State Implementation Plan Revision

Second Maintenance Plan
1997 Ozone National Ambient Air Quality Standards

Richmond-Petersburg, Virginia

List of Abbreviations

AIM	Architectural and Industrial Maintenance
CAA	Clean Air Act
CO	Carbon Monoxide
DEQ	Virginia Department of Environmental Quality
EGU	Electrical Generating Unit
EPA	Environmental Protection Agency
FIPS	Federal Identification Processing Standards
g/bhp-hr	Grams/Break Horsepower-Hour
IPM	Integrated Planning Model
LMP	Limited Maintenance Plan
MANE-VU	Mid-Atlantic/Northeast Visibility Union
MRAQC	Metropolitan Richmond Air Quality Committee
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NO_X	Nitrogen oxides
OTC	Ozone Transport Commission
OStd	Ozone Season Tons Per Day
ppb	parts per billion
ppm	parts per million
PTE	Potential to Emit
RFG	Reformulated Gasoline
SCR	Selective Catalytic Reduction
SIP	State Implementation Plan
tpd	Tons Per Day
tpOS	Tons Per Ozone Season
tpy	Tons Per Year
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

Table of Contents

1. Background 1
   1.1. Richmond-Petersburg 1997 Ozone Maintenance Area 2
   1.2. Limited Maintenance Plans 3
      1.2.1. LMP Qualification Criteria 5
      1.2.2. Components of an LMP 5
2. Richmond-Petersburg LMP Qualifications 7
3. Richmond-Petersburg Air Quality Monitoring Network and Data 7
4. Emissions Inventories 10
   4.1. Attainment Year Emissions Inventory 11
   4.2. Future Year Emissions Inventory 15
      4.2.1. Resource Document OSTD Summaries 15
      4.2.2. Base Year 2016 and Future Year Projections 20
   4.3. Control Programs 23
      4.3.1. Point Source Control Programs 23
      4.3.2. On-road and Non-road Emission Control Programs 24
         4.3.2.1. Reformulated Gasoline 24
         4.3.2.2. 2007 Heavy-Duty Highway Rule 25
         4.3.2.3. Tier 3 Motor Vehicle Emission and Fuel Standards 25
      4.3.3. Non-road Diesel Emissions Programs 26
      4.3.4. Area Source Controls 26
5. Air Quality Modeling Results 26
6. Contingency Measures 27
7. Conformity 29
   7.1. Transportation Conformity 29
   7.2. General Conformity 33
8. Maintenance Plan Sunset Date 35
9. Conclusion 35

List of Tables and Figures

Table 1: Jurisdictions Within The Richmond-Petersburg Ozone Maintenance Area 3
Table 2: Richmond-Petersburg Ozone Monitoring Locations 8
Table 3: 2014 Attainment Year NO_X Emissions Inventory, Richmond-Petersburg Maintenance Area 12
Table 4: Richmond-Petersburg 2014 NOx By Emissions Sector 13
Table 5: 2014 Attainment Year VOC Emissions Inventory, Richmond-Petersburg Maintenance Area 13
Table 6: Richmond-Petersburg 2014 VOC By Emissions Sector 15
Table 7: 2028 Attainment Year NO_X Emissions Inventory, Richmond-Petersburg Maintenance Area 16
Table 8: Richmond-Petersburg 2028 Projected NO_X By Emissions Sector 17
Table 9: 2028 Attainment Year VOC Emissions Inventory, Richmond-Petersburg Maintenance Area 17
Table 10: Richmond-Petersburg 2028 Projected VOC By Emissions Sector 19
Table 11: Richmond-Petersburg Jurisdictions Participating in the RFG Program 25
Table 12: RFG Program - Emissions Benefit 25
Table 13: 2023 Ozone Air Quality Projections, EPA 27
Table 14: 2028 Ozone Air Quality Projections, MANE-VU 27
Table 15: Contingency Measures for the Richmond-Petersburg Maintenance Area 28
Table 16: On-road Emissions Estimates for the Richmond-Petersburg Maintenance Area 31

Figure 1: Richmond-Petersburg Geographic Boundaries and Ozone Monitoring Sites .. 8
Figure 2: Richmond-Petersburg Ozone Air Quality Data (ppb) 9
Figure 3: Richmond-Petersburg Fourth-Highest, Eight-Hour Average Ozone (ppb) 10
Figure 4: Richmond-Petersburg 2014 and Projected 2028 Ozone Season Daily Emissions 20
Figure 5: NO_X Emissions in the Richmond-Petersburg Area 21
Figure 6: VOC Emissions in the Richmond-Petersburg Area 21
Figure 7: NO_X tpd for the Richmond-Petersburg Area 22
Figure 8: VOC tpd for the Richmond-Petersburg Area 22

1. Background

The redesignation process provides that a state may petition the U.S. Environmental Protection Agency (EPA) to redesignate a nonattainment area as attainment for the ozone National Ambient Air Quality Standards (NAAQS). Among other criteria, a redesignation is subject to § 107(d)(3)(E) of the federal Clean Air Act (CAA), which stipulates that EPA must fully approve a maintenance plan that meets the requirements of § 175A. The maintenance plan constitutes a state implementation plan (SIP) revision and must provide for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation, including additional measures to ensure prompt correction of any violation of the NAAQS. The state must also submit a SIP revision eight years after the original redesignation request is approved to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period.

EPA established ozone NAAQS in 1979, 1997, 2008, and 2015. Each ozone NAAQS was more protective of public health than the previous. As part of its strategy to implement the ozone NAAQS, EPA revoked the 1997 ozone NAAQS on April 5, 2015, and issued regulations indicating that states were no longer responsible for developing and submitting maintenance plans for current and former 1997 ozone NAAQS nonattainment areas. Various parties challenged the application of this provision to areas that were redesignated to maintenance for the 1997 ozone NAAQS and initially designated attainment for the 2008 ozone NAAQS. The U.S. Court of Appeals for the D.C. Circuit issued its decision on this issue in South Coast Air Quality Management District v. EPA (South Coast II) on February 16, 2018.[1] The court found that EPA cannot waive the 1997 ozone maintenance plan requirements for these maintenance areas even if the standard has been revoked. As a result, states with areas that were redesignated to attainment for the 1997 ozone NAAQS and were initially designated attainment for the 2008 ozone NAAQS are required to develop and submit a second maintenance plan SIP revision to ensure that the area attains the standard through the end of the 20-year period from redesignation.

Beyond the general requirements of § 175A, the CAA does not further define the details of a maintenance plan, and EPA has authority to exercise discretion to determine those specific requirements. For regions monitoring air quality that is well below a NAAQS, EPA has interpreted § 175A(b) to indicate that an area can provide for maintenance of the NAAQS if the area meets certain air quality-related criteria rather than using projected emissions inventories or air quality modeling showing continued maintenance until the end of the maintenance period. This limited maintenance plan (LMP) option applies to areas with little risk of a future violation of a standard. Continued applicability of Prevention of Significant Deterioration permitting requirements, any control measures already in the SIP, and the continued application of federal measures provide adequate assurance of maintenance in LMP areas.

