	493,629	146
71CR: Rural Minor Collector	226,873	67
71LR: Rural Local	433,967	142
71IU: Urban Interstate	2,316,816	677
71FU: Urban Oth Frwy/Xprwy	94,659	26
71PU: Urban Principal Arterial	1,522,417	492
71MU: Urban Minor Arterial	1,360,711	428
71CU: Urban Collector	290,522	98
71LU: Urban Local	1,186,301	405
Gaston	8,672,034	2,697
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	237,202	76
119MR: Rural Minor Arterial	178,489	70
119CM: Rural Major Collector	23,206	8
119CR: Rural Minor Collector	267,857	86
119LR: Rural Local	715,193	236
119IU: Urban Interstate	7,884,382	2,323
119FU: Urban Oth Frwy/Xprwy	5,414,081	1,564
119PU: Urban Principal Arterial	5,531,442	1,887
119MU: Urban Minor Arterial	6,303,374	2,208
119CU: Urban Collector	4,266,015	1,587
119LU: Urban Local	8,113,114	2,923
119HO: Urban HOV	20,611	6
Mecklenburg	38,954,964	12,974
5 County	**24 Hour**	
500IR: Rural Interstate	1,416,160	506
500PR: Rural Principal Arterial	1,398,397	511
500MR: Rural Minor Arterial	1,394,027	553
500CM: Rural Major Collector	2,954,266	1,132
500CR: Rural Minor Collector	1,964,120	764
500LR: Rural Local	4,765,584	2,027
500IU: Urban Interstate	3,070,662	1,189
500FU: Urban Oth Frwy/Xprwy	138,173	56
500PU: Urban Principal Arterial	2,791,266	1,174
500MU: Urban Minor Arterial	3,429,670	1,444
500CU: Urban Collector	1,819,692	778
500LU: Urban Local	4,115,943	1,843
5 County	29,257,959	11,976
	VMT	VOC (kg)
REGION - MODEL	76,884,957	27,646
OFF Model Adjustment		460
REGION TOTAL EMISSIONS		**27,186**

NITROGEN OXIDE

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 BUILD		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	121,494	29
71PR: Rural Principal Arterial	240,198	48
71MR: Rural Minor Arterial	431,780	74
71CM: Rural Major Collector	559,184	95
71CR: Rural Minor Collector	216,061	36
71LR: Rural Local	544,306	94
71IU: Urban Interstate	2,981,472	642
71FU: Urban Oth Frwy/Xprwy	79,609	15
71PU: Urban Principal Arterial	1,769,758	282
71MU: Urban Minor Arterial	1,225,607	195
71CU: Urban Collector	317,204	52
71LU: Urban Local	1,273,255	217
Gaston	9,759,930	1,780
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	313,121	61
119MR: Rural Minor Arterial	252,474	46
119CM: Rural Major Collector	43,380	8
119CR: Rural Minor Collector	265,734	47
119LR: Rural Local	1,035,847	185
119IU: Urban Interstate	8,439,576	1,844
119FU: Urban Oth Frwy/Xprwy	7,581,842	1,478
119PU: Urban Principal Arterial	6,139,127	1,087
119MU: Urban Minor Arterial	7,281,928	1,282
119CU: Urban Collector	5,016,290	926
119LU: Urban Local	9,036,741	1,839
119HO: Urban HOV	208,064	36
Mecklenburg	45,614,125	8,839
5 County	**24 Hour**	
500IR: Rural Interstate	1,718,254	607
500PR: Rural Principal Arterial	2,204,049	538
500MR: Rural Minor Arterial	1,800,253	386
500CM: Rural Major Collector	3,632,375	765
500CR: Rural Minor Collector	2,326,374	488
500LR: Rural Local	6,349,352	1,347
500IU: Urban Interstate	3,707,138	1,023
500FU: Urban Oth Frwy/Xprwy	269,850	61
500PU: Urban Principal Arterial	2,856,046	572
500MU: Urban Minor Arterial	4,158,146	831
500CU: Urban Collector	1,955,772	393
500LU: Urban Local	4,768,994	986
5 County	35,746,602	7,995
	VMT	**NOX (kg)**
REGION - MODEL	91,120,656	18,615
OFF Model Adjustment		334
REGION TOTAL EMISSIONS		**18,281**

2030 NoBUILD		NOX
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	121,495	29
71PR: Rural Principal Arterial	277,060	55
71MR: Rural Minor Arterial	492,438	85
71CM: Rural Major Collector	567,887	97
71CR: Rural Minor Collector	264,918	44
71LR: Rural Local	562,030	96
71IU: Urban Interstate	2,929,267	614
71FU: Urban Oth Frwy/Xprwy	109,472	21
71PU: Urban Principal Arterial	1,794,904	292
71MU: Urban Minor Arterial	1,321,598	213
71CU: Urban Collector	332,125	58
71LU: Urban Local	1,297,826	222
Gaston	10,071,021	1,826
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	278,653	54
119MR: Rural Minor Arterial	214,116	47
119CM: Rural Major Collector	26,040	5
119CR: Rural Minor Collector	283,415	51
119LR: Rural Local	976,361	177
119IU: Urban Interstate	8,759,380	1,857
119FU: Urban Oth Frwy/Xprwy	7,781,944	1,484
119PU: Urban Principal Arterial	6,276,129	1,131
119MU: Urban Minor Arterial	7,006,276	1,273
119CU: Urban Collector	5,018,362	954
119LU: Urban Local	9,343,772	1,935
119HO: Urban HOV	189,118	32
Mecklenburg	46,153,566	9,000
5 County	**24 Hour**	
500IR: Rural Interstate	1,726,033	564
500PR: Rural Principal Arterial	2,182,394	527
500MR: Rural Minor Arterial	1,633,544	353
500CM: Rural Major Collector	3,457,094	722
500CR: Rural Minor Collector	2,445,201	512
500LR: Rural Local	6,558,306	1,395
500IU: Urban Interstate	3,804,024	1,011
500FU: Urban Oth Frwy/Xprwy	306,792	68
500PU: Urban Principal Arterial	3,009,372	614
500MU: Urban Minor Arterial	3,904,524	802
500CU: Urban Collector	2,044,747	425
500LU: Urban Local	4,882,138	1,017
5 County	35,954,171	8,009
	VMT	**NOX (kg)**
REGION - MODEL	92,178,757	18,836
OFF Model Adjustment		322
REGION TOTAL EMISSIONS		**18,514**

