

**Supplement to the  
Redesignation Demonstration  
and  
Maintenance Plan  
for**

**The Rocky Mount, North Carolina  
8-Hour Ozone Nonattainment Area**



**Prepared by  
North Carolina Department of Environment and Natural Resources  
Division of Air Quality**

**June 19, 2006  
Revised February 7, 2011**

*(This page intentionally left blank)*

## **INTRODUCTION**

This document is intended to supplement the Redesignation Demonstration and Maintenance Plan for the Rocky Mount, North Carolina 8-Hour Ozone Nonattainment Area that was submitted to the United States Environmental Protection Agency on June 19, 2006. This document revises the motor vehicle emission budgets to account for new emission models, vehicle miles traveled projection models and other emission model input data.

## **REVISED SECTIONS**

Attached are the revised sections to the Redesignation Demonstration and Maintenance Plan for the Rocky Mount, North Carolina 8-Hour Ozone Nonattainment Area. To appropriately revise the original package, replace the pages as outlined below:

### **Narrative Replacements**

Replace June 19, 2006 pages 4-2 through 4-4 with the attached February 7, 2011 pages 4-2 through 4-4. (Note that June 19, 2006 page 4-1 has been included for ease of substitution.)

### **Appendix B Replacements**

Add February 7, 2011 Appendix B pages 14 through 18 to the end of June 19, 2006 Appendix B.

### **Appendix C Replacements**

Replace June 19, 2006 Appendix C.3 pages 4-28 through 4-30 with the attached February 7, 2011 pages 4-28 through 4-30. (Note that June 19, 2006 Appendix C.3 page 4-31 has been included for ease of substitution.)

*(This page intentionally left blank)*

## **4.0 MOTOR VEHICLE EMISSIONS BUDGET FOR CONFORMITY**

### **4.1 TRANSPORTATION CONFORMITY**

The purpose of transportation conformity is to ensure that Federal transportation actions occurring in nonattainment areas do not hinder the area from attaining and maintaining the 8-hour ozone standard. This means that the level of emissions estimated by the NCDOT or the metropolitan planning organizations for the Transportation Implementation Plan (TIP) and Long Range Transportation Plan must not exceed the motor vehicle emission budget (MVEB) as defined in this maintenance plan.

### **4.2 HIGHWAY MOBILE SOURCE VOC INSIGNIFICANCE**

Section 93.109(k) in the Transportation Conformity Rule Amendments for the new 8-hour ozone and fine particulate matter NAAQS addresses areas with insignificant motor vehicle emissions. The rule suggests that such a finding would be based on a number of factors, including the percentage of motor vehicle emissions in the context of the total SIP inventory, the current state of air quality as determined by monitoring data for that NAAQS, the absence of SIP motor vehicle control measures, and historical trends and future projections of the growth of motor vehicle emissions.

The NCDAQ has examined the sources of VOC emissions and their contribution to ozone formation in North Carolina. Because of the generally warm and moist climate of North Carolina, vegetation abounds in many forms, and forested lands naturally cover much of the state. The biogenic sector is the most abundant source of VOCs in North Carolina and accounts for approximately 90% of the total VOCs statewide. The overwhelming abundance of biogenic VOCs makes the majority of North Carolina a NO<sub>x</sub> limited environment for the formation of ozone. This holds true in Edgecombe and Nash Counties.

Also noteworthy are the projected decreases in highway mobile VOC emissions through the year 2017 despite projected VMT increases. These reductions are due mainly to the retirement of older vehicles and the growing fleet of Tier 2 vehicles on the roads in future years. Some additional reductions are attributable to North Carolina's inspection and maintenance program in Edgecombe and Nash Counties.

Additionally, the NCDAQ has performed a number of modeling sensitivities to determine the impact of highway mobile source VOCs on ozone formation in the Rocky Mount area. The results of these sensitivities indicate no change in future ozone concentrations in the Rocky

Mount area when highway mobile VOCs are significantly changed. These sensitivities are discussed in more detail in Appendix C.3.