[1] https://www.cadc.uscourts.gov/internet/opinions.nsf/217B6778AE3EC89C8525823600532AE0/$file/15-1115-1718293.pdf

The Richmond-Petersburg 1997 ozone maintenance area qualifies for addressing its second maintenance plan through an LMP for two reasons. First, the area enjoys healthy air quality that is significantly below the 1997 ozone NAAQS. Second, trends in both projected emissions and ozone concentrations demonstrate that the area's air quality will continue to improve rather than degrade. This second maintenance plan developed under the LMP process demonstrates that the area will continue to remain in compliance with the 1997 ozone NAAQS through an additional 10 year period, until December 31, 2028. In the unlikely situation where an air quality monitor registers an exceedance or violation of the 1997 ozone NAAQS, this LMP includes contingency measures to be implemented to promptly correct the exceedance or violation.

1.1. Richmond-Petersburg 1997 Ozone Maintenance Area

EPA designated the Richmond area as moderate nonattainment for the 1979 ozone NAAQS on November 6, 1991 (56 FR 56694). The 1979 ozone NAAQS set the ozone standard at 0.12 parts per million (ppm) or 124 parts per billion (ppb) over a one-hour average. The Richmond nonattainment area consisted of the cities of Colonial Heights, Hopewell, and Richmond, and the counties of Hanover, Henrico, Chesterfield, and Charles City. The area's air quality improved, and the Metropolitan Richmond Air Quality Committee (MRAQC), the local planning organization certified under § 174 of the CAA, submitted a redesignation request and maintenance plan to EPA. These documents were subsequently approved on November 17, 1997 (62 FR 61237). The maintenance plan contained area-wide emission caps, mobile source budgets, and contingency measures.

On April 30, 2004 (69 FR 23941), EPA designated the area as moderate nonattainment for the 1997 ozone NAAQS, which was set at a level of 0.08 ppm or 84 ppb on an 8-hour average. EPA also expanded the area to include the city of Petersburg and the county of Prince George. Again, the area implemented a number of control measures that resulted in significant improvements in ozone air quality, and MRAQC developed and submitted a redesignation request and a maintenance plan. As part of this maintenance plan, Virginia requested that EPA supersede the 1979 ozone maintenance plan with the 1997 ozone maintenance plan, and approve the 1997 ozone maintenance plan as meeting the requirements of § 175(A)(b) with respect to the 1979 ozone maintenance plan update. EPA published final approval of the redesignation request and maintenance plan on June 1, 2007 (72 FR 30485) and redesignated the area as attainment/maintenance for the 1997 ozone NAAQS.

On May 21, 2012 (77 FR 30088), EPA designated the area as attainment for the 2008 ozone NAAQS, which was set at a standard of 0.075 ppm or 75 ppb. Table 1 provides the jurisdiction names and federal identification processing standards (FIPS) codes for those jurisdictions in the 1997 ozone NAAQS attainment maintenance area and the 2008 ozone NAAQS attainment area.

Table 1: Jurisdictions Within The Richmond-Petersburg Ozone Maintenance Area

Name	FIPS Code
Charles City County	51-036
Chesterfield County	51-041
Hanover County	51-085
Henrico County	51-087
Prince George County	51-149
City of Colonial Heights	51-570
City of Hopewell	51-670
City of Petersburg	51-730
City of Richmond	51-760

To help ensure that air quality would remain compliant with the 2008 ozone NAAQS, the Virginia Department of Environmental Quality (DEQ), local elected officials, and other stakeholders worked cooperatively to create an Ozone Advance Action Plan, which was submitted to EPA on April 22, 2013. The Ozone Advance Action Plan provided data demonstrating that emissions in the Richmond-Petersburg maintenance area would continue to decrease through 2020 and that ozone air quality in the area would also continue to improve. The plan contained information on new and on-going programs that resulted in these emission reductions. The plan also contained a five-year commitment to report annually on these efforts as well as the status of the region's air quality. DEQ submitted these reports in a timely manner and concluded the program at the end of the five year period.

On November 16, 2017 (82 FR 54232), EPA designated the area as attainment for the 2015 ozone NAAQS, which was set at a standard of 0.070 ppm or 70 ppb.

EPA did not require a second maintenance plan in accordance with § 175A(b) for the 1997 ozone NAAQS, and Virginia had no obligation to submit a redesignation request and maintenance plan for the 2008 ozone NAAQS or the 2015 ozone NAAQS due to good air quality and an initial designation of attainment for those NAAQS. However, due to the South Coast II decision, the Commonwealth is now submitting this second 10-year maintenance plan to demonstrate how the area will continue to maintain air quality that complies with the 1997 ozone NAAQS. This maintenance plan will be effective through December 31, 2028. After December 31, 2028, general conformity requirements and transportation conformity requirements will no longer apply to the region. Other control programs will remain in place unless otherwise demonstrated to not be needed for compliance with the 1997 ozone NAAQS.

1.2. Limited Maintenance Plans

The requirements of § 175A(b) of the CAA call for a second maintenance plan that will ensure good air quality for at least 10 years beyond the first maintenance plan's end date:

> §175A(b): SUBSEQUENT PLAN REVISIONS. – 8 years after redesignation of any area as an attainment area under section 107(d), the State shall submit to the Administrator an additional revision of the applicable State implementation plan for maintain the national primary ambient air quality standard for 10 years after the expiration of the 10-year period referred to in subsection (a).

The attainment year in the first maintenance plan for the 1997 ozone NAAQS was 2005. The plan used an interim year of 2011 and an outyear of 2018 to demonstrate that emissions would remain beneath the attainment year inventory, and thus, ozone air quality would not degrade. Since the plan expired in 2018, the second maintenance plan must show how the area will continue attaining the 1997 ozone NAAQS through 2028.

Section 175A provides the general framework for maintenance plans. The maintenance plan must provide for maintenance of the NAAQS for at least 10 years after redesignation, including any additional control measures as may be necessary to ensure maintenance. Also, maintenance plans are to contain contingency provisions as necessary to assure prompt correction of a violation of the NAAQS occurring after redesignation. The contingency measures must include, at a minimum, a requirement that the state will implement all control measures contained in the nonattainment SIP prior to redesignation. Beyond these requirements, the CAA does not define the content of a maintenance plan, and EPA has authority to exercise reasonable discretion to determine those requirements. For regions monitoring air quality that complies with and is well beneath a NAAQS, EPA has interpreted § 175A(b) to indicate that an area can provide for maintenance of the NAAQS if the area meets certain air quality-related criteria rather than using projected missions inventories or air quality modeling showing continued maintenance until the end of the maintenance period. EPA discusses LMPs in four guidance documents:

- Resource Document for 1997 Ozone NAAQS Areas: Supporting Information for States Developing Maintenance Plans, November 20, 2018 (resource document).[2]

- Limited Maintenance Plan Option for Moderate PM10 Nonattainment Areas, August 9, 2001 (PM_{10} LMP guidance).[3]

- Limited Maintenance Plan Option for Nonclassifiable Carbon Monoxide Nonattainment Areas, October 6, 1995 (CO LMP guidance).[4]

[2] https://www.epa.gov/sites/production/files/2018-11/documents/ozone_1997_naaqs_lmp_resource_document_nov_20_2018.pdf
[3] https://www.epa.gov/sites/production/files/2016-06/documents/2001lmp-pm10.pdf
[4] https://www.epa.gov/sites/production/files/2016-06/documents/1995lmp-co.pdf

- Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas, November 16, 1994 (ozone LMP guidance).[5]

The LMP option applies to areas with little risk of a future violation of a standard. Continued applicability of the Prevention of Significant Deterioration permitting requirements, any control measures already in the SIP, and the continued application of federal measures provide adequate assurance of maintenance in LMP areas.