VOLATILE ORGANIC COMPOUNDS

VMT & EMISSIONS CALCULATIONS – Mobile 6.2

2030 BUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	121,494	27
71PR: Rural Principal Arterial	240,198	54
71MR: Rural Minor Arterial	431,780	102
71CM: Rural Major Collector	559,184	131
71CR: Rural Minor Collector	216,061	52
71LR: Rural Local	544,306	146
71IU: Urban Interstate	2,981,472	669
71FU: Urban Oth Frwy/Xprwy	79,609	18
71PU: Urban Principal Arterial	1,769,758	432
71MU: Urban Minor Arterial	1,225,607	297
71CU: Urban Collector	317,204	85
71LU: Urban Local	1,273,255	361
Gaston	9,759,930	2,374
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	313,121	75
119MR: Rural Minor Arterial	252,474	63
119CM: Rural Major Collector	43,380	11
119CR: Rural Minor Collector	265,734	64
119LR: Rural Local	1,035,847	271
119IU: Urban Interstate	8,439,576	1,873
119FU: Urban Oth Frwy/Xprwy	7,581,842	1,686
119PU: Urban Principal Arterial	6,139,127	1,645
119MU: Urban Minor Arterial	7,281,928	1,939
119CU: Urban Collector	5,016,290	1,476
119LU: Urban Local	9,036,741	3,136
119HO: Urban HOV	208,064	45
Mecklenburg	45,614,125	12,284
5 County	**24 Hour**	
500IR: Rural Interstate	1,718,254	418
500PR: Rural Principal Arterial	2,204,049	575
500MR: Rural Minor Arterial	1,800,253	493
500CM: Rural Major Collector	3,632,375	992
500CR: Rural Minor Collector	2,326,374	646
500LR: Rural Local	6,349,352	2,013
500IU: Urban Interstate	3,707,138	937
500FU: Urban Oth Frwy/Xprwy	269,850	73
500PU: Urban Principal Arterial	2,856,046	842
500MU: Urban Minor Arterial	4,158,146	1,228
500CU: Urban Collector	1,955,772	600
500LU: Urban Local	4,768,994	1,558
5 County	35,746,602	10,374
	VMT	**VOC (kg)**
REGION - MODEL	91,120,656	25,032
OFF Model Adjustment		465
REGION TOTAL EMISSIONS		**24,567**

2030 NoBUILD		VOC
24 Hour summary	VMT	kg/day
Gaston	**24 Hour**	
71IR: Rural Interstate	121,495	27
71PR: Rural Principal Arterial	277,060	63
71MR: Rural Minor Arterial	492,438	121
71CM: Rural Major Collector	567,887	140
71CR: Rural Minor Collector	264,918	64
71LR: Rural Local	562,030	151
71IU: Urban Interstate	2,929,267	681
71FU: Urban Oth Frwy/Xprwy	109,472	25
71PU: Urban Principal Arterial	1,794,904	455
71MU: Urban Minor Arterial	1,321,598	331
71CU: Urban Collector	332,125	98
71LU: Urban Local	1,297,826	369
Gaston	10,071,021	2,525
Mecklenburg	**24 Hour**	
119PR: Rural Principal Arterial	278,653	73
119MR: Rural Minor Arterial	214,116	78
119CM: Rural Major Collector	26,040	7
119CR: Rural Minor Collector	283,415	72
119LR: Rural Local	976,361	260
119IU: Urban Interstate	8,759,380	1,995
119FU: Urban Oth Frwy/Xprwy	7,781,944	1,757
119PU: Urban Principal Arterial	6,276,129	1,741
119MU: Urban Minor Arterial	7,006,276	1,976
119CU: Urban Collector	5,018,362	1,559
119LU: Urban Local	9,343,772	3,336
119HO: Urban HOV	189,118	41
Mecklenburg	46,153,566	12,893
5 County	**24 Hour**	
500IR: Rural Interstate	1,726,033	441
500PR: Rural Principal Arterial	2,182,394	573
500MR: Rural Minor Arterial	1,633,544	480
500CM: Rural Major Collector	3,457,094	958
500CR: Rural Minor Collector	2,445,201	694
500LR: Rural Local	6,558,306	2,087
500IU: Urban Interstate	3,804,024	977
500FU: Urban Oth Frwy/Xprwy	306,792	92
500PU: Urban Principal Arterial	3,009,372	925
500MU: Urban Minor Arterial	3,904,524	1,216
500CU: Urban Collector	2,044,747	666
500LU: Urban Local	4,882,138	1,616
5 County	35,954,171	10,725
	VMT	**VOC (kg)**
REGION - MODEL	92,178,757	26,142
OFF Model Adjustment		466
REGION TOTAL EMISSIONS		**25,676**

Appendix J (amended): Comments on the Draft Report from the North Carolina Department of Environment and Natural Resources

Insert NCDENR letter here after Draft document review

Appendix K, Part 5 (amended) --- Advertisements

The public participation policies of the MPOs have not changed since the previous Amendment 1 dated September 16, 2005 and are therefore not included in this document. The following pages will contain only the required advertisements and affidavits concerning the public meetings held during the 30-day comment period and will be inserted upon the completion of those meetings.

Appendix M will contain the summaries of the comments received during the 30-day public review period. This information will be inserted in this document upon completion of those meetings

Replace this page with CRMPO ad

Replace this page with CRMPO affidavit

Replace this page with GUAMPO ad

Replace this page with GUAMPO affidavit

Replace this page with MUMPO ad

Replace this page with MUMPO affidavit

Replace this page with RPO ads

Replace this page with RPO affidavits

Appendix L: Adoption of the 2030 LRTP and 2007-2013 MTIP CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

CRMPO, GUAMPO, MUMPO LRTP and TIP resolutions (7 pgs)

Appendix M: Public Comments on the DRAFT 2030 Long-Range Transportation Plan Conformity Analysis and Determination Report

This information will be inserted in this Appendix upon completion of these meetings

CRMPO comments

MUMPO hearing

GUAMPO HEARING

GUAMPO & LNRPO hearing

MUMPO & RRRPO hearing

Appendix N: USDOT and USEPA Comments on the 2030 Long-Range Transportation Plan Conformity Determination Report

USDOT:

INSERT COMMENTS HERE AFTER USDOT REVIEW

USEPA:

INSERT COMMENTS HERE AFTER USEPA REVIEW

Appendix O: Finding of Conformity on the 2030 LRTP and the 2007-2013 MTIP.

Insert CRMPO resolution here

Insert GUAMPO resolution here – LRTP conformity

Insert GUAMPO resolution here – TIP conformity

Insert MUMPO resolution here –LRTP Conformity

Insert MUMPO resolution here –TIP Conformity

Insert NCDOT letters covering Non-attainment areas outside MPOs HERE **(4 letters)**

Appendix P: Summary of Interagency Consultation Meetings and Comments received regarding Metrolina 07-13 TIP Conformity Determination

Comparison of 07-13 TIPs and LRTPs
Interagency Consultation Meeting 10.31.06

Metrolina Region Excerpt

Meeting Location: FHWA Conference Room #445
Meeting Date: 10.31.06
Meeting Summary for Metrolina Non-attainment Area (Counties of Cabarrus, Gaston, Iredell, Lincoln, Mecklenburg, Rowan and Union): This area will require a conformity process with a REA. The following projects will require the LRTP to be amended:

- **MUMPO: U-4024, R-0211CE, R-2559, U-2547**
- **Gaston: U-4915**

FHWA Comments

- **Cabarrus Rowan LRTP**
  I-4718: Construction in 2009-Can this be completed by the 2010 HY in the LRTP
  This is a pavement rehabilitation project. This project is exempt from transportation conformity
  U-2009: Mileage difference STIP = 6.8 LRTP = 5.7, What part of the project in the LRTP are represented in the STIP?
  The 1.1 miles of this project is a 2020 project (post year for the STIP)
  R-2246: Mileage difference STIP = 6.8 LRTP = 5.7, What part of the project in the LRTP are represented in the STIP?
  1.24 miles of this project is under construction and 5.21 miles is not under construction
- **Cabarrus 07-13 STIP**
  I-3803: Mileage difference STIP = 12.8 LRTP = 5.7
  This is a post year project not within years 07, 08 and 09 of the STIP
  R-2533: Is this project complete? What part of the project in the LRTP is represented in the STIP? Mileage difference STIP = 29.3 LRTP = 11.6
  The 11.6 miles shown in the LRTP is the portion of the project within the Cabarrus Rowan MPO
  U-4910: Not in LRTP
  U-4910 is a new TIP number, this project is in the 2020 HY Derita Rd (Poplar Tent to Metropolitan Area Boundary)
- **Rowan 07-13 STIP**
  R-2911: Mileage difference STIP = 19.7 LRTP = 13
  The 13 miles shown in the LRTP is the portion of the project within the Rowan County
- **Gaston LRTP**
  - U-3633: Construction unfunded in 07-13 STIP and the completion HY in the LRTP is 2010?
    This project is in the 2020 HY in the amended Gaston MPO LRTP/conformity determination dated 10.1.05
- **Gaston 07-13 STIP**

- R-2206**:** Mileage difference STIP = 16.9 LRTP = 1.7

This project is 1.7 miles in Gaston County and 16.9 miles in total length. The project begins in Gaston County, cuts through Lincoln County, and ends in Catawba County.

