Technical Support Document for Greensboro, North Carolina
September 2004

1.0 Summary.

The State of North Carolina presented a petition to EPA, Region 4, requesting downward reclassification of the Greensboro/Winston-Salem/High Point (Triad) Ozone Nonattainment Area from Moderate to Marginal for the 8-hour standard. The petition was presented to EPA July 14, 2004. The petition is based on the area's Moderate design value of 0.093 parts per million (ppm) being within 5 percent of the maximum Marginal design value of 0.091 ppm as allowed by the Clean Air Act.

2.0 Introduction.

This section describes the statutory provisions and EPA guidance regarding reclassification of ozone nonattainment areas. Sections 181(a)(4) and 182(b)(3) of the Clean Air Act provide that areas may be reclassified under certain circumstances. This technical support document addresses the provisions of section 181(a)(4) and a specific request for reclassifications received by the State of Indiana. The EPA has not received any requests for reclassification under section 182(b)(3) for the 8-hour ozone standard.[1]

Under section 181(a)(4), an ozone nonattainment area may be reclassified "if an area classified under paragraph (1) (Table 1) would have been classified in another category if the design value in the area were 5 percent greater or 5 percent less than the level on which such classification was based." In the April 30, 2004 notice, we indicated that an area with a moderate design value of 96 ppb (or less) would be eligible to request a bump down because five percent less than 96 ppb is 91 ppb, a marginal design value.

The EPA previously described criteria to implement the section 181(a)(4) provisions in a final rule designating and classifying areas published on November 6, 1991 (56 FR 56698). As stated in that notice, the provisions of section 181(a)(4) set out general criteria and grant the Administrator broad discretion in making or determining not to make, a reclassification. As part of the 1991 action, EPA developed more specific criteria to evaluate whether it is appropriate to reclassify a particular area. The

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[1]Section 182(b)(3) specifies that EPA would approve any request from a State to reclassify to a higher classification.

EPA also described these criteria in the April 30, 2004 final rule. The general and specific criteria are as follows:

General: The EPA may consider the number of exceedances of the national primary ambient air quality standard for ozone in the area, the level of pollution transport between the area and other affected areas, including both intrastate and interstate transport, and the mix of sources and air pollutants in the area.

Request by State: The EPA does not intend to exercise its authority to bump down areas on EPA's own initiative. Rather, EPA intends to rely on the State to submit a request for a bump down. A Tribe may also submit such a request and, in the case of a multi-state nonattainment area, all affected States must submit the reclassification request.

Discontinuity: A five percent reclassification must not result in an illogical or excessive discontinuity relative to surrounding areas. In particular, in light of the area-wide nature of ozone formation, a reclassification should not create a "donut hole" where an area of one classification is surrounded by areas of higher classification.

Attainment: Evidence should be available that the proposed area would be able to attain by the earlier date specified by the lower classification in the case of a bump down.

Emissions reductions: Evidence should be available that the area would be very likely to achieve the appropriate total percent emission reduction necessary in order to attain in the shorter time period for a bump down.

Trends: Near- and long-term trends in emissions and air quality should support a reclassification. Historical air quality data should indicate substantial air quality improvement for a bump down. Growth projections and emission trends should support a bump down. In addition, we will consider whether vehicle miles traveled and other indicators of emissions are increasing at higher than normal rates.

Years of data: For the 8-hour ozone standard, the 2001-2003 period is central to determining classification. Data from 2004 may be used to corroborate a bump down request but should not be the sole foundation for the bump down request.

Limitations on Bump Downs
An area may only be reclassified to the next lower

classification. An area cannot present data from other years as justification to be reclassified to an even lower classification. In addition, section 181(a)(4) does not permit moving areas from subpart 2 into subpart 1.

In 1991, EPA approved reclassifications when the area met the first requirement (a request by the State to EPA) and at least some of the other criteria and did not violate any of the criteria (emissions, reductions, trends, etc.). In our April 30, 2004 final rule on designations and classifications, we stated our intention to use this method and these criteria once again to evaluate reclassification requests under section 181(a)(4), with minor changes described in that notice. In that notice we also described how we applied these criteria in 1991. For additional information, see section 5, "Areas requesting a 5% downshift per §181(a)(4) and EPA's response to those requests," of the Technical Support Document, October 1991, for the 1991 rule. [Docket A-90-42A.]

EPA is not basing this reclassification determination on consideration of whether the nonattainment area being reclassified does or does not cause any pollution transport. The EPA is presently addressing ozone pollution transport issues throughout the eastern part of the United States under other Clean Air Act provisions. Specifically, EPA has proposed a determination that emissions from certain states contribute significantly to downwind nonattainment for ozone under CAA section 110(a)(2)(D) through the Clean Air Interstate Rule (CAIR). The CAIR proposal, published in a Federal Register notice dated January 30, 2004, would require upwind States to eliminate emissions that contribute significantly to nonattainment in downwind States. 69 Fed. Reg. 454566. The EPA previously issued the NOx SIP call (63 FR 57356) to address interstate ozone transport. In the event of any intrastate transport issue, states have the obligation to develop attainment SIPs for each area that show timely attainment, and can address any intrastate transport issues in that context.