1.2.1. LMP Qualification Criteria

The ozone LMP guidance allows states to develop LMPs for nonattainment areas that are nonclassifiable and where the monitored air quality is equal to or less than 85% of the exceedance levels of the ozone NAAQS. EPA does not require states to develop full maintenance plans in these areas because they have achieved air quality levels well below the standard without the application of control measures required by the CAA for classified ozone nonattainment areas. Additionally, the areas do not have either a recent history of monitored violations of the ozone NAAQS nor a long prior history of monitored air quality problems.

The ozone LMP guidance considers the 1979 ozone NAAQS and states that the ozone design values for LMP areas must be at or below 0.106 ppm, equivalent to 85% of 0.125 ppm. Until the LMP is fully approved by EPA, the design value for the area must remain below 0.106. Otherwise, the state must submit a full maintenance plan.

The resource document notes that states have submitted, and that EPA has approved, LMPs for NAAQS other than those listed in the guidance documents. The resource document also specifies that the air quality level to determine whether or not the use of an LMP is appropriate for the 1997 ozone NAAQS is 0.071 ppm, equivalent to 85% of 0.084 ppm. The resource document lists 35 areas remaining designated as nonattainment for the 1997 ozone NAAQS and 80 former nonattainment areas that had been redesignated to attainment and were also initially designated attainment for the 2008 ozone NAAQS. EPA included the Richmond-Petersburg maintenance area in the latter list. Additionally, air quality data should not reflect highly variable values during preceding years, and air quality trends analyses should demonstrate stable or improving values. EPA evaluates each LMP submission on a case-by-case basis, taking into consideration the weight of evidence of the presented information.

1.2.2. Components of an LMP

A full maintenance plan contains an emissions or modeling demonstration that shows how the area will stay in compliance through the 10-year maintenance period. Either demonstration requires a projected emissions inventory. However, an area meeting the LMP qualification criteria is at little risk of violating the standard since emissions are not expected to grow sufficiently to threaten maintenance of the standard. Upon approval of an LMP, EPA concludes that an emissions budget may be treated as not constraining

[5] https://archive.epa.gov/ozonedesignations/web/pdf/11-16-94limitedmain.pdf

for the length of the maintenance period because an area's growth could not reasonably be expected to overtake emission reductions and degrade air quality to the point where the area violates the 1997 ozone NAAQS. When an area meets the criteria for an LMP, the maintenance demonstration is presumed to be satisfied, and EPA does not require states to project emissions over the maintenance period.

The LMP must contain a commitment to continue operating an EPA-approved air quality monitoring network that operates in accordance with 40 CFR Part 58 for verification of continued attainment. This commitment is an important component of the LMP since areas use air quality monitoring data in lieu of a cap on emissions.

Section 175A of the CAA requires that a maintenance plan include contingency provisions to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plan is an enforceable part of the SIP and must ensure that the state adopts the contingency measures expeditiously once they are triggered by a specified event. The contingency plan must identify the measures to be promptly adopted and provide a schedule and procedure for adoption and implementation of the measures. The plan must also identify specific indicators, or triggers, to determine when the contingency measures need to be implemented. A violation of the NAAQS is an acceptable trigger; however, the LMP may include a pre-violation action level as a trigger such as an exceedance of the NAAQS. By taking early action, a state may be able to prevent any violation of the NAAQS and eliminate any need for EPA to redesignate the area back to nonattainment. The contingency plan must also include a requirement that the state will continue to implement all measures with respect to control of the pollutant or its precursors for the area that were contained in the SIP prior to the redesignation.

Virginia's transportation conformity (9VAC5 Chapter 151) and general conformity (9VAC5 Chapter 160) requirements apply to maintenance areas operating under maintenance plans. One means of demonstrating conformity for federal actions is to develop a regional emissions analysis demonstrating that expected emissions from planned actions are beneath the emissions budget for the area. In LMPs, emission budgets are not constraining for the length of the maintenance period because air quality data are well beneath the NAAQS. When an area's growth in transportation or other economic activity cannot reasonably be expected to cause a violation of the NAAQS in question and the area uses an LMP to demonstrate maintenance with a NAAQS, EPA's and Virginia's SIP-approved transportation conformity rules do not require a regional emissions analysis to determine whether the region's long-range transportation plan and short-term transportation improvement program conform to the maintenance plan. Other transportation conformity requirements such as consultation between agencies on air quality impacts of transportation projections still apply. Likewise, for general conformity determinations, no regional emissions analysis for comparison to the emissions budget is necessary so long as air quality monitoring data continue to reflect compliance with the NAAQS.

States may supply supporting information within an LMP. Such supporting data may consist of ambient air quality data trends analyses, any available air quality modeling data showing future year projections for the area, emissions inventory data and trends, and other available information.

2. Richmond-Petersburg LMP Qualifications

The Richmond-Petersburg second maintenance plan is able to follow the LMP format since the area meets the qualifications for the use of the LMP approach. The resource document lists the Richmond-Petersburg area as a maintenance area for the 1997 ozone NAAQS and an attainment area for the 2008 ozone NAAQS. The current design value for the area, based on air quality monitoring data from 2017-2019, is 0.065 ppm. The value of 0.065 ppm is equivalent to 77.4% of the maximum compliance value of the 1997 ozone NAAQS (0.084 ppm) and therefore is less than the 85% value needed to qualify for use of an LMP. Section 3 provides an overview of the Richmond-Petersburg monitoring network as well as historical ozone air quality data for the region.

The resource document suggests that one appropriate demonstration of stable or improving trends is to add the most recent design value for the area to the maximum design value increase over one or more consecutive years that has been observed in the area in the recent past. If the sum of these values does not exceed the level of the 1997 ozone NAAQS, the area may reasonably expect continued attainment. As shown in Section 3, the maximum increase in eight-hour average design values for the Richmond-Petersburg maintenance area is 0.004 ppm. This increase occurred between 2004-2006 and 2005-2007. It also occurred in 2009-2011 and 2010-2012. In these occurrences, the particularly cool, wet years of 2004 and 2009 dropped out of the three-year average, and the particularly hot, dry years of 2007 and 2012 replaced those values, resulting in the increases. The general data trend for the air quality data in the area is steadily declining, as demonstrated in Section 3. The sum of the current design value of 0.065 ppm and 0.004 ppm is 0.069 ppm, which is well beneath the 1997 ozone NAAQS.

Based on this data, the Richmond-Petersburg may use the LMP format for the second maintenance plan addressing the 1997 ozone NAAQS.