The NCDAQ believes highway mobile VOCs are insignificant contributors to ozone formation in the Rocky Mount nonattainment area. Emission estimates indicate highway mobile VOC is a small percentage of the total VOC emissions inventory. Highway mobile VOC emissions are projected to decrease into the future notwithstanding VMT increases. The area is currently well below the NAAQS and emission sensitivity modeling indicates no change in future ozone concentrations when VOC emissions are significantly changed. Further, the NCDAQ considers it unreasonable to expect that Edgecombe and Nash Counties will experience enough motor vehicle emissions growth for a future ozone violation to occur. For these reasons, the NCDAQ will not be setting MVEB for VOC for the Rocky Mount area.

### **4.3 SAFETY MARGIN**

As stated in Section 3.3.4, a safety margin is the difference between the attainment level of emissions from all source categories (i.e., point, area, and mobile) and the projected level of emissions from all source categories. The safety margins for the Rocky Mount area are listed in Table 3-7 above. The State may choose to allocate some of the safety margin to the MVEB, for transportation conformity purposes, so long as the total level of emissions from all source categories remains equal to or less than the attainment level of emissions.

The NCDAQ has decided to allocate safety margin to the MVEB to account for new emissions models, VMT projections models, as well as changes to future vehicle mix assumptions, etc. that influence the emission estimations. Since 2008 is a historic year, the NCDAQ decided to allocate the entire safety margin available to the MVEBs. For 2017, the NCDAQ estimated the amount needed to account for the current emission model and VMT projections model and then added an additional 21% to account for any future changes to the emission model, projection model and other input data.

#### Motor Vehicle Emission Budgets

The NCDAQ did not receive any comments regarding the geographic extent of the MVEB from any of the Rocky Mount transportation partners during the maintenance plan interagency consultation process. However, there was discussion through the interagency consultation process on the years to set MVEB for the Rocky Mount maintenance plan. According to Section 93.118 of the transportation conformity rule, a maintenance plan must establish a MVEB for the last year of the maintenance plan (in this case, 2017). Through the interagency consultation

process, it was decided that another MVEB would be set for the year 2008 in the Rocky Mount maintenance plan.

The NCDAQ will set MVEB, for transportation conformity purposes, as county budgets within the Rocky Mount maintenance area for 2008 and 2017. Tables 4-1 and 4-2 below list out the NOx MVEB, for transportation conformity purposes, by county for the years 2008 and 2017. Upon the USEPA's approval of these county-by-county sub-area MVEB, these MVEB will become the applicable MVEB for each county.

**Table 4-1 Edgecombe County MVEB in kilograms per day**

	2008	2017
<i>NOx Emissions (kg/day)</i>		
Base Emissions	2,483	1,143
Safety Margin Allocated to MVEB	1,674	1,108
<b>NOx Conformity MVEB</b>	<b>4,157</b>	<b>2,251</b>

**Table 4-2 Nash County MVEB in kilograms per day**

	2008	2017
<i>NOx Emissions (kg/day)</i>		
Base Emissions	8,790	3,767
Safety Margin Allocated to MVEB	1,655	2,374
<b>NOx Conformity MVEB</b>	<b>10,444</b>	<b>6,141</b>

New Safety Margins

A total of 3,329 kg (3.67 tons) and 3,482 kg (3.84 tons) of 2008 and 2017 NOx safety margin, respectively, were added to the MVEB for the Rocky Mount area. Taking into consideration the portion of the safety margin applied to the MVEB the resulting difference between the attainment level of emissions from all sources and the projected level of emissions from all sources in the maintenance area, i.e., the new safety margins, for each projected year is listed below in Table 4-3.