- U-3405: Construction in 2010-Can this be completed by the 2010 HY in the LRTP, Mileage difference STIP = 1.4 LRTP = 0
  The length of this project is listed in the draft 07-13 TIP as 1.4 miles. It is also listed in The 2030 Gaston Urban Area LRTP on Page 121 as 1.4 miles.

- U-4915: Not in LRTP
  Amend the LTRP to include this project

- **Gaston Donut Area**
  - U-4915: Not in 06-12 STIP
    U-4915 is not in the donut area. It is in the Gaston Urban Area MPO Area. This project will be added to the 2030 Gaston Urban Area LRTP as a newly funded TIP project. This project was added as a necessary entrance and access drive to Gaston County's new Dole Foods Plant near Bessemer City, NC. An amendment will be conducted in early 2007 to address this project's inclusion in the draft 07-13 TIP.

- **MUMPO LRTP:**
  - R-2616: Not in 07-13 STIP
    (US 601 South--US 74 to SC State Line)
    Project is listed on Page 6 of the MTIP (Index #306), STIP Page #10-52

  - U-2512A: Not in 07-13 STIP
    (NC 49 South—Moss Rd. to SC State Line)
    Project is complete (Index #236)

  - U-4024: Not in 07-13 STIP
    (US 601—US 74 to Monroe Bypass)
    Project is listed on Page 14 of the MTIP; it will be moved from the 2010 to 2020 Horizon Year (Index #311), STIP page # 10-55.

  - Index 71, NC 27 (Freedom Dr.): Not in 07-13 STIP
    (NC 27—Edgewood Road to Fred D. Alexander Blvd.)
    Roadway on State System, but project will be constructed by City of Charlotte

  - Index 440, Harris Blvd (formerly Reames Rd.): Not in 07-13 STIP
    (Harris Blvd.—I-77 to Reames Rd.)
    Roadway on State System, but project was constructed by City of Charlotte and not shown in the STIP

  - Index 67, NC 160 (West Blvd Relocation): Not in 07-13 STIP
    (NC160 (West Blvd.) –Billy Graham Pkwy. to Steele Creek Rd.)

Project is listed on Page 10 of the MTIP; Roadway on State System, but project will be constructed by City of Charlotte, STIP page #10-23, STIP# U3411

- Index 116, US-29/NC-49 (Graham St.): Not in 07-13 STIP
  ((US29-49) N. Graham St.—I-277 to Dalton Ave.)
  Roadway on State System; project was constructed by City of Charlotte and is complete

- **Mecklenburg 07-13 STIP**
  - I-3311D: Mileage difference STIP = ? LRTP = 3.03
    (I-77—I-485 to Gilead Rd.)
    The project is complete. The mileage indicated in the STIP shows the total project length. Section D is 3.03 miles long (Index #305)

  - I-4733: Not in LRTP
    (I-77/Catawba Ave. Interchange)
    Project is in the 2020 Horizon Year (MPO Rank #12, Index #136)

  - R-2248
    - BB & C: Mileage difference STIP = ? LRTP = 6.8
      BB=(I-485—I-85 to NC 27); C=(I-485—NC 27 to east of Oakdale Rd.)
      The NCDOT Project Breakdown Map indicates that Section BB is 2.3 miles long and Section C is 4.5 miles long. The projects were combined in the LRTP as Index # 316
    - D: Mileage difference STIP = ? LRTP = 6.0
      (I-485—east of Oakdale Rd. to NC 115)
      The NCDOT Project Breakdown Map indicates that Section D is 6.0 miles long (Index #217)

    - F: Mileage difference STIP = ? LRTP = 1.04
      (I-485—I-77 to Arrowood Rd.)
      The mileage indicated in the LRTP is incorrect. The NCDOT Project Breakdown Map indicates that Section F is 3.6 miles long. This project is complete and will be removed from the LRTP when it is updated (Index # 135)

  - I-3803: Not in LRTP
    (I-85—US 29 Connector to NC 73)
    I-3803A (Index #203), which is complete, covered the I-3803 widening in Mecklenburg County. There may be some additional auxiliary lane construction in Mecklenburg County as part of I-3803B, which essentially covers widening I-85 in Cabarrus County

  - R-0211CE: Construction in 2010-Can this be completed by the 2010 HY in the LRTP
    (I-485/Weddington Rd. Interchange)

Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year; project number should be R-211EC (Index # 204)

- R-3329: Not in LRTP
  (US 74-Monroe Connector—I-485 to US 601)
  Project in the 2020 Horizon Year as the Monroe Connector (MPO Rank #7, Index #271)

- R-2420: Mileage difference STIP = 2.1, LRTP = 1.55
  (City Blvd. Ext.—US 29 to I-85)
  A portion of the project identified in the STIP has been completed, and the 1.55 miles identified in the LRTP is the remainder to be constructed (Index #74)

- U-2507: Mileage difference STIP = 4.1, LRTP = 2.39
  (Mallard Creek Rd.—Sugar Creek Rd. to Harris Blvd.)
  A portion of the project identified in the STIP has been completed, and the 2.39 miles identified in the LRTP is the remainder to be constructed (Index #217)

- U-3411: Mileage difference STIP = 2.3, LRTP = .48
  (NC 160—Steele Creek Rd. to I-485)
  The 0.48 mile project identified in the LRTP is a smaller component of the larger U-3411 project that will be constructed by City of Charlotte(Index # 225)

- U-3603: Mileage difference STIP = .9, LRTP = 1.29
  (NC 27—Pierson Dr. to Reddman Rd.)
  The LRTP lists the project mileage as 0.90 (Index # 229)

- U-3447: Construction in 2009-Can this be completed by the 2010 HY in the LRTP
  (NC 51—Downs Cir. to SC State Line)
  Yes. The project is only one mile long, on relatively flat terrain and includes just one bridge. It is scheduled to be let in January 2009 and should be complete by 12/31/10 (Index # 228)

- B-4779: Should this project be exempt? Why is it listed as RC? Construction in 2012 and is in the 2010 HY in the LRTP.
  (US 29—Replace SB Bridge over Mallard Creek)
  The project is on US 29, which is a regionally significant facility. MUMPO is asking that one additional lane be included on the replacement bridge. Thus, this project should be exempt; project will be moved from the 2010 Horizon Year to the 2020 Horizon Year.
  A six-lane widening project on US 29 in this section is included in the 2030 Horizon Year of the LRTP, and it was felt that an additional lane could be included as part of the bridge replacement project, even if the bridge is only striped for two travel lanes.