3. Richmond-Petersburg Air Quality Monitoring Network and Data

The Commonwealth of Virginia commits to maintaining and operating an appropriate air quality monitoring network in accordance with 40 CFR Part 58 to verify the area's attainment status with the 1997 ozone NAAQS. Ozone air quality data is available on the DEQ website and reported to EPA's Air Quality System in a timely fashion. Virginia will review air quality monitoring data to ensure the data continue to comply with the 1997 ozone NAAQS.

Currently, the area has four sites monitoring ozone, identified in Table 2. Figure 1, which shows the geographical boundaries of cities in green and of the counties in blue, identifies the location of each monitoring site with a red triangle. These monitoring sites have been in existence for more than a decade and provide a long-term record of air quality improvement in the area.

Table 2: Richmond-Petersburg Ozone Monitoring Locations

EPA Identification Number	Station Number	Jurisdiction	Latitude	Longitude
51-041-0004	71-H	Chesterfield County	37.35748	-77.59355
51-087-0014	72-M	Henrico County	37.55652	-77.40027
51-085-0003	73-E	Hanover County	37.60613	-77.21880
51-036-0002	75-B	Charles City County	37.34438	-77.25925

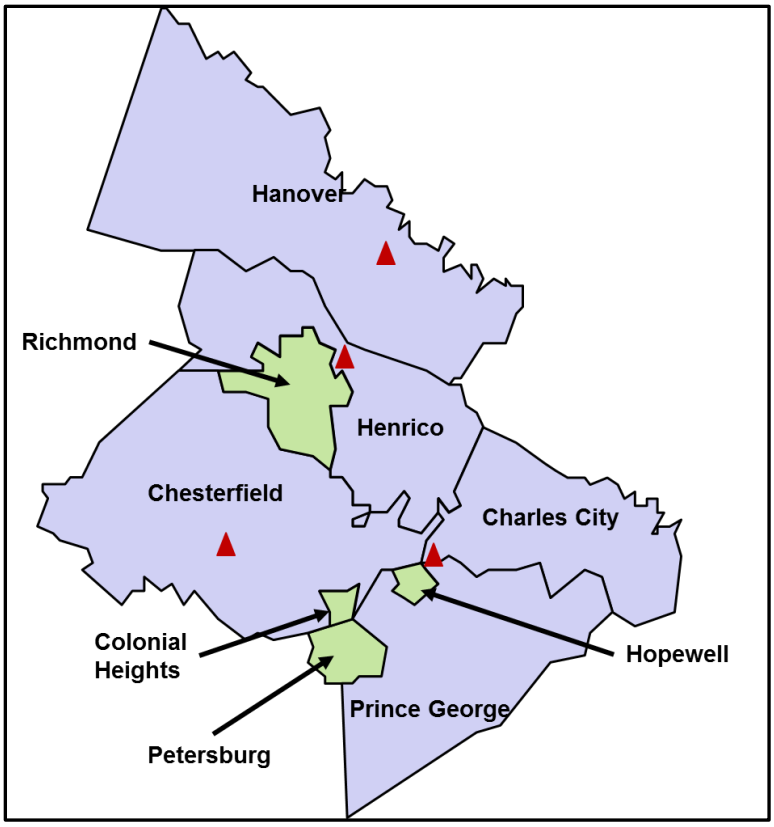


Figure 1: Richmond-Petersburg Geographic Boundaries and Ozone Monitoring Sites

Figure 2 shows the air quality monitoring data for each of the four ozone monitoring sites in the area. The data show that the area has made remarkable air quality improvements since 2001-2003. In 2001-2003, the 8-hour design value for the area

was 0.094 ppm. In 2003-2005, which corresponds to the 2005 attainment year used in the first maintenance plan, the area had a design value of 0.081 ppm and therefore complied with the 1997 ozone NAAQS. The area has been continuously meeting the 1997 ozone NAAQS since the 2007-2009 design value measurements, a period of 10 years.

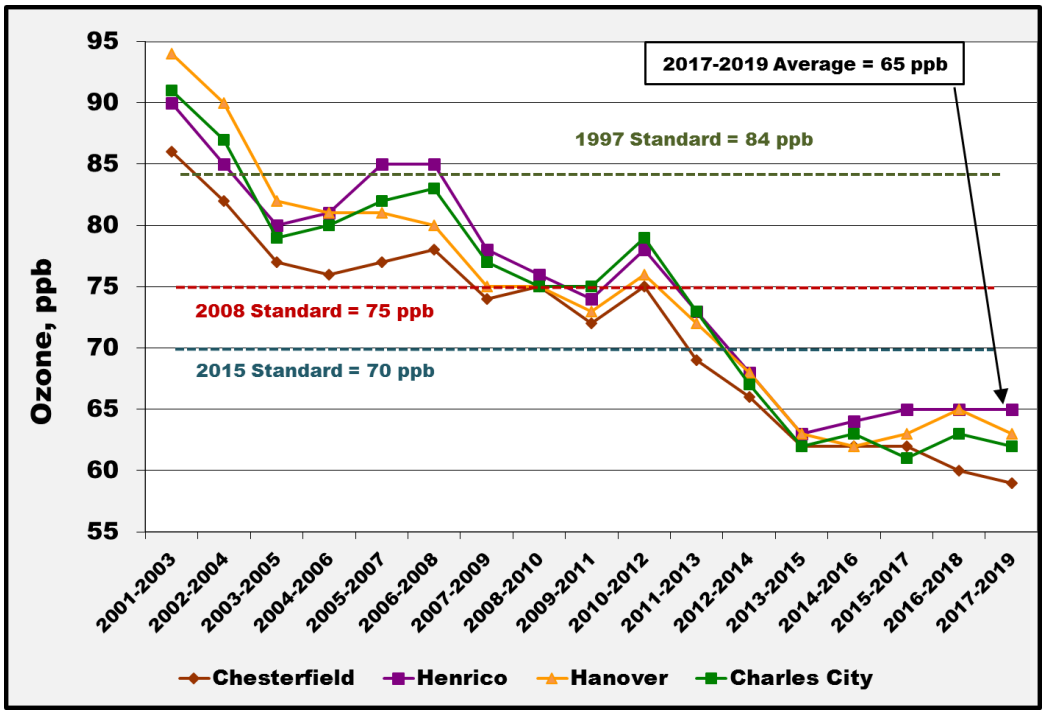
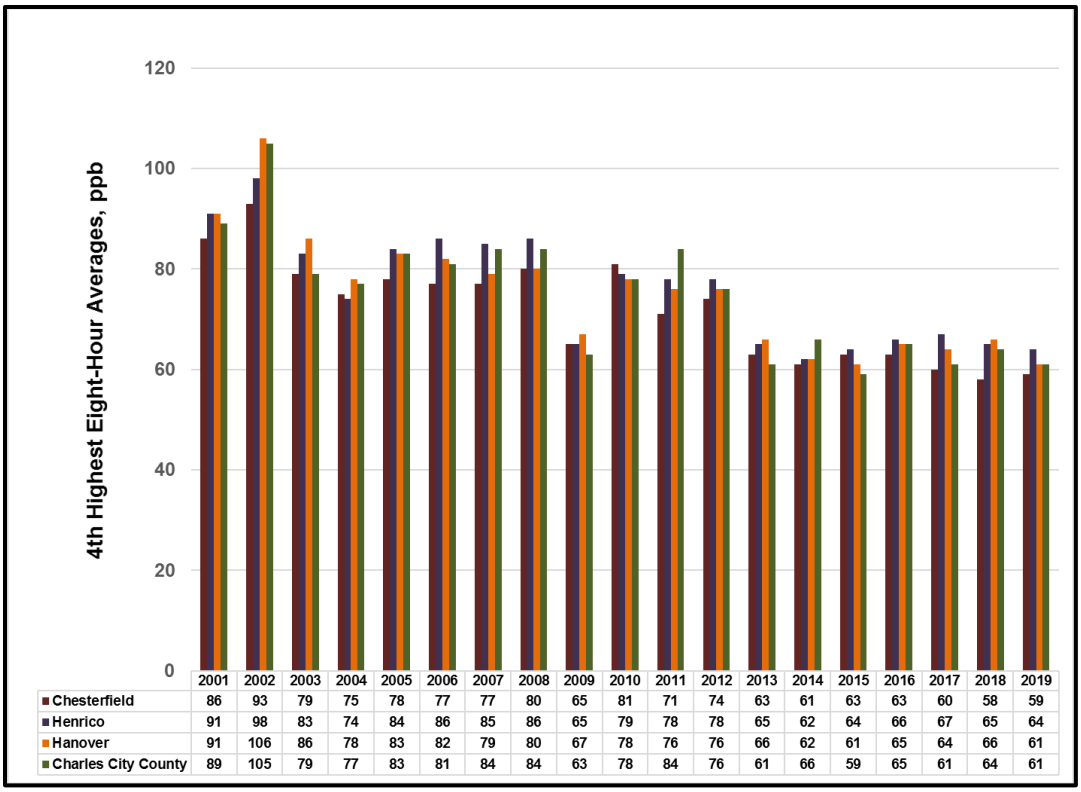