**Table 4-3 New Safety Margins for the Rocky Mount Area**

Year	VOC TPD	NO <sub>x</sub> TPD
2005	N/A	N/A
2008	-0.59	0.0
2011	-0.51	-6.93
2014	-0.07	-9.77
2017	-0.07	-7.79

Based on the information discussed above, the NCDAQ steadfastly believes highway mobile VOCs are insignificant contributors to ozone formation in Edgecombe and Nash Counties. Emission estimates indicate highway mobile VOC is a small percentage of the total VOC emissions inventory. Highway mobile VOC emissions are projected to decrease into the future notwithstanding VMT increases. The area is currently well below the NAAQS and emission sensitivity modeling performed by ASIP and the NCDAQ indicates no change in future ozone concentrations when VOC emissions are significantly changed. Further, the NCDAQ considers it unreasonable to expect that Edgecombe and Nash Counties will experience enough motor vehicle emissions growth for a future ozone violation to occur. For these reasons, the NCDAQ will not be setting MVEB for VOC for the Rocky Mount area.

### Safety Margin

A safety margin is the difference between the attainment level of emissions from all source categories (i.e., point, area, and mobile) and the projected level of emissions from all source categories. The State may choose to allocate some of the safety margin to the MVEB, for transportation conformity purposes, so long as the total level of emissions from all source categories remains equal to or less than the attainment level of emissions.

The NCDAQ has decided to allocate safety margin to the MVEB to account for new emissions models, VMT projections models, as well as changes to future vehicle mix assumptions, etc. that influence the emission estimations. Since 2008 is a historic year, the NCDAQ decided to allocate the entire safety margin available to the MVEBs. For 2017, the NCDAQ estimated the amount needed to account for the current emission model and VMT projections model and then added an additional 21% to account for any future changes to the emission model, projection model and other input data.

### Motor Vehicle Emission Budgets

The NCDAQ did not receive any comments regarding the geographic extent of the MVEB from any of the Rocky Mount transportation partners during the maintenance plan interagency consultation process. However, there was discussion through the interagency consultation process on the years to set MVEB for the Rocky Mount maintenance plan. According to Section 93.118 of the transportation conformity rule, a maintenance plan must establish a MVEB for the last year of the maintenance plan (in this case, 2017). Through the interagency consultation process, it was decided that another MVEB would be set for the year 2008 in the Rocky Mount maintenance plan.

The NCDAQ will set MVEB, for transportation conformity purposes, as county budgets within the Rocky Mount nonattainment area for 2008 and 2017. Tables 4.1.6-1 and 4.1.6-2 below list out the NOx MVEB, for transportation conformity purposes, by county for the years 2008 and 2017. Upon the USEPA's approval of these county-by-county sub-area MVEB, these MVEB will become the applicable MVEB for each county.

**Table 4.1.6-1 Edgecombe County MVEB in kilograms per day**

	2008	2017
<i>NOx Emissions (kg/day)</i>		
Base Emissions	2,483	1,143
Safety Margin Allocated to MVEB	1,674	1,108
<b>NOx Conformity MVEB</b>	<b>4,157</b>	<b>2,251</b>

**Table 4.1.6-2 Nash County MVEB in kilograms per day**

	2008	2017
<i>NOx Emissions (kg/day)</i>		
Base Emissions	8,790	3,767
Safety Margin Allocated to MVEB	1,655	2,374
<b>NOx Conformity MVEB</b>	<b>10,444</b>	<b>6,141</b>