NOTE: Bridge projects were not assigned Index #'s

- **Union 07-13 STIP**
  - R-4413: Not in LRTP
    (Guardrail—NC 49, US 52, US 74)
    This project is for guardrail replacement and installation along to be determined stretches of US 74 and NC 49. The project is exempt and was not included in the LRTP

  - R-2559: Mileage difference STIP = 14.1, LRTP = 13.6
    (Monroe Bypass—US 601 to US 74 in Marshville)
    The 13.6 mile project identified in the LRTP is a smaller component of the larger R-2559 project (Index # 312). Although the project is identified in the DRAFT 07-13 TIP as being funded for construction in FY07 and FY08, it will not be complete by 12/31/10. Thus, it will be from the 2010 Horizon Year to the 2020 Horizon Year

  - U-3825: Not in LRTP
    (Stallings Rd.—Old Charlotte Hwy. To US 74)
    The amended LRTP shows the project in the 2020 Horizon Year. The prior LRTP showed it in the 2010 Horizon Year (Index # 232)

- **Union Donut Area**
  - No comment
- **Union Donut Area**
  - No comment
- **Lincoln Donut Area**
  - No comment
- **Iredell Donut Area**
  - No comment

ES DAQ Comments

Gaston MPO

No comments

Gaston

U-3633 Project is in the 2010 network but unfunded in the TIP.
This should have been addressed in the last LRTP amendment that was done for the Metrolina Area. Ed check into this.

MUMPO

I could not find U-2512A in the TIPs.
(NC 49 Widening-Moss Rd. to SC State Line)
Project is complete (Index #236)

Mecklenburg

I-3803 I could not find this project in the plan. Why?
(I-85—US 29 Connector to NC 73)
I-3803A (Index #203), which is complete, covered the I-3803 widening in Mecklenburg County. There may be some additional auxiliary lane construction in Mecklenburg County as part of I-3803B, which essentially covers widening I-85 in Cabarrus County.

R-0211EC Project is in 2010 network but construction is shown in TIP in 2010.
(I-485/Weddington Rd. Interchange)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year

R-2420 Project is in 2010 network but construction is shown in TIP as unfunded.
(City Blvd. Ext.—US 29 to I-85)
R-2420A will be built by the City of Charlotte and is shown in the 2010 and 2020 networks; R-2420C (MPO Rank # 42, Index #75) is unfunded in the TIP, but included in the 2020 Horizon Year

B-4779 Project is in 2010 network but construction is shown in TIP in FY 12.
(US 29—Replace SB Bridge over Mallard Creek)
The project is on US 29, which is a regionally significant facility. MUMPO is asking that one additional lane be included on the replacement bridge. Thus, this project should be exempt; project will be moved from the 2010 Horizon Year to the 2020 Horizon Year; a six-lane widening project on US 29 in this section is included in the 2030 Horizon Year of the LRTP, and it was felt that an additional lane could be included as part of the bridge replacement project, even if the bridge is only striped for two travel lanes

B-4580 Project is in 2010 network but construction is shown in TIP in FY 10.
(Reedy Creek Rd. over Reedy Creek)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year. This is a bridge project that will not add capacity and is exempt from transportation conformity.

Union

U-2547 Project is in the 2010 network but construction is shown for 2010 in the TIP. Will funding be secured to ensure this project is open by 2010?
(Charles St.—Sunset Dr. to Franklin St.)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year

U-4024 Project is in the 2010 network, but construction is shown as FY 13 or unfunded.

(US 601—US 74 to Monroe Bypass)
Project will be moved from the 2010 to 2020 Horizon Year (Index #311)

B-4294 Project is in the 2010 network but construction is shown in FY 11.
(Davis Rd. over Waxhaw Creek)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year. This is a bridge project that will not add capacity and is exempt from transportation conformity.

B-4650 Project is in the 2010 network but construction is shown in FY 11.
(Newtown Rd. over West Fork of 12 Mile Creek)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year. This is a bridge project that will not add capacity and is exempt from transportation conformity.

B-4825 Project is in the 2010 network but construction is unfunded.
(Hopewell Church Rd. over Clear Creek)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year. This is a bridge project that will not add capacity and is exempt from transportation conformity.

B-4826 Project is in the 2010 network but construction is shown in FY 13.
(Sugar and Wine Rd. over Brandon Branch)
Project will be moved from the 2010 Horizon Year to the 2020 Horizon Year. This is a bridge project that will not add capacity and is exempt from transportation conformity.

Cabarrus Rowan MPO

I could not find the following projects in the TIPs:

W-4079 US 52/ Sides Road/ Eastville Drive
This is a safety project and is not regionally significant

SI-4722 US 70 and Park Road/ Meridian Plant Entrance
This is a safety project and is not regionally significant

Cabarrus

U-4910 I could not find this project in the plan. Construction is in FY 2009.
U-4910 is a new TIP number, this project is in the 2020 HY Derita Rd (Poplar Tent to Metropolitan Area Boundary)

Rowan

I-2304 This project is in the 2010 network but construction is currently unfunded. Will funding be secured to have this project open by 2010?

This project is in the 2020 HY in the amended Cabarrus Rowan MPO LRTP/conformity determination dated 10.1.05

R-2911 13 miles in plan, 19.7 miles in TIP. Please explain.
The 13 miles shown in the LRTP is the portion of the project within the Rowan County

Iredell No Comments

Lincoln No Comments

EPA Comments

NC LRTP and TIP General Comments

- In LRTPs the projects need to be grouped into the analysis year according to when the project will open to traffic.
  All the LRTP's in non-attainment or maintenance areas NC currently group project by analysis (horizon) years

- In regards to the TIP projects section, we would like to know more detail on when the projects will be open to traffic, specifically the projects that have construction funds allocated.
  Improving the TIP for the transportation conformity purposes is complicated and we will probably never have a TIP document that addresses all the project items needed for transportation conformity (although some improvements have been made). For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as when the project will be open to traffic and construction funding.

- In both the LRTP and TIP please make sure the project description and mileage of the projects is consistent.
  Improving the TIP for the transportation conformity purposes is complicated and we will probably never have a TIP document that addresses all the project items needed for transportation conformity (although some improvements have been made). For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as project description and mileage (to be consistent with the LRTP).

- In both the LRTP and TIP please include existing and future lanes. Additionally, include a column that indicates whether or not a project is regionally significant.
  Improving the TIP for the transportation conformity purposes is

complicated and we will probably never have a TIP document that addresses all the project items needed for transportation conformity (although some improvements have been made). For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as existing/future lanes and regionally significant projects.

- For the Bridge replacement projects, include current and existing laneage so that the transportation partners will be able to determine the exempt status of a bridge project. This is because there may be some instances where a bridge replacement may not necessarily be considered exempt (i.e., when the number of lanes change).

  Improving the TIP for the transportation conformity purposes is complicated and we will probably never have a TIP document that addresses all the project items needed for transportation conformity (although some improvements have been made). For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as existing/future lanes for bridge replacement projects

- Provide a list of all exempt projects

  All transportation conformity reports for all NC non-attainment or maintenance areas contain exempt project lists that were reviewed and agreed to by the interagency consultation partners. Any TIP amendments that occur throughout the year are monitored by FHWA for exempt project modifications, additions and or deletions. Any exempt project changes that require interagency consultation review are shared with the interagency consultation partners for their concurrence.

- Continue to maintain the cross-reference labeling to allow an easy comparison between the LRTP and the TIP.

  Will do.

METROLINA NON-ATTAINMENT AREA

- In regards to the TIP projects section, we would like to know more detail on when the projects will be open to traffic.