Figure 2: Richmond-Petersburg Ozone Air Quality Data (ppb)

Figure 3 shows the fourth-highest, eight-hour average for each monitoring site in the Richmond-Petersburg maintenance area between 2001 and 2019. During this timeframe, annual fourth-highest values at each monitor have dropped significantly. Annual fourth-highest values are more likely to be influenced by meteorology than are three-year average design values. The 2001-2019 timeframe includes historically wet summers such as 2009 and 2017, where conditions were less conducive to ozone formation, and historically hot, dry summers, such as 2002, 2012, and 2016, where conditions were more favorable to ozone formation. Trends for each monitoring site show a steady decline in annual fourth-highest average values even with significant differences in meteorology between the years.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Chesterfield	86	93	79	75	78	77	77	80	65	81	71	74	63	61	63	63	60	58	59
Henrico	91	98	83	74	84	86	85	86	65	79	78	78	65	62	64	66	67	65	64
Hanover	91	106	86	78	83	82	79	80	67	78	76	76	66	62	61	65	64	66	61
Charles City County	89	105	79	77	83	81	84	84	63	78	84	76	61	66	59	65	61	64	61

Figure 3: Richmond-Petersburg Fourth-Highest, Eight-Hour Average Ozone (ppb)

The largest increase in annual fourth-highest values was 0.016 ppm between 2001, which had a fourth-highest eight-hour average of 0.089 ppm, and 2002, which has a fourth-highest eight-hour average of 0.105 ppm, at the Charles City County monitor. Since an ozone design value is a three-year average, the 0.016 ppm annual increase equates to a 0.0053 ppm increase (one third of the annual increase) for the design value. Currently, such an increase is highly unlikely to occur due to the numerous control programs such as the NO_X Budget Trading Program, the Cross-State Air Pollution Rule, Tier II and Tier III vehicle standards, and the 2007 Heavy Duty Diesel Rule that became effective after 2002. However, should this increase be applied to the highest 2018 value of 0.066 ppm, registered at the Hanover monitor, the fourth-highest value would be 0.0713 ppm. Such an increase would not trigger an exceedance of the 1997 ozone NAAQS and demonstrates that an exceedance or violation of the 1997 ozone NAAQS in the area is highly unlikely to occur.

4. Emissions Inventories

The ozone LMP guidance requires that the second maintenance plan contain an attainment inventory with emission levels consistent with attainment of the 1997 ozone NAAQS. This inventory must be consistent with EPA's most recent guidance on emissions inventories for nonattainment areas and should represent emissions during the period associated with the monitoring data showing attainment. The inventory must be based on actual "typical summer day" emissions of volatile organic compounds

(VOC) and nitrogen oxides (NO_X). These pollutants are the principle precursors to ozone formation. When EPA approves an LMP, EPA concludes that an ozone precursor emission budget is not necessary to constrain an area for the length of the maintenance period because the area is highly unlikely to experience so much growth in that period that a violation of the ozone NAAQS would result. Therefore, EPA requires an attainment emissions inventory but does not require that a future year inventory be developed and compared to the attainment emissions inventory to ensure compliance with an attainment year emissions cap. As described in Section 3, the area's air quality is substantially better than the 1997 ozone NAAQS, and an exceedance or violation of the 1997 ozone NAAQS is highly unlikely.

4.1. Attainment Year Emissions Inventory

In the resource document, EPA provides emissions inventory data for 2014. These data represent annual and summer season NO_X and VOC emissions. EPA includes annual emissions in units of tons per year (tpy), ozone season emissions in units of tons per ozone season (tpOS), and daily summertime emissions in units of tons per day (tpd). The basis for these data is the EPA 2014 modeling platform, which is derived from the most recently available National Emissions Inventory (NEI) for year 2014.[6]

The design values for the Richmond-Petersburg maintenance area for each of the three-year averages containing 2014 are 0.068 ppm for 2012-2014, 0.063 ppm for 2013-2015, and 0.064 ppm for 2014-2016. Since these values are well beneath the 1997 ozone NAAQS of 0.08 ppm, the 2014 emissions inventory is a suitable inventory to use as an attainment inventory for this second maintenance plan.

Table 3 provides the 2014 anthropogenic NO_X emissions inventory for the jurisdictions located within the Richmond-Petersburg maintenance area. Emissions from each jurisdiction are broken down by emissions sector. Table 4 provides the 2014 anthropogenic NO_X emissions inventory summed by emissions sector. Table 5 provides the 2014 anthropogenic VOC emissions inventory for the jurisdictions located within the maintenance area. The VOC emissions from each jurisdiction are broken down by emissions sector. Table 6 provides the 2014 anthropogenic VOC emissions inventory summed by emissions sector. The fire emissions sector includes emissions from agricultural burning, prescribed fires, wild fires, and other types of fires. The nonpoint emissions sector includes emissions from equipment, operations, and activities that are numerous and in total have significant emissions. Examples include emissions from commercial and consumer products, portable fuel containers, home heating, repair and refinishing operations, and crematories. The non-road emissions sector includes emissions from engines that are not primarily used to propel transportation equipment, such as generators, forklifts, and marine pleasure craft. The on-road emissions sector includes emissions from engines used primarily to propel equipment on highways and other roads, including passenger vehicles, motorcycles, and heavy duty diesel trucks. The point source sector includes large industrial

[6] https://www.epa.gov/air-emissions-modeling/2014-version-70-platform

operations that are relatively few in number but have large emissions, such as kraft mills, electrical generating units (EGUs), and pharmaceutical factories.

