

US EPA ARCHIVE DOCUMENT

**Technical Support Document for Richmond, Virginia
September 2004**

1.0 Summary

The EPA designated this area as moderate on April 15, 2004 due to 8-hour ozone values (design value is 94 ppb). On July 12, 2004 the Virginia Department of the Environmental Quality submitted a request to reclassify Richmond from moderate to marginal ozone nonattainment.

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

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

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.]

The 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 EPA designated this area as moderate on April 15, 2004 due to 8-hour ozone values (design value is 94 ppb). On July 12, 2004 the Virginia Department of the Environmental Quality submitted a request to reclassify Richmond from moderate to marginal ozone nonattainment. The Richmond, VA moderate ozone nonattainment area consists of five counties (Charles City, Chesterfield, Hanover, Henrico, and Prince George) and four independent cities (Colonial Heights, Hopewell, Petersburg, and Richmond). This area is adjacent to the southeast edge of the Washington D.C. moderate 8-hour ozone nonattainment area.

4.0 Reclassification Request by State

The Virginia DEQ supports their reclassification request with analyses of ambient air quality monitoring data and trends in the area, various DEQ and EPA modeling exercises which indicate that the area is likely to attain the 8-hour ozone as soon as 2007, and an emissions analysis which indicates that substantial emission reductions will be achieved in the area by 2007.

5.0 EPA Review of Reclassification Request

5.1 Request by State

On July 12, 2004, Virginia DEQ submitted a request to EPA to bump-down the Richmond, VA moderate ozone nonattainment area from "moderate" to "marginal."

5.2 Discontinuity

The Richmond, VA moderate ozone nonattainment area consists of five counties (Charles City, Chesterfield, Hanover, Henrico, and Prince George) and four independent cities (Colonial Heights, Hopewell, Petersburg, and Richmond). This area is adjacent to the southeast edge of the Washington D.C. moderate 8-hour ozone nonattainment area. To the northeast of Richmond, and across the Chesapeake Bay, is the Philadelphia moderate 8-hour ozone nonattainment area. Richmond is also adjacent to and located to the northwest of the Norfolk-Virginia Beach, VA subpart 1 8-hour ozone nonattainment area. Reclassification of the Richmond area will not create a discontinuity since there would be no area of one classification surrounded by areas of a higher classification.

5.3 Attainment

The modeling performed by Virginia for demonstrating attainment in Richmond by 2007 was based on modeling conducted for the

Roanoke, VA EAC. While not optimized for the Richmond area, this modeling can be used to indicate whether Richmond might attain by 2007. However, VA found errors in the emissions inventory. Virginia re-ran their EAC modeling with improved emissions data. The revised EAC modeling projects attainment in the Richmond area in 2007. The highest of these projected design values is 84.1 ppb for the Hanover monitor.

To provide additional evidence that the Richmond area is likely to attain in 2007, relative reduction factors were developed by the State based on the NOx SIP call and the Heavy Duty Diesel Rule modeling for the Richmond area, resulting in projected 2007 ozone design values of 81.5 ppb and 82.5 ppb, respectively. Because the CAIR regional modeling uses more up-to-date data and methodologies than the NOx SIP Call or Heavy Duty Diesel Rule modeling, EPA is not relying on these two older analyses for purposes of the bump down.

The EPA's January 2004 CAIR modeling projects Richmond's ozone concentrations to be well below the ozone standard in 2010 (77 ppb). Although neither analysis is as comprehensive an assessment as would be expected with a SIP attainment demonstration, together they provide support that the Richmond area will attain the ozone standard by 2007.

5.4 Emission Reductions

On August 30, 2004, the Director of Virginia's Department of Environmental Quality submitted a letter to EPA (followed up by a letter on September 2, 2004 from the VA Air Director) committing to adopt additional emission control measures to reduce ozone levels. Several of these measures are already in place in the smaller 1-hour Richmond ozone nonattainment area or in the northern Virginia (Washington D.C.) 1-hour ozone nonattainment area. This letter stated that control measures such as reformulated gasoline, stage I, and existing source RACT regulations would be extended into the larger Richmond 8-hour ozone nonattainment area. The northern Virginia control measures (solvent cleaning, architectural and maintenance coatings, motor vehicle refinishing, and portable fuel containers) would be studied and the process of adoption for the Richmond 8-hour ozone nonattainment area would commence. Therefore, the emissions trend is expected to decrease due to the implementation of various local, regional, and national rules.