  Construction timeline is shown in TIP but no specific opening date is available for the projects. For the next TIP conformity process we will work on developing a supplemental TIP document that will contain more detail on when projects will be open to traffic.

- For the Bridge replacement projects, include current and existing laneage so that the transportation partners will be able to determine the exempt status of a bridge project. This is because there may be some instances where a bridge replacement may not necessarily be considered exempt (i.e., when the number of lanes change).

  Improving the TIP for the transportation conformity purposes is complicated and we will probably never have a TIP document that addresses all the project items needed for transportation conformity (although some improvements have been made). For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as existing/future lanes for bridge replacement projects

Cabarrus Rowan MPO

Cabarrus

- Provide cross-reference labeling to allow an easy comparison between the LRTP and the TIP.

  For the next TIP conformity process we will work on developing a supplemental TIP document that will contain only projects that impact transportation conformity and include information such as cross-referencing labeling to allow an easy comparison between the LRTP and the TIP.

- R-2410: Not in LRTP
  This is a post year project not within the years of 07, 08 and 09 of the TIP.

- I-3803: Explain why the length in the LRTP is 7.2 miles while the length in the TIP is 12.8 miles.
  This is a post year project not within the years of 07, 08 and 09 of the TIP.

- R-2903: Explain why the length in the LRTP is 10.35 miles while the length in the TIP is 19.2 miles
  This is a post year project not within the years of 07, 08 and 09 of the TIP.

- R-2533: Explain why the length in the LRTP is 11.6 miles while the length in the TIP is 29.3 miles
  The 11.6 miles is the portion of the project with in the Cabarrus Rowan MPO.

- R-2246: Explain why the length in the LRTP is 1.24 miles while the length in the TIP is 6.5 miles
  1.24 miles of this project is under construction and 5.21 miles is not under construction

Rowan

- U-3623: Not in LRTP

This project is in the LRTP in the 2020HY

- U-3619: Not in LRTP

  This is a Union County project

- U-4714: Not in LRTP

  This is a MUMPO project

- U-3825: Not in LRTP

  This is a Union County project

- R-2903: Explain why the length in the LRTP is 10.35 miles while the length in the TIP is 19.2 miles
  10.3 miles represents the portion of this project that is within Rowan County

- R-2911: Explain why the length in the LRTP is 13 miles while the length in the TIP is 19.7 miles
  13 miles represents the portion of this project that is within Rowan County

- I-2304: This project is in the 2010 network but construction is currently unfunded. Will funding be secured to have this project open by 2010?
  This project is in the 2020 HY in the amended Cabarrus Rowan MPO LRTP/conformity determination dated 10.1.05

- U-3821: please provide the length of the project in the TIP
  This is an unfunded project

Iredell No Comments

Lincoln No Comments

Gaston MPO

Gaston

- I-5000: Not in LRTP

  This is a post year project and does not impact this STIP conformity process

- U-4915: Not in LRTP

  Amend the LTRP to include this project

- R-3107: Not in LRTP

  This is a post year project and does not impact this STIP conformity process

- U-4736: Not in LRTP

  This is a project to upgrade the signal system and is not a capacity adding project

- U-3633: Explain why this project is in the 2010 network but unfunded in the TIP.
  This project is in the 2020 HY in the amended Gaston MPO

LRTP/conformity determination dated 10.1.05

- R-2206: Explain why the length in the LRTP is 1.7 miles while the length in the TIP is 16.9 miles
  This project is 1.7 miles in Gaston County and 16.9 miles in total length. The project begins in Gaston County, cuts through Lincoln County, and ends in Catawba County.

- R-3608: Explain why the laneage in the LRTP is 4 lanes while the laneage in the TIP is 5 lanes.
  This inconsistency is an error in the LRTP. Additional clarification as to project description will be confirmed with NCDOT staff and a subsequent amendment will be conducted in early 2007 to address this project's listing as an unfunded project in the draft 07-13 TIP.

- U-3405: please provide the length of the project in the TIP.
  The length of this project is listed in the draft 07-13 TIP as 1.4 miles.

- U-2503: Explain why the length in the LRTP is 1.8 miles while the length in the TIP is 3.6 miles
  You reference State Id. No. U-2503 above, however I think that reference number was typed in error. The correct reference number is U-2523. This project was split into two segments (A &B) the first segment (U-2523A 1.8 miles) is complete. The second segment (U-2523B) is unfunded and also 1.8 miles in length. NCDOT should either assign a new project number for the unfinished segment or remove the constructed segment from the TIP. I will address this with NCDOT TIP staff. However for modeling purposes, the information stated should be modeled accordingly.

- U-3321: Explain why the length in the LRTP is 20.2 miles while the length in the TIP is 21.5 miles
  This project is partially in Mecklenburg County and partially in Gaston County

- U-3806: Explain why the length in the LRTP is 1 miles while the length in the TIP is 0.5 miles
  This is a post year project and does not impact this STIP conformity process

MUMPO

- In regards to the TIP projects section, we would like to know more detail on when the projects will be open to traffic.
  NCDOT TIP Unit and Transportation Planning Branch to respond

- For the Bridge replacement projects, include current and existing laneage so that the transportation partners will be able to determine the exempt status of a bridge project. This is because there may be some instances where a bridge replacement

may not necessarily be considered exempt (i.e., when the number of lanes change).
Bridge projects that add lanes and are more than simple replacements (e.g., adding lanes) will be noted

MUMPO

Mecklenburg

- I-4733: Not in LRTP
  (I-77/Catawba Ave. Interchange)
  Project is in the 2020 Horizon Year (MPO Rank #12, Index #136)

- U-5007: Not in LRTP
  (NC 51—Matthews Township Pkwy. to Lawyers Rd.)
  Project is in the 2020 Horizon Year (MPO Rank #13, Index #79)

- I-4750: Not in LRTP
  (I-77—NC 73 to Langtree Rd.)
  Project is in the 2020 Horizon Year (MPO Rank #37, Index #37)
  NOTE: Project identified in the STIP goes beyond the MUMPO boundary

- U-4714: Not in LRTP
  (John St.-Old Monroe Rd.—Trade St. to Wesley Chapel-Stouts Rd.)
  A portion of this project is divided into two projects in the 2020 Horizon Year (MPO Rank #28, Index #240 –I-485 to Indian Trail Rd. and MPO Rank # 30, Index #181—Indian Trail Rd. to Wesley Chapel Stouts Rd.); the remainder of the project (Trade St. to I-485) is in the 2030 Horizon Year for MPO Rank #109, Index #86)

- I-3803: Not in LRTP
  (I-85—US 29 Connector to NC 73)
  I-3803A (Index #203), which is complete, covered the I-3803 widening in Mecklenburg County. There may be some additional auxiliary lane construction in Mecklenburg County as part of I-3803B, which essentially covers widening I-85 in Cabarrus County.

- U-4705: Not in LRTP
  (Belmont Mount Holly Northern Loop)
  Project is in the 2030 Horizon Year (MPO Rank #180, Index #303) and is labeled as NC 27-- Mount Holly North Loop
  NOTE: Project identified in the STIP goes beyond the MUMPO boundary

- R-4902: Not in LRTP
  (I-485—I-77 to US 521)
  Project is in the 2020 Horizon Year (MPO Rank #54, Index #167)

- U-209B: Not in LRTP
  (US 74—Albemarle Rd. to Idlewild Rd.)