Table 3: 2014 Attainment Year NO_X Emissions Inventory, Richmond-Petersburg Maintenance Area

Jurisdiction	Emissions Sector	2014 Annual NO_X Emissions, tpy	2014 Summer Season NO_X Emissions, tpOS	2014 Summertime Daily NO_X Emissions, tpd
Charles City County	Fire	0.52	-	-
Charles City County	Nonpoint	104.61	42.02	0.27
Charles City County	Non-road	89.63	54.02	0.35
Charles City County	On-road	119.74	46.04	0.30
Charles City County	Point	152.47	67.83	0.44
Charles City County	***Subtotal***	***466.97***	***209.91***	***1.37***
Chesterfield County	Fire	1.36	0.96	0.01
Chesterfield County	Nonpoint	899.35	285.20	1.86
Chesterfield County	Non-road	774.22	358.88	2.35
Chesterfield County	On-road	3,861.33	1,478.11	9.66
Chesterfield County	Point	3,182.69	1,292.02	8.44
Chesterfield County	***Subtotal***	***8,718.95***	***3,415.17***	***22.32***
Colonial Heights	Fire	--	--	--
Colonial Heights	Nonpoint	43.47	13.22	0.09
Colonial Heights	Non-road	16.49	7.53	0.05
Colonial Heights	On-road	318.05	123.05	0.80
Colonial Heights	Point	--	--	--
Colonial Heights	***Subtotal***	***378.01***	***143.81***	***0.94***
Hanover County	Fire	4.30	1.15	0.01
Hanover County	Nonpoint	473.39	165.37	1.08
Hanover County	Non-road	427.93	209.64	1.37
Hanover County	On-road	2,864.94	1,099.31	7.19
Hanover County	Point	769.57	300.56	1.96
Hanover County	***Subtotal***	***4,540.13***	***1,776.04***	***11.61***
Henrico County	Fire	0.16	-	-
Henrico County	Nonpoint	969.46	312.52	2.04
Henrico County	Non-road	1,127.43	515.40	3.37
Henrico County	On-road	4,243.38	1,623.74	10.61
Henrico County	Point	441.00	192.69	1.26
Henrico County	***Subtotal***	6,781.42	2,644.34	17.28
Hopewell	Fire	---	---	---
Hopewell	Nonpoint	25.44	5.92	0.04
Hopewell	Non-road	29.42	13.57	0.09
Hopewell	On-road	218.40	84.62	0.55
Hopewell	Point	9,663.22	4,073.45	26.62
Hopewell	***Subtotal***	***9,936.48***	***4,177.56***	***27.30***
Petersburg	Fire	0.03	<0.01	<0.01
Petersburg	Nonpoint	192.94	73.34	0.48
Petersburg	Non-road	34.77	15.09	0.10

Jurisdiction	Emissions Sector	2014 Annual NO_X Emissions, tpy	2014 Summer Season NO_X Emissions, tpOS	2014 Summertime Daily NO_X Emissions, tpd
Petersburg	On-road	599.22	236.28	1.54
Petersburg	Point	61.48	25.77	0.17
Petersburg	***Subtotal***	***888.44***	***350.48***	***2.29***
Prince George County	Fire	11.21	4.80	0.03
Prince George County	Nonpoint	268.04	102.36	0.67
Prince George County	Non-road	139.14	74.11	0.48
Prince George County	On-road	1,063.19	420.39	2.75
Prince George County	Point	52.88	22.17	0.14
Prince George County	***Subtotal***	***1,534.46***	***623.81***	***4.08***
Richmond	Fire	---	---	---
Richmond	Nonpoint	627.14	204.44	1.34
Richmond	Non-road	300.31	133.08	0.87
Richmond	On-road	2,814.38	1,084.93	7.09
Richmond	Point	1,749.88	697.43	4.56
Richmond	***Subtotal***	***5,491.70***	***2,119.87***	***13.86***
Richmond-Petersburg	***Total***	***38,736.56***	***15,460.99***	***101.05***

Table 4: Richmond-Petersburg 2014 NOx By Emissions Sector

Emissions Sector	2014 Annual NO_X Emissions, tpy	2014 Summer Season NO_X Emissions, tpOS	2014 Summertime Daily NO_X Emissions, tpd
Fire	17.60	6.91	0.05
Nonpoint	3,603.83	1,204.39	7.87
Non-road	2,939.34	1,381.31	9.03
On-road	16,102.63	6.196.46	40.50
Point	16,073.19	6,671.91	43.61
Total	***38,736.56***	***15,460.99***	***101.05***

Table 5: 2014 Attainment Year VOC Emissions Inventory, Richmond-Petersburg Maintenance Area

Jurisdiction	Emissions Sector	2014 Annual VOC Emissions, tpy	2014 Summer Season VOC Emissions, Tons/OS	2014 Summertime Daily VOC Emissions, tpd
Charles City County	Fire	5.00	---	---
Charles City County	Nonpoint	143.26	57.31	0.37
Charles City County	Non-road	209.28	139.55	0.91
Charles City County	On-road	79.00	32.29	0.21
Charles City County	Point	93.72	41.55	0.27
Charles City County	***Subtotal***	530.26	270.70	1.77
Chesterfield County	Fire	15.90	12.04	0.08
Chesterfield County	Nonpoint	3,506.09	1,392.65	9.10
Chesterfield County	Non-road	729.67	397.41	2.60