In the Richmond area, Virginia has implemented RACT and NSR requirements under the 1 hour ozone standard. Richmond was redesignated to attainment for the 1 hour ozone standard on

December 17, 1997 (62 FR 61237). Richmond, VA was designated a moderate 1hour ozone nonattainment area in 1991 by EPA (56 FR 56694, November 6, 1991) but in 1997, EPA made a determination that the Richmond area was monitoring attainment of the 1 hour ozone standard and made inapplicable certain Part D requirements, including RFP and attainment demonstration requirements (62 FR 52029, October 6, 1997). EPA's determination of inapplicability of certain Part D requirements was made using a May 10, 1995 EPA memorandum ("Reasonable Further Progress, Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standard"). As a result, Richmond did not implement I/M or NOx RACT and did not complete a 15% plan or attainment demonstration as a moderate 1hr ozone nonattainment area.

5.5 Trends

The 2004 ozone data in the Richmond areas show that a downward trend in ozone concentrations is continuing. This data (to date) show that one monitor is in attainment and the remaining three area monitors are within the marginal nonattainment range as shown by the updated design values (2002-2004) provided below:

Richmond Ozone Monitor Design Values (2002 to 2004)

Chesterfield 82 ppb (attainment)
Henrico 85 ppb (marginal nonattainment)
Hanover 90 ppb (marginal nonattainment)
Charles City 87 ppb (marginal nonattainment)

It can be expected that ozone values will decline due to the implementation of local, regional, and national rules relative to ozone levels in recent years.

From the 8 hour ozone designations analysis, population growth (from 1990 to 2001) in the Richmond area varies but in general there is moderate growth (relative to other Region III counties) in the counties and a reduction in population in the independent cities. VMT growth also varies depending on the specific county/independent city but overall, VMT growth is moderate, when compared to other Region III counties.

5.6 Years of Data

Virginia has appropriately evaluated Richmond based on the 2003 ozone design value, which uses ozone data from 2001, 2002 and 2003. The 2003 ozone design value for Richmond, VA is 94 ppb.

5.7 Additional Information

In addition to the technical information and analyses provided as part of this process, the State plans to proactively evaluate and implement additional controls in the Richmond area to further improve local and regional air quality. First, because the geographic area of the Richmond nonattainment area has increased under the 8-hour ozone standard, the State will begin the process to extend certain nonattainment requirements to the additional jurisdictions involved to satisfy basic nonattainment requirements and area equity issues. These jurisdictions include Charles City County, Prince George County, and the City of Petersburg. This action will include the implementation of such measures as reformulated gasoline, stage I vapor recovery, and other existing source (RACT) controls. The State hopes to have these measures implemented in the extended area by the summer of 2006. The State will initiate the process of extending some or all of the "Ozone Transport" controls on various area sources to the Richmond area. These measures have been or are being adopted in the Northern Virginia portion of the Washington, D. C. 1-hour ozone nonattainment area. However, because the Lead Planning Organization (LPO) for the Richmond area has not yet been established, the State's commitment is contingent upon the review and discussion of these controls by this group. Measures that are formally selected in the Richmond area may be implemented by the summer of 2006. Beyond the controls mentioned above, the Virginia Legislature has initiated the evaluation of two additional ozone precursor control programs. First, a report and plan has been developed for the implementation of a remote-sensing program for vehicle emissions in several areas of Virginia, including Richmond. Second, the agency is currently working with interested parties and plans to support a utility bill similar to the North Carolina "Clean Smokestacks" program.

5.8 Conclusions

The following factors support the request for reclassification to marginal for the Richmond area: the design value of 94 ppb meets our criteria to qualify for consideration of bump down, local and regional modeling together with declining emissions from local, regional and national regulations support the conclusion that Richmond is likely to attain by 2007.

5.9 EPA Action

The request meets certain criteria EPA established (request, discontinuity, emission reductions, attainment, and data) and does not violate any of the criteria (trends). Therefore, EPA is approving the reclassification request for the Richmond area.

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.