Listed in the LRTP as U-209BA (Index # 126) and U-209BB (Index #124) in the 2010 Horizon Year List with notes indicating that the project would not be open to traffic until the 2020 Horizon Year

- R-2632: Not in LRTP
  (*NC 73—I-77 to Davidson-Concord Rd.)*
  Project is in the 2020 Horizon Year as two projects; from I-77/US 21 to NC 115(MPO Rank #41, Index #80) and from NC 115 to Davidson-Concord Rd. (MPO Rank#48, Index #237)

- U-3850: Not in LRTP
  (I-277—WB Bridge over I-277)
  Project is in the 2020 Horizon Year (MPO Rank #45, Index #34)

- R-2706: Not in LRTP
  (*NC 73—I-77 to SR 1356 in Lincoln County)*
  Project is in the 2030 Horizon Year as two projects; from Catawba River to Vance Rd. Ext. (MPO Rank #62, Index #257) and from Vance Rd. Ext. to Northcross Dr. (MPO Rank#136, Index #258)
  NOTE: Project identified in the STIP goes beyond the MUMPO boundary

- U-5011: Not in LRTP
  (Charlotte Douglas International Airport (CDIA) Intermodal Facility)
  Earmark, non-roadway project, relocation of existing Norfolk Southern Rail Yard, and not included in the LRTP

- R-3329 not in LRTP
  (US 74-Monroe Connector—I-485 to US 601)
  Project in the 2020 Horizon Year as the Monroe Connector (MPO Rank #7, Index #271)

- U-3411: Explain why the length in the LRTP is 0.48 miles while the length in the TIP is 2.3 miles
  (NC 160—Steele Creek Rd. to I-485)
  The 0.48 mile project identified in the LRTP is a smaller component of the larger U-3411 project that will be constructed by City of Charlotte (Index # 225)

- U-3603: Explain why the length in the LRTP is 1.29 miles while the length in the TIP is 0.9 miles
  (NC 27—Pierson Dr. to Reddman Rd.)
  The LRTP lists the project mileage as 0.90 (Index # 229)

- U-4401: Explain why the project description in the plan says relocation while the project description in the TIP says realign intersection.
  (Reedy Creek Rd. a Harrisburg Rd.)
  The project will relocate Reedy Creek Road and realign its intersection with Harrisburg Road (Index #307)

Union

- R-3329: Not in LRTP
  (US 74-Monroe Connector—I-485 to US 601)
  Project in the 2020 Horizon Year as the Monroe Connector (MPO Rank #7, Index #271)

- U-3619: Not in LRTP
  (Secrest Ave. Ext.—Walkup Ave. to Olive Branch Rd.)
  Project is in the 2030 Horizon Year (MPO Rank #165, Index #268)

- U-4714: Not in LRTP
  (John St.-Old Monroe Rd.—Trade St. to Wesley Chapel-Stouts Rd.)
  A portion of this project is divided into two projects in the 2020 Horizon Year (MPO Rank #28, Index #240 –I-485 to Indian Trail Rd. and MPO Rank # 30, Index #181—Indian Trail Rd. to Wesley Chapel Stouts Rd.); the remainder of the project (Trade St. to I-485) is in the 2030 Horizon Year for MPO Rank #109, Index #86)

- U-3825: Not in LRTP
  (Stallings Rd.—Old Charlotte Hwy. To US 74)
  The amended LRTP shows the project in the 2020 Horizon Year. The prior LRTP showed it in the 2010 Horizon Year (Index # 232)

- U-4913: Not in LRTP
  (Idlewild Rd.—I-485 to Stevens Mill Rd.)
  Project is in the 2020 Horizon Year (MPO Rank #27, Index #448)

- U-3467: Not in LRTP
  (NC 84 Relocation—NC 16 to NC 84)
  Project is in the 2030 Horizon Year (MPO Rank #92, Index #81)

- U-213: Not in LRTP
  (Charlotte Ave.—Railroad to Concord Ave.)
  Project is in the 2030 Horizon Year (MPO Rank #57, Index #245)

- R-3802: Not in LRTP
  (NC 16—Rea Rd. Ext. to Waxhaw)
  Project is in the 2030 Horizon Year as two projects; from Rea Rd. Ext. to Cuthbertson Rd. (MPO Rank #101, Index #64) and from Cuthbertson Rd. to Waxhaw Bypass(MPO Rank#102, Index #89)

- U-2549 Not in LRTP
  (Monroe Northern Loop—US 74 to Walkup Ave./Bivens Rd.)
  Project is in the 2030 Horizon Year as two projects; from US 74 to US 601 (MPO Rank #106, Index #272) and from US 601 to Walkup Ave./Bivens Rd.(MPO Rank#137, Index #273)

- R-2559: Explain why the length in the LRTP is 1417 miles while the length in the TIP is 13.6 miles

  (Monroe Bypass—US 601 to US 74 in Marshville)

  The 13.6 mile project identified in the LRTP is a smaller component of the larger R-2559 project (Index # 312). Although the project is identified in the DRAFT 07-13 TIP as being funded for construction in FY07 and FY08, it will not be complete by 12/31/10. Thus, it will be from the 2010 Horizon Year to the 2020 Horizon Year

Air Quality Conformity Determination for the 2007-2013 Draft TIP
Metrolina Regional Partners Meeting
Friday, November 17, 2006
9:30 a.m. – 11:30 p.m.

Via Telephone Conference Call

MEETING NOTES

Attending: Jim Humphrey, CDOT
Jeff Young, CRMPO
Alena Cook, NCDOT
Rebecca Yarbrough, LNRPO
Dana Stoogenke, RRRPO
Bob Cook, MUMPO
Phil Conrad, CRMPO

Anna Gallup, CDOT
Jonathan Parker, NCDOT
Linda Dossé, NCDOT
Shannon Ransom, NCDOT
Eddie Dancausse, FHWA
Alpesh Patel, NCDOT
Derry Schmidt, NCDOT
Behshad Norowzi, NCDOT
Terry Arellano, NCDOT
Tim Gibbs, CDOT
Joe McLelland, CDOT
Eldewins Haynes, CDOT

Projects for Modification in Long Range Plans

Based on the October 31, 2006 Interagency Consultation meeting and subsequent coordination among interagency partners, the following projects included in the draft 2007-2013 TIP will require long-range transportation plan amendments:

- Mecklenburg-Union MPO: U-4024, R-0211CE, R-2559, U-2547; and
- Gaston MPO: U-4915.

Terry Arellano asked if there were any projects in addition to these that need to be modified for this conformity determination. Discussion revealed the following:

- ***Mecklenburg-Union MPO*** – TIP Project U-2507A (Mallard Creek Rd/Graham St) is listed in the draft TIP with a September 2009 let date. Coordination with Roadway Design and the TIP Unit revealed that this project would **not** be complete by the end of 2010. Therefore, this project should be modified from a 2010 horizon year project to a 2020 horizon year project.

- ***Gaston MPO*** – The Gaston MPO needs to provide a response to agency comments on Project R-3608. No representative from the Gaston MPO was in attendance.

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- ***Rocky River RPO –*** Katherine English with NCDOT and Dana Stoogenke need to coordinate to review the draft TIP for any problematic project changes within the rural portion of Union County.

- ***Cabarrus-Rowan MPO & Lake Norman RPO*** – No projects will require modification.