Jurisdiction	Emissions Sector	2014 Annual VOC Emissions, tpy	2014 Summer Season VOC Emissions, Tons/OS	2014 Summertime Daily VOC Emissions, tpd
Chesterfield County	On-road	2,281.03	932.18	6.09
Chesterfield County	Point	1,190.68	501.33	3.28
Chesterfield County	***Subtotal***	7,723.37	3,235.61	21.15
Colonial Heights	Fire	---	---	---
Colonial Heights	Nonpoint	178.45	72.90	0.48
Colonial Heights	Non-road	24.46	13.36	0.09
Colonial Heights	On-road	149.72	61.86	0.40
Colonial Heights	Point	---	---	---
Colonial Heights	***Subtotal***	352.62	148.12	0.97
Hanover County	Fire	42.46	11.51	0.08
Hanover County	Nonpoint	1,527.69	588.96	3.85
Hanover County	Non-road	597.92	316.85	2.07
Hanover County	On-road	957.88	392.27	2.56
Hanover County	Point	548.55	221.54	1.45
Hanover County	***Subtotal***	3,674.50	1,531.13	10.01
Henrico County	Fire	1.51	-	-
Henrico County	Nonpoint	3,244.61	1,306.12	8.54
Henrico County	Non-road	563.45	289.20	1.89
Henrico County	On-road	2,191.31	895.34	5.85
Henrico County	Point	100.53	44.13	0.29
Henrico County	***Subtotal***	6,101.40	2,534.80	16.57
Hopewell	Fire			
Hopewell	Nonpoint	193.33	79.04	0.52
Hopewell	Non-road	45.30	24.28	0.16
Hopewell	On-road	167.75	68.87	0.45
Hopewell	Point	906.35	379.41	2.48
Hopewell	***Subtotal***	1,312.73	551.59	3.61
Petersburg	Fire	0.26	0.02	0.00
Petersburg	Nonpoint	463.14	190.66	1.25
Petersburg	Non-road	38.72	21.17	0.14
Petersburg	On-road	306.23	129.14	0.84
Petersburg	Point	4.40	1.85	0.01
Petersburg	***Subtotal***	812.77	342.83	2.24
Prince George County	Fire	111.89	47.48	0.31
Prince George County	Nonpoint	413.77	157.37	1.03
Prince George County	Non-road	290.03	180.52	1.18
Prince George County	On-road	374.29	158.34	1.03
Prince George County	Point	4.47	1.89	0.01
Prince George County	***Subtotal***	1,194.44	545.60	3.57
Richmond	Fire	---	---	---
Richmond	Nonpoint	2,437.88	1,008.08	6.59
Richmond	Non-road	406.45	210.17	1.37
Richmond	On-road	1,644.71	672.90	4.40
Richmond	Point	441.38	194.35	1.27

Jurisdiction	Emissions Sector	2014 Annual VOC Emissions, tpy	2014 Summer Season VOC Emissions, Tons/OS	2014 Summertime Daily VOC Emissions, tpd
Richmond	***Subtotal***	4,930.42	2,085.50	13.63
Richmond-Petersburg	***Total***	26,632.51	11,245.87	73.50

Table 6: Richmond-Petersburg 2014 VOC By Emissions Sector

Emissions Sector	2014 Annual VOC Emissions, tpy	2014 Summer Season VOC Emissions, Tons/OS	2014 Summertime Daily VOC Emissions, tpd
Fire	177.02	71.04	0.46
Nonpoint	12,108.22	4,853.12	31.72
Non-road	2,905.29	1,592.49	10.41
On-road	8,141.91	3,343.18	21.85
Point	3,290.07	1,386.04	9.06
Total	***26,632.51***	***11,245.87***	***73.50***

Based on these 2014 data, the emissions sectors responsible for the most NO_X emissions in the maintenance area are the point emissions sector (43.61 tpd) followed closely by the on-road emissions sector (40.50 tpd). The emissions sectors responsible for the most VOC emissions in the area are the nonpoint sector (31.72 tpd) and then the on-road sector (21.85 tpd). At these levels of emissions, the area's monitored ozone concentrations are well beneath the 1997 ozone NAAQS level of 0.08 ppm.

4.2. Future Year Emissions Inventory

The ozone LMP guidance does not require a future-year emission inventory to demonstrate continued maintenance of emissions levels, and therefore ozone concentrations, going forward. The difference between the actual monitored data and the standard is large enough to make a violation of the standard highly unlikely. Where such information is available, however, such data can provide further support for the assertion that an area will continue to maintain compliance with a particular standard. The following sections discuss existing data sets and how they validate the assertion that the Richmond-Petersburg area's future ozone air quality will continue to be healthy.

4.2.1. Resource Document Ozone Season Tons Per Day (OSTD) Summaries

In the resource document, EPA projected the 2028 emissions inventory from the EPA 2011 version 6.3 modeling platform.[7] As noted in the resource document, the 2028 projected emissions inventory does not use identical methodology for all source sectors as compared to the 2014 NEI data. However, the 2028 projected emissions inventory is useful to show the general trends in expected emissions within an area.

[7] https://www.epa.gov/air-emissions-modeling/2011-version-62-platform

Table 7 provides the 2028 anthropogenic NO_X emissions inventory. Emissions from each jurisdiction are broken down by emissions sector. Table 8 provides the 2028 anthropogenic NO_X emissions inventory summed by emissions sector. Table 9 provides the 2028 anthropogenic VOC emissions inventory. The VOC emissions from each jurisdiction are broken down by emissions sector. Table 10 provides the 2028 anthropogenic VOC emissions inventory summed by source sector.

Table 7: 2028 Attainment Year NO_X Emissions Inventory, Richmond-Petersburg Maintenance Area

Jurisdiction	Emissions Sector	2028 Annual NO_X Emissions, tpy	2028 Summer Season NO_X Emissions, Tons/OS	2028 Summertime Daily NO_X Emissions, tpd
Charles City County	Fire	2.05	1.00	0.01
Charles City County	Nonpoint	52.17	20.12	0.13
Charles City County	Non-road	61.47	39.10	0.26
Charles City County	On-road	28.71	11.13	0.07
Charles City County	Point	20.56	8.62	0.06
Charles City County	***Subtotal***	***164.96***	***79.96***	***0.52***
Chesterfield County	Fire	5.47	---	---
Chesterfield County	Nonpoint	684.92	200.02	1.31
Chesterfield County	Non-road	419.57	197.59	1.29
Chesterfield County	On-road	1,153.98	445.67	2.91
Chesterfield County	Point	1,616.95	698.93	4.57
Chesterfield County	***Subtotal***	***3,880.90***	***1,542.22***	***10.08***
Colonial Heights	Fire	---	---	---
Colonial Heights	Nonpoint	45.10	13.31	0.09
Colonial Heights	Non-road	12.11	5.65	0.04
Colonial Heights	On-road	95.20	36.77	0.24
Colonial Heights	Point	---	---	---
Colonial Heights	***Subtotal***	***152.40***	***55.74***	***0.36***
Hanover County	Fire	6.56	2.06	0.01
Hanover County	Nonpoint	392.34	130.79	0.85
Hanover County	Non-road	261.93	129.56	0.85
Hanover County	On-road	983.58	380.46	2.49
Hanover County	Point	601.86	361.96	2.37
Hanover County	***Subtotal***	***2,246.27***	***1,004.82***	***6.57***
Henrico County	Fire	0.10	---	---
Henrico County	Nonpoint	813.17	245.40	1.60
Henrico County	Non-road	546.89	250.84	1.64
Henrico County	On-road	1,146.39	441.95	2.89
Henrico County	Point	656.58	281.72	1.84
Henrico County	***Subtotal***	***3,163.13***	***1,219.91***	***7.97***
Hopewell	Fire	---	---	---
Hopewell	Nonpoint	49.00	15.19	0.10
Hopewell	Non-road	21.54	10.18	0.07
Hopewell	On-road	61.10	23.27	0.15
Hopewell	Point	4,057.37	1,715.64	11.21