*(This page intentionally left blank)*

#### 4.1.7 Speed and VMT provided in January 11, 2006 email from NCDOT

<b>EDGEcombe COUNTY</b>				
<b>Modeled Area</b>				
<b>Functional Class&gt;Code</b>	<b>2002</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
U-Inter>11	0	0	0	0
Frwy/Exway>12	96,183	132,442	145,217	181,269
U-OtherPrincipal>13	18,434	21,299	23,253	26,477
U-MinorArterial>14	95,164	112,033	150,093	178,359
Collector>15	14,935	17,097	18,254	19,974
U-Local>18	50,229	63,048	72,449	84,957
R-Inter>21	-	-	-	-
R-OtherPrincipal>23	130,368	195,824	249,218	321,288
R-MinorArterial>24	8,061	8,455	9,395	10,339
MajorCollector>26	106,438	85,241	106,833	137,766
MinorCollector>27	60,680	66,977	75,900	100,975
R-Local>28	71,333	87,077	97,925	111,287
<b>Total from Model</b>	<b>651,825</b>	<b>789,495</b>	<b>948,535</b>	<b>1,172,690</b>
Rural spreadsheet Portion	851,465	1,042,781	1,249,659	1,456,538
<b>County total</b>	<b>1,503,290</b>	<b>1,832,275</b>	<b>2,198,194</b>	<b>2,629,229</b>
<b>County total from Universe file</b>	<b>1,548,100</b>	<b>1,895,942</b>	<b>2,272,058</b>	<b>2,648,173</b>
	<b>2002</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
<b>Rural VMT(Outside MPO)</b>				
Urban Interstate	0.0	0.0	0.0	0.0
Urban Other Freeway	44,399.5	67,744	81,184	94,624
Urban Other PA	53,540.0	65,312	78,270	91,227
Urban Minor Arterial	72,580.5	101,020	121,062	141,103
Urban Collector	8,768.0	11,533	13,822	16,110
Urban Local	40,677.5	50,167	60,120	70,072
Rural Functional Classes				
Rural Interstate	0.0	0.0	-	-
Rural Other PA	196,647.0	235,449	282,160	328,871
Rural Minor Arterial	73,139.0	90,089	107,962	125,834
Rural Major Collector	197,092.5	217,920	261,154	304,387
Rural Minor Collector	104,681.5	131,202	157,232	183,261
Rural Local	59,939.0	72,343	86,695	101,048
<b>Total</b>	<b>851,464.50</b>	<b>1,042,781</b>	<b>1,249,659</b>	<b>1,456,538</b>

## Public Notice Report

### For the Supplement to the Redesignation Demonstration and Maintenance Plan for the Rocky Mount, North Carolina 8-Hour Ozone Nonattainment Area

On December 3, 2010, a draft version of the North Carolina supplement to the redesignation demonstration and maintenance plan for the Rocky Mount, North Carolina 8-hour ozone nonattainment area was submitted to the U. S. Environmental Protection Agency (USEPA). A request for public hearing, in accordance with 40 CFR 51.102, and the public comment period were noticed in the local newspapers on Wednesday, December 8, 2010. The public comment period was open from December 8, 2010, through January 10, 2011. No request for public hearing was received and no public comments were received.

In March 2010, the USEPA announced in the Federal Register (FR) that the new mobile model, Motor Vehicle Emission Simulator (MOVES), will be required for transportation conformity purposes starting March 2012 (40 FR 9411). The NCDAQ committed to the transportation partners to review and revise the motor vehicle emission budgets if necessary to account for changes to the emission models, to the vehicle miles traveled projection models and other emission model input data. This supplement revises the motor vehicle emission budgets through the allocation of a portion of the safety margin. These revised motor vehicle emission budgets will be used for transportation conformity purposes once approved by the USEPA.

The North Carolina Division of Air Quality will be moving forward with the final submittal to the USEPA of the North Carolina supplement to the redesignation demonstration and maintenance plan for the Rocky Mount, North Carolina 8-hour ozone nonattainment area.

# AFFIDAVIT OF PUBLICATION

NORTH CAROLINA,  
Wake County. ) Ss.

**NORTH CAROLINA DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES  
PUBLIC NOTICE**

**PURPOSE:**  
The North Carolina Department of Environment and Natural Resources, Division of Air Quality (NCDAQ), hereby gives notice regarding its Pre-Hearing Draft Supplement to the Redesignation Demonstration and Maintenance Plan for Rocky Mount, North Carolina 8-Hour Ozone Non-attainment Area dated December 3, 2010. Persons wishing to submit written comments or request a public hearing regarding the "Rocky Mount Supplemental Package" are invited to do so.