Transportation Conformity Pre-Analysis Consensus Plan (TCPACP)

Eddie Dancausse explained that the TCPCP documents the conformity analysis parameters that will be used for the conformity determination. Since this is will be a long range transportation plan amendment most of the parameters in the TCPCP that were used in the last conformity determination will not change, so only minor revisions to the TCPCP will be required. During the last conformity determination completed for the Metrolina Region, most of the interagency decisions were captured in the form of memos, meeting notes, etc. and the TCPCP was not updated with the new information. Eddie used the meeting minutes from the last conformity determination report to piece together the pertinent information into a draft TCPCP for this conformity process and asked that everyone review this document closely and then meet again within a week to solidify the included details.

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Eddie also asked that the Metrolina partners also review the draft conformity process schedule (CPS) provided and offer comments on the tasks and allotted time period to complete the tasks.

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There was discussion regarding the use of the revised regional model for this analysis. At this time, model owners have not adopted the most recent version of the model. The most recent version of the model can be used if approved by the Metrolina Regional Model Executive Committee and as long as the model changes have not involved the revision of the socioeconomic data used originally.

Behshad Norowzi mentioned that there have been changes to the MOBILE 6 model since the last regional emissions analysis (REA), mostly dealing with vehicle age distribution. After discussion, Behshad agreed to send this new vehicle age distribution information to Joe McLelland and then he and Joe would coordinate with NCDAQ within the next week to see what changes will be required.

ACTION

There was discussion concerning the horizon years that would be needed for the REA and what emissions budgets would be used. REA will be required for the following horizon years: 2002, 2010, 2020 and 2030. The following budget tests will be required: 1-hour budget comparison for Mecklenburg and Gaston Counties and CO budget comparison for Mecklenburg County. Since there are no 8-hour motor vehicle emission budgets (MVEBs), the interim budgets tests (build versus no-build and the less than baseline year comparison) would be required for the remaining Metrolina non-attainment area counties (Cabarrus, Iredell (partial), Lincoln, Rowan, and Union).

There was also discussions concerning the following:

- Will analyses for all of the above horizon years if there were no project shifts in a particular year?
- Will all the horizon years need to be analyzed due to the use of the new version of the regional model?

These questions were not resolved.

1. Roles & Schedule

On October 17, 2006, Terry emailed NCDOT's proposal for conformity determination task responsibilities to the regional partners. The following discussion resulted:

2. Regional model network modifications

- Proposal – NCDOT prepares network modifications for Gaston MPO, Cabarrus-Rowan MPO and non-MPO areas; CDOT prepares network modifications for Mecklenburg-Union MPO.

- Discussion – Jim Humphrey commented that in order to be fair and consistent, he felt that NCDOT should complete the network modifications for MUMPO. Terry explained that the proposal for CDOT to complete these modifications follows CDOT's past role of providing modeling directly for MUMPO. Alena Cook responded that NCDOT is willing to complete the network modifications for this

analysis, but the long term roles should discussed by the regional partners and, once developed, the model protocol should address these roles for future activities.

- **Agreement – NCDOT will complete required network modifications for all areas.**

3. Regional model runs/VMT and speed extractions for required horizon years

- Proposal – NCDOT completes model runs for required horizon years and extracts VMT and speeds needed for NCDAQ development of emission factors.

- Discussion – Joe commented that the analysis was very close to not passing the REA last time and required multiple model runs. He expects this same scenario for this conformity process. Jim asked if the proposed schedule allows for this and NCDOT replied that the CPS does not have a lot of cushion and that the timetable is tight to complete this conformity process by the 6/30/07 deadline. There were questions about the confidence NCDOT has in their regional modeler to complete the required work. Alena responded that NCDOT is confident that the regional modeler can complete the required work.

- **Agreement – NCDOT will complete the model runs for the required horizon year and extract VMT and speeds needed for the development of emission factors.**

4. Emission factor development

- Proposal– NCDAQ develops emission factors based on an interagency agreement currently in place.

- Discussion – Eddie commented that this task should be coordinated directly with NCDAQ. Behshad commented that for the last conformity analysis, he and CDOT completed several dry runs of the emissions analysis. Joe added that he believes this will be essential to do again. The new version of the regional model includes the current version of MOBILE 6 as part of the post-processor. Joe added that CDOT will not complete the MOBILE 6 runs because they feel it needs to be done altogether by the NCDOT regional modeler. Terry questioned the flexibility of the NCDOT contract with Kimley-Horn and whether or not it covered doing any air quality analysis work. Behshad proposed that CDOT does the dry runs for the emissions analysis work and that he helps out as needed. Joe expressed a willingness to do this. Alena commented that the dry runs for the emissions analysis work is not a required piece of the conformity process, so we need flexibility to address the issue each time it's needed.

5. Regional emission analysis

- Proposal – NCDOT completes regional emission analysis.

- Discussion – The previous discussion concerning the emission factors covered the regional emissions analysis, as well.

- **Agreement – NCDOT and CDOT will perform the required regional emission analysis.**

6. Revised conformity documentation

- Proposal – NCDOT spearheads the completion of the revised conformity documentation, with other partners contributing information as necessary.

- Discussion – There was no significant discussion.

- **Agreement - NCDOT will lead the completion of the revised conformity documentation, with other partners contributing information as necessary.**

7. Revised long range plan documentation

- Proposal – MPOs spearhead any required revisions to their individual long-range plans.

- Discussion – There was no significant discussion.

- **Agreement – MPOs will complete any required revisions to their own long-range plans.**

8. Revised long range plan/conformity public involvement

- Proposal – MPOs and RPOs individually spearhead required public involvement meetings. MPO/RPO Coordinators will attend these meetings if requested.

- Discussion – Phil Conrad commented that CRMPO would like to avoid scheduling any special meetings, so it's important for the conformity schedule to consider regular meeting schedules. Eddie responded that one month is included in the schedule to try

to accommodate regular meeting schedules.

- **Agreement – MPOs and RPOs will head up any required public meetings.**

9. Revised long range plan/conformity adoption

- Proposal – MPOs and RPOs individually spearhead local approval process.

- Discussion – Eddie mentioned the EPA has requested specific language concerning the TIP to be a direct subset of the long range plans to be included as part of the approval process. The proposed EPA language was provided to the MPOs, RPOs and NCDOT via email.

- **Agreement – MPOs and RPOs will take the lead for the local approval process.**

10.Other items as needed

There was some discussion concerning the implications of not meeting the June 30, 2007 deadline for this conformity determination. Eddie explained that the process we are undertaking now involves a plan amendment, which is much smaller in scale than a plan update. If the conformity process goes beyond June 30, 2007, the current long-range plans will not be SAFETEA-LU compliant and would require full-blown long-range plan updates. Phil Conrad asked if that would affect CRMPO, since there are no project changes for either Cabarrus or Rowan Counties. Eddie responded that until there are county level MVEBs that are found adequate or approved by EPA, any change within the region would impact all MPOs.

Terry committed to follow up with meeting participants for availability for another meeting the week of November 27, 2006.