Jurisdiction	Emissions Sector	2028 Annual NO_X Emissions, tpy	2028 Summer Season NO_X Emissions, Tons/OS	2028 Summertime Daily NO_X Emissions, tpd
Hopewell	***Subtotal***	***4,189.02***	***1,764.28***	***11.53***
Petersburg	Fire	2.17	---	---
Petersburg	Nonpoint	142.42	51.30	0.34
Petersburg	Non-road	23.68	10.43	0.07
Petersburg	On-road	161.83	62.68	0.41
Petersburg	Point	88.56	37.06	0.24
Petersburg	***Subtotal***	***418.66***	***161.47***	***1.06***
Prince George County	Fire	6.89	2.79	0.02
Prince George County	Nonpoint	139.74	50.43	0.33
Prince George County	Non-road	81.35	45.74	0.30
Prince George County	On-road	493.55	192.48	1.26
Prince George County	Point	434.01	295.06	1.93
Prince George County	***Subtotal***	***1,155.54***	***586.50***	***3.83***
Richmond	Fire	---	---	---
Richmond	Nonpoint	643.40	202.29	1.32
Richmond	Non-road	218.14	98.30	0.64
Richmond	On-road	563.06	217.21	1.42
Richmond	Point	2,515.56	1,122.99	7.34
Richmond	***Subtotal***	3,940.16	1,640.78	10.72
Richmond-Petersburg	***Total***	***19,311.04***	***8,055.68***	***52.65***

Table 8: Richmond-Petersburg 2028 Projected NO_X By Emissions Sector

Emissions Sector	2028 Annual NO_X Emissions, tpy	2028 Summer Season NO_X Emissions, tpOS	2028 Summertime Daily NO_X Emissions, tpd
Fire	23.26	5.84	0.04
Nonpoint	2,962.26	928.85	6.07
Non-road	1,646.68	787.38	5.15
On-road	4,687.39	1,811.63	11.84
Point	9,991.46	4,521.97	29.56
Total	***19,311.04***	***8,055.68***	***52.65***

Table 9: 2028 Attainment Year VOC Emissions Inventory, Richmond-Petersburg Maintenance Area

Jurisdiction	Emissions Sector	2028 Annual VOC Emissions, tpy	2028 Summer Season VOC Emissions, tons/OS	2028 Summertime Daily VOC Emissions, OStd
Charles City County	Fire	24.32	11.95	0.08
Charles City County	Nonpoint	149.67	58.51	0.38
Charles City County	Non-road	87.02	54.69	0.36
Charles City County	On-road	21.76	8.99	0.06

Jurisdiction	Emissions Sector	2028 Annual VOC Emissions, tpy	2028 Summer Season VOC Emissions, tons/OS	2028 Summertime Daily VOC Emissions, OStd
Charles City County	Point	0.56	0.24	0.00
Charles City County	***Subtotal***	***283.33***	***134.37***	***0.88***
Chesterfield County	Fire	51.09	---	---
Chesterfield County	Nonpoint	4,292.74	1,599.22	10.45
Chesterfield County	Non-road	618.09	322.12	2.11
Chesterfield County	On-road	816.03	335.43	2.19
Chesterfield County	Point	729.11	306.21	2.00
Chesterfield County	***Subtotal***	***6,507.07***	***2,562.97***	***16.75***
Colonial Heights	Fire	---	---	---
Colonial Heights	Nonpoint	215.32	77.96	0.51
Colonial Heights	Non-road	23.34	12.27	0.08
Colonial Heights	On-road	45.00	18.62	0.12
Colonial Heights	Point	76.96	32.26	0.21
Colonial Heights	***Subtotal***	***360.63***	***141.10***	***0.92***
Hanover County	Fire	81.01	22.63	0.15
Hanover County	Nonpoint	1,792.94	675.38	4.41
Hanover County	Non-road	625.03	326.47	2.13
Hanover County	On-road	340.58	140.79	0.92
Hanover County	Point	553.77	231.74	1.51
Hanover County	***Subtotal***	***3,393.33***	***1,397.02***	***9.13***
Henrico County	Fire	1.03	<0.01	<0.01
Henrico County	Nonpoint	3,984.57	1,464.66	9.57
Henrico County	Non-road	527.77	264.25	1.73
Henrico County	On-road	697.31	285.82	1.87
Henrico County	Point	130.92	56.40	0.37
Henrico County	***Subtotal***	***5,341.60***	***2,071.13***	***13.54***
Hopewell	Fire	---	---	---
Hopewell	Nonpoint	316.10	125.26	0.82
Hopewell	Non-road	47.19	24.71	0.16
Hopewell	On-road	41.07	16.81	0.11
Hopewell	Point	811.62	340.03	2.22
Hopewell	***Subtotal***	***1,215.97***	***506.81***	***3.31***
Petersburg	Fire	22.89	<0.01	<0.01
Petersburg	Nonpoint	386.67	151.18	0.99
Petersburg	Non-road	36.21	19.44	0.13
Petersburg	On-road	72.55	30.47	0.20
Petersburg	Point	5.59	2.34	0.02
Petersburg	***Subtotal***	***523.91***	***203.44***	***1.33***
Prince George County	Fire	70.24	29.81	0.19
Prince George County	Nonpoint	433.78	169.70	1.11
Prince George County	Non-road	158.11	93.55	0.61
Prince George County	On-road	145.91	61.96	0.40
Prince George County	Point	9.86	6.13	0.04
Prince George County	***Subtotal***	***817.90***	***361.15***	***2.36***

Jurisdiction	Emissions Sector	2028 Annual VOC Emissions, tpy	2028 Summer Season VOC Emissions, tons/OS	2028 Summertime Daily VOC Emissions, OStd
Richmond	Fire	---	---	---
Richmond	Nonpoint	2,590.47	939.34	6.14
Richmond	Non-road	425.20	214.95	1.40
Richmond	On-road	359.84	147.81	0.97
Richmond	Point	328.66	138.86	0.91
Richmond	***Subtotal***	3,704.18	1,440.96	9.42
Richmond-Petersburg	***Total***	***22,147.91***	***8,818.95***	***57.64***

Table 10: Richmond-Petersburg 2028 Projected VOC By Emissions Sector

Emissions Sector	2028 Annual VOC Emissions, tpy	2028 Summer Season VOC Emissions, tons/OS	2028 Summertime Daily VOC Emissions, OStd
Fire	250.58	64.39	0.42
Nonpoint	14,162.27	5,261.21	34.39
Non-road	2,547.97	1,332.44	8.71
On-road	2,540.05	1,046.71	6.84
Point	2,647.05	1,114.20	7.28
Total	***22,147.91***	***8,818.95***	***57.64***

The EPA resource document notes that the 2028 on-road sector emissions are projected from base year 2011 and that the tool used to generate the on-road emissions estimates is SMOKE-MOVES. In comparison, the on-road sector emissions created by the Virginia Department of Transportation (VDOT) to satisfy transportation conformity requirements and provided under Section 7.1 in Table 16 use 2016 data as the basis for projections. Additionally, VDOT used MOVES in inventory mode to generate these projections. These differences in methodology introduce variability such that 2028 projections are not identical.

Figure 4 compares the 2014 and projected 2028 daily emissions of NO_X and VOC as provided in the EPA resource document. Control programs and other factors such as technology improvements and lower costs of less polluting fuels will reduce emissions of NO_X and VOC in 2028. The 2028 projections show an expected 48% reduction in NO_X and an expected 22% reduction in VOC comparing ozone season daily values. These reductions will ensure that the area remains in compliance with the 1997 ozone NAAQS.