The April 30, 2004 notice invited States to submit the reclassification requests within 30 days of the effective date of the designations and classifications. The effective date was June 15 which means that reclassification requests were to be submitted by July 15, 2004. This relatively short time frame is necessary because section 181(a)(4) only authorizes the Administrator to make such reclassifications within 90 days after the initial classification, September 15, 2004.

3.0 Background.

The Triad area was designated nonattainment for the 8-hour ozone

standard on April 15, 2004, and classified "Moderate" based on a design value of 0.093 ppm. The modeling was developed according to EPA's draft 8-hour ozone modeling guidance and it was used to support a deferral of the effective date for the nonattainment area. The recently revised Triad Metropolitan Statistical Area (MSA), which has a population of over 1.3 million, includes Davidson, Davie, Forsyth, Guilford, Alamance, Caswell, Randolph, and Rockingham counties. In 2000, Davie County had a population of just over 34,000 (which includes the Cooleemee monitor), while Forsyth County reported a population of 306,000 (which includes the Hattie monitor) and Guilford County had a population of over 421,000. The remaining counties had the following populations: Davidson, 147,000; Randolph, over 130,000; Stokes, over 44,000; Yadkin, over 36,000; Rockingham, over 91,000 and Caswell, under 24,000.

There are nine monitors in the Triad area. Two monitors have a design value of 0.093 ppm which is above the moderate threshold but within 5 percent of the marginal category: the Cooleemee monitor located in Davie County and the Hattie monitor in Forsyth County. One of the monitors is attaining the 8-hour ozone standard and the remaining six monitors range from 0.085 to 0.089 ppm, all within the marginal classification range.

4.0 Reclassification Request by States.

The State's request and the rationale is as follows:

1. Request by State: The State of North Carolina presents this petition.

2. Discontinuity: The Triad area is downwind of the Charlotte moderate nonattainment area. Although this area has a later attainment date, attainment by 2007 for the Triad area should not be affected. Local photochemical grid modeling for the Triad area includes emissions and emissions reductions from the Charlotte nonattainment area. Attainment is still indicated.

3. Attainment: Local photochemical grid modeling, developed under the Early Action Compact (EAC) program, demonstrates attainment of the Triad area which includes the Greensboro MSA.

4. Emissions Reductions: Appropriate and achievable emissions reductions are detailed in the petition and the EAC progress report submittals.

5. Trends: Since 1998, monitored ozone levels at the Greensboro MSA monitors have steadily decreased and

support reclassification.

6. Years of Data: 2001-2003 air quality data was used to designate the nonattainment area.

5.0 EPA Review of the Reclassification Request.

5.1 Request by State.

The state of North Carolina submitted the petition by the date required; July 15, 2004.

5.2 Discontinuity.

The modeling screening tests documented in the petition demonstrate that no discontinuity exists with surrounding areas. Surrounding areas include the Charlotte area which has the same classification, and the Raleigh area which has a lower classification. The Charlotte attainment date of 2010 is later than the Triad attainment date of 2007. There are three areas near the Triad nonattainment area that are violating the 8-hour NAAQS based on 2001-2003 data; Raleigh/Durham/Chapel Hill (Triangle) area, Hickory/Morganton/Lenoir (Unifour), and Charlotte/Gastonia/Rock Hill area (Charlotte). The EAC air quality modeling indicates that two of these areas will attain the standard by 2007 (Triangle and Unifour). Local controls are being implemented to reduce the impact of regional transport from the remaining nonattainment area (Charlotte).

5.3 Attainment.

Local photochemical grid modeling, developed under the EAC program, demonstrates attainment for the Triad area which includes the Greensboro MSA. The modeling predicts a 2007 future design value of 0.084 ppm for the Triad area which indicates attainment. Eight of the nine monitors are projected to be at 0.08 ppm or below. In addition, the EAC modeling for 2010 also indicates maintenance of the 8-hr ozone NAAQS. The modeling was developed according to EPA's draft 8-hour ozone modeling guidance and was used to support a deferral of the effective date for the nonattainment area. Updated local modeling data included in the June 2004 EAC progress report were referenced to support the attainment criteria of the reclassification petition. Future design values from the June report for the nine Triad monitors are presented in the following table.