ACTION

Air Quality Conformity Determination for the 2007-2013 Draft TIP
Metrolina Regional Partners Meeting
Thursday, November 30, 2006
1:30 p.m. – 3:30 p.m.
Via Telephone Conference Call

MEETING NOTES

Attending:
Jeff Young, CRMPO

Dawn Qui , LNRPO

Dana Stoogenke, RRRPO

Bob Cook, MUMPO

Anna Gallup, CDOT

Jonathan Parker, NCDOT

Linda Dossé, NCDOT

Shannon Ransom, NCDOT

Eddie Dancausse, FHWA

Alpesh Patel, NCDOT

Derry Schmidt, NCDOT
Behshad Norowzi, NCDOT
Terry Arellano, NCDOT
Joe McLelland, CDOT

Eldewins Haynes, CDOT

Katherine English, NCDOT

Amanetta Wood, EPA
Hank Graham, Gaston MPO

Randi Philbeck, Gaston MPO
Mike Abraczinskas, NCDAQ
Phyllis Jones, NCDAQ
Heather Hildebrant, NCDAQ
Vicki Chandler, NCDAQ
Pat Bello, NCDAQ
Loretta Barren, FHWA

Review of Notes from November 17, 2006 Meeting

Terry Arellano distributed notes from the last group meeting by email. There were no comments on these notes as presented.

Projects for Modification in Long Range Plans

An outstanding question from the last group meeting concerned TIP Project R-3608 in the Gaston MPO. Hank Graham summarized that the project cross-section discrepancy between the current LRTP and the draft 2007-2013 TIP would be addressed with this conformity determination process. The MPO plans to modify the cross-section in the LRTP to match the draft TIP. Eddie Dancausse commented that it should be verified that this project is correctly depicted in the regional model.

Hank and Joe McLelland discussed the regional significance of TIP Project U-4915, since this is an access road to a proposed development. This project might only need to be shown as a centroid connector. Amanetta Wood commented that regional significance is determined through the IC process. Eddie committed to obtaining the necessary information about this project and sending it out to the IC group for resolution.

Hank also asked if there was still more information required to address EPA's earlier comment about TIP Project U-3633. Eddie has verified that this project was placed in the correct horizon year in the last conformity determination amendment.

Transportation Conformity Pre-Analysis Consensus Plan Agreement

At the November 30, 2006 meeting, Eddie asked everyone to review the draft TCPACP so that it could be updated at this meeting. Prior to discussing comments, Eddie noted that he had send Tim Gibbs an email to obtain the attachments that are needed for the TCPACP. Anna Gallup reported that she will coordinate with Tim about this and send the needed information in a .pdf document to Eddie.

The following comments on the TCPACP were noted:

- Item #2, Validation (Base) Year – Behshad Norowzi asked if the model was run for 2002 as part of the last conformity determination. Joe responded that 2002 was the baseline year for the AQ tests.
- Item #5, Conformity Analysis Years – Behshad committed to updating this information.
- Item #8, Travel Demand Model – It was noted that the most recent version of the regional model would have to be used. Anna commented that the Model Executive Committee should be officially adopting this most recent version on Monday, December 4, 2006.
- Items #9, Mode Split/Mode Choice and Item #10, Local Street County & VMT Estimate – Joe committed to providing updated verbiage for both sections to Eddie the first part of the week of December 4, 2006.
- Item #11, VMT Adjustments – The reference to normalizing VMT for 2005 should be removed. It was noted that there is a new 2015 budget for CO. This means that 2020 and 2030 should be tested against this budget, but that 2010 will have to be compared against 2005 with normalization.

- Item #12, MVEB/Conformity Test – It was noted that the Federal guidance is now out.
- Item #13, Control Strategies, Item #14, Mobile Source Emission Reduction Strategies and Item #15, Mobile Model – Mike Abraczinskas committed to sharing revised information with Eddie.
- Item #17, Regionally Significant Projects – There is still an unresolved question concerning TIP Project U-4915 in Gaston County.

Schedule Agreement

At the November 30, 2006 meeting, Eddie also asked everyone to review the draft schedule so that it could be updated at this meeting, as well. Terry commented that the transportation modeling start date should be modified to December 5, 2006 and that NCDOT should be added as a responsible party to the report preparation steps. In addition, she clarified NCDOT's responsibility for report reproduction – NCDOT will provide an electronic version of the draft report to each MPO and RPO, who would then be responsible for making the copies required locally. The MPOs and RPOs would be responsible for addressing any comments received on the draft report, as well. Finally, Terry commented that any extra time that could be shifted to the modeling steps would be extremely beneficial. Terry also wanted to clarify the modeling responsibility, since more than one pass of the model may be required. NCDOT proposed that Joe serve in a consultation role, sharing information and providing insight into the last conformity analysis, until NCDOT could complete the first model run. If additional model runs are, in fact , required, then NCDOT and CDOT should discuss Joe taking a more active role. CDOT agreed to this proposal.

Eddie asked about the reasonableness of the emission factor schedule. Mike stated that it would be more desirable to shift this step to early February 2007 and any additional time that could be shifted would be good.

Metrolina 07-13 TIP Conformity Process
Interagency Consultation –Project Status Meeting
9:30am – 11:30am
2/23/07

Meeting attendees: Meeting Participants:

- CDOT: Anna Brigman, Eldewins Haynes, Joe McLelland
- NCDOT: Terry Arellano, Behshad Norowzi, Jonathan Parker, Shannon Ransom, Linda Dosse
- FHWA: Eddie Dancausse, Loretta Barren
- NCDAQ: Laura Boothe, Heather Hildebrant, Phyllis Jones
- EPA: Lynorae Benjamin, Amanetta Wood
- FTA: Keith Melton
- Cabarrus Rowan MPO: Phil Conrad
- Rocky River RPO: Dana Stoogenke
- Lake Norman RPO: Bjorn Hansen

Project Status/Modeling Update

- The modeling work has been a team effort between North Carolina Department of Transportation (NCDOT), Kimley Horn (NCDOT Contractor) and the Charlotte Department of Transportation (CDOT).

- The modeling work should be completed (reviewed QA/QC, etc) by the end of next week. CDOT will provide the modeling data (VMT/Speeds, emission factor, and Regional Emissions Analysis-based on 4 times of day-CDOT will provide North Carolina Division of Air Quality (NCDAQ) with all the input/batch/start files for this work) to NCDOT for review before it is submitted to NCDAQ (hopefully by 3.1.07).

- There were some challenges with meeting the build-no-build test (NOx) for the 2020 horizon year. Several techniques used to remedy the problem:
  - The techniques used for this conformity process are the following:
    - VMT and speeds will be done for 4 times of day (the 4 times of days are summed for the regional emissions analysis)
      - 6:30 am - 9:30 am
      - 9:30 am - 3:30 pm
      - 3:30 pm - 6:30 pm
      - 6:30 pm - 6:30 am

  - *FYI: Once the VMT and speeds are done for 4 times of day the Metrolina area will not be able to go back to daily VMT and speeds unless there is good justification.*

    - Off model work (applied to all scenarios):
      - ITS enhanced
      - Signal System
      - Vanpool
    - Updated starts from the new model were also added

- *FYI: The techniques used for the last conformity process (completed 10/1/05) were daily VMT and speeds and ITS for the off model work.*

Conformity Process Schedule

- The conformity process schedule (CPS) was reviewed with the group and the interagency partners are ok with the schedule tasks and allotted times with the exception of the one item below.

- EPA expressed a concern about the TAC taking an action on the LRTP amendment adoption/conformity determination before the public involvement period was completed. FHWA and NCDOT explained that contingency language would be added to the resolution stating that: "*the LRTP adoption/conformity determination would be contingent on addressing outstanding agency/public comments*." EPA stated that they still had concerns on this topic. FHWA and NCDOT agreed to review the CPS and would attempt to make schedule revisions to address this issue and would share the revised schedule with the interagency partners.

Appendix Q: USDOT Concurrence of Conformity Finding

INSERT Concurrence Letters upon Conformity Finding HERE