**COMMENT PROCEDURES:**  
Any person wishing to comment may submit a written statement for inclusion in the record of proceedings regarding the Supplemental Package. Written comments should be postmarked no later than January 10, 2011 and addressed to Laura Boothe, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641.

**REQUESTS FOR A PUBLIC HEARING:**  
Requests for a public hearing must be in writing and include a statement supporting the need for such a hearing, an indication of your interest in the subject, and a brief summary of the information intended to be offered at such hearing. A public hearing will be scheduled if requested. A separate notice will be published for the hearing including the date, time and location. Written requests for a public hearing should be postmarked no later than January 10, 2011 and addressed to Laura Boothe, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641.

**INFORMATION:**  
Copies of the Supplemental Package may be downloaded at <http://www.ncair.org/planning/ncsip.shtml> or by contacting:

Laura Boothe  
Division of Air Quality  
1641 Mail Service Center  
Raleigh, NC 27699-1641  
Phone: (919) 733-1488  
Fax: (919) 715-7476  
[daq.publiccomments@ncmail.net](mailto:daq.publiccomments@ncmail.net)

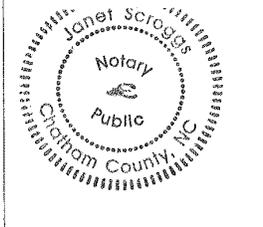
(Note: In the subject line type "Rocky Mount Supplemental Package")

The Supplemental Package may be reviewed at the office of the North Carolina Department of Environment and Natural Resources, Division of Air Quality, located in:

Th Raleigh Central Office,  
Planning Section 919-733-1115  
Raleigh Regional Office 919-791-4200

The Supplemental Package may also be reviewed at the office of the City of Rocky Mount Engineering Department 252-972-1129

Date: 11/30/10  
/s/ Sheila C. Holman, Director  
N&O: December 8, 2010



Before the undersigned, a Notary Public of Chatham County North Carolina, duly commissioned and authorized to administer oaths, affirmations, etc., personally appeared Debra Peebles, who, being duly sworn or affirmed, according to law, doth depose and say that she is Accounts Receivable Specialist of The News and Observer a corporation organized and doing business under the Laws of the State of North Carolina, and publishing a newspaper known as The News and Observer, in the City of Raleigh, Wake County and State aforesaid, the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all of the requirements and qualifications of Section 1-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section 1-597 of the General Statutes of North Carolina, and that as such she makes this affidavit; that she is familiar with the books, files and business of said corporation and by reference to the files of said publication the attached advertisement for NCDENR/ AIR QUALITY DIVISION was inserted in the aforesaid newspaper on dates as follows: 12/08/10

Account Number: 73314870

the books and files of the aforesaid Corporation and publication.

Debra Peebles, Accounts Receivable Specialist  
Wake County, North Carolina

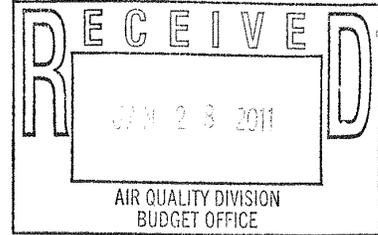
Sworn or affirmed to, and subscribed before me, this 09 day of DECEMBER, 2010 AD, by Debra Peebles.

In Testimony Whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

Janet Scroggs, Notary Public

My commission expires 14<sup>th</sup> of March 2014.

# Rocky Mount TELEGRAM



NC DIVISION OF AIR QUALITY  
1641 MAIL SERVICE CENTER

RALEIGH, NC 27699-1641

CopyLine:	REDESIGNATION DEMO
Lines:	81
Total Price:	\$152.28

## PUBLISHER'S AFFIDAVIT

AD ID: 7634306

NORTH CAROLINA  
NASH COUNTY:

RACHEL WATSON affirms that she is clerk of the Rocky Mount Telegram, a newspaper published daily at Rocky Mount, Nash County, North Carolina, and that the advertisement, a true copy of which is hereto attached, entitled REDESIGNATION DEMO was published in said the Rocky Mount Telegram on the following dates:

Wednesday, December 8, 2010

Page: D1

and that the said newspaper in which such notice, paper, document or legal advertisement was published, was at the time of each and every publication, a newspaper meeting all of the requirements and qualifications of Chapter 1, Section 597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Chapter 1, Section 597 of the General Statutes of North Carolina.