Monitoring Site	AIRS ID	2007 Design Values (ppm)

Cooleemee	37-059-0002	0.084
Hattie Avenue	37-067-0022	0.080
Union Cross	37-067-1008	0.079
Bethany	37-157-0099	0.076
Cherry Grove	37-033-0001	0.076
McLeansville	37-081-0011	0.076
Shiloh Church	37-067-0028	0.076
Sophia	37-151-0004	0.072
Pollirosa	37-067-0027	0.069

Regional scale modeling developed by EPA to support the Clean Air Interstate Rule (CAIR) predicts a 2010 future area-wide 8-hour ozone design value for the Triad area of 0.078 ppm. This indicates the area will continue to comply with the 8-hour NAAQS beyond 2007. The CAIR modeling data are from the proposed rulemaking's 2010 base case.

5.4 Emissions Reductions

Attainment is expected because of the combination of measures to be implemented and potential measures listed in the petition along with the commitment of the area to implement additional measures as needed to achieve attainment. Implementation of controls both within the nonattainment area and in the surrounding areas of the State provide assurances of attainment for the area. The oxides of nitrogen (NOx) and volatile organic compounds (VOC) controls that are being implemented within the Greensboro nonattainment area and the surrounding areas to achieve improved air quality and attainment are presented as follows.

Greensboro (Triad) EAC Controls
NOx SIP Call Reductions (regulation) -Reducing NOx emissions from Power Plants by 68% (full implementation in 2006 - but most controls already implemented) -Reducing NOx emissions from Internal combustion (IC) Engines, implementation in 2004 **modeled:** yes

Inspection and Maintenance Program - Onboard Diagnostics (OBD) (regulation) -Required in all counties of the Triad, phasing in between July 2002 and 2005. All counties except Stokes and Surry will implement prior to 2005 **modeled:** yes
Full Maintenance Plan through 2017
Greensboro city - conversion to biodesiel for all on and off road vehicles (voluntary) **modeled:** no
Guildford County - School bus diesel retrofits (voluntary) **modeled:** no
Open Burning Ban - Code orange/Red Days (regulation) **modeled:** yes
RJ Reynolds - Tobaccoville eliminate use of 4 coal-fired boilers (2004-2007) (regulation) **modeled:** yes
Piedmont Authority for Regional Tranportation (PART) has funds to build 20 park and ride lots (voluntary) **modeled:** no
Linked Regional Transit Planning (PART) to EAC Goals (voluntary) **modeled:** no
No idling policy for all Guilford county school buses (voluntary) **modeled:** no
On-line data Base and Reporting System for vehicle replacement (Forsyth County/Greensboro) (voluntary) **modeled:** no

All of the above local controls will have begun implementation by the beginning of the 2006 ozone season.

5.5 Trends.

The area's design value is 0.093 ppm, 2 ppb above the Marginal classification design value based on 2001-2003 data. The area has not had any exceedances at the Cooleemee or Hattie monitor in 2004 through August 10. The 4th highest monitor value is 0.070 ppm at the Cooleemee monitor and 0.069 ppm at the Hattie monitor. If these values remain the 4th highest for 2004, the

design value will decline to 0.085 for both monitors, well within the Marginal range and only 1 ppb above the attainment level. With the monitor values already established for 2002 and 2003, the Cooleemee and Hattie monitors could have a 4th high value as high as 0.090 and 0.092 ppm respectively and the design value would still decline to 0.092 ppm, which is within five percent of the upper limit for the Marginal classification. Design value trends for the monitors in the Triad area have generally declined since 1997. Therefore, the trends in air quality 8-hour ozone design values indicate the Marginal classification is appropriate. (See Figure 1)

Emissions data demonstrate a decrease in NOx emissions of about382 tons per day between 2000 and 2007. Beyond 2007, further NOx emissions reductions are expected due to the Federal, State and local control measures. VOC emissions will decrease by 20 tons per day between 2000 and 2007 with additional future reductions expected. An aggressive control program is being implemented throughout the State that affects stationary and mobile sources.

5.6 Years of data.

The period used for classification is 2001-2003.

5.7 Additional Information.

North Carolina is committed to conserve and protect its natural resources and maintaining a high quality environment. With the rules and legislation that North Carolina has already enacted, it is expected the Triad area will attain the 8-hour ozone NAAQS without having to implement the control measures prescribed by the moderate classification.

5.8 Conclusions

The data and analysis presented in the petition support the request for downward revision to the 8-hour ozone classification for the Triad area. The downward trends in air quality monitor and emissions data are strong indicators of future attainment. The emission reductions available along with the commitment by the state and local agencies to add necessary controls further serve to justify downward classification. Under the EAC, although not required, the December 31, 2004 EAC SIP submittal will include a “section 175A type” maintenance plan.

5.9 EPA Action

The EPA is approving the reclassification request for Greensboro because the request meets all of the criteria EPA established.

6.0 Additional Information

Additional information regarding the bump down request for this area is contained in the docket for this action. This information includes the State request, supporting documents, and other necessary material.