*Rachel Watson*

Affirmed and subscribed before me this 08 day

of December 2010

*Michelle W. Parker*

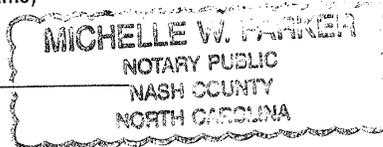
(Notary Public Signature )

*Michelle W. Parker*

(Notary Public Printed Name)

My commission expires

*11-18-12*



NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT & NATURAL RESOURCES

### PUBLIC NOTICE

PURPOSE: The North Carolina Department of Environment and Natural Resources, Division of Air Quality (NCDAQ), hereby gives notice regarding its Pre-Hearing Draft Supplement to the Redesignation Demonstration and Maintenance Plan for Rocky Mount, North Carolina 8-Hour Ozone Nonattainment Area dated December 3, 2010. Persons wishing to submit written comments or request a public hearing regarding the "Rocky Mount Supplemental Package" are invited to do so.

COMMENT PROCEDURES: Any person wishing to comment may submit a written statement for inclusion in the record of proceedings regarding the Supplemental Package. Written comments should be postmarked no later than January 10, 2011 and addressed to Laura Boothe, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641.

REQUESTS FOR A PUBLIC HEARING: Request for a public hearing must be in writing and include a statement supporting the need for such a hearing, an indication of your interest in the subject, and a brief summary of the information intended to be offered at such hearing. A public hearing will be scheduled if requested. A separate notice will be published for the hearing including the date, time and location. Written requests for a public hearing should be postmarked no later than January 10, 2011 and addressed to Laura Boothe, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641.

INFORMATION: Copies of the Supplemental Package may be downloaded at [http://www.ncair.org/planning/nc\\_sip.sh](http://www.ncair.org/planning/nc_sip.sh) tml or by contacting:

Laura Boothe  
Division of Air Quality  
1641 Mail Service Center  
Raleigh, NC 27699-1641  
Phone: (919) 733-1488

Fax: (919) 715-7476  
daq.publiccomments@ncmail.net  
(Note: In the subject line type "Rocky  
Mount Supplemental Package")

The Supplemental Package may be reviewed at the office of the North Carolina Department of Environment and Natural Resources, Division of Air Quality, located in:

Raleigh Central Office, Planning Section  
919-733-1115  
Raleigh Regional Office 919-791-4200

The Supplemental Package may also be reviewed at the office of the City of Rocky Mount Engineering Department  
252-972-1129

Sheila C. Holman, Director

12.08/2010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

January 7, 2011

Ms. Sheila C. Holman, Director  
Division of Air Quality  
North Carolina Department of  
Environment And Natural Resources  
1641 Mail Service Center  
Raleigh, North Carolina 27699-1641

Dear Ms. Holman:

Thank you for your letter dated December 3, 2010, transmitting a prehearing package regarding the Supplement to the Redesignation Demonstration and Maintenance Plan for the Rocky Mount, North Carolina 8-hour Ozone Nonattainment Area. These rules will be the subject of a public hearing, if requested, with written comments due by the close of business on January 10, 2011. We have completed our review of the submittal and offer no comments at this time.

We look forward to continuing to work with you and your staff. If you have any questions, please contact Ms. Lynorae Benjamin, Chief, Regulatory Development Section at (404) 562-9040, or have your staff contact Ms. Nacosta C. Ward at (404) 562-9140.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lynorae Benjamin" or similar, written over a horizontal line.

Richard A. Schutt  
Chief  
Air Planning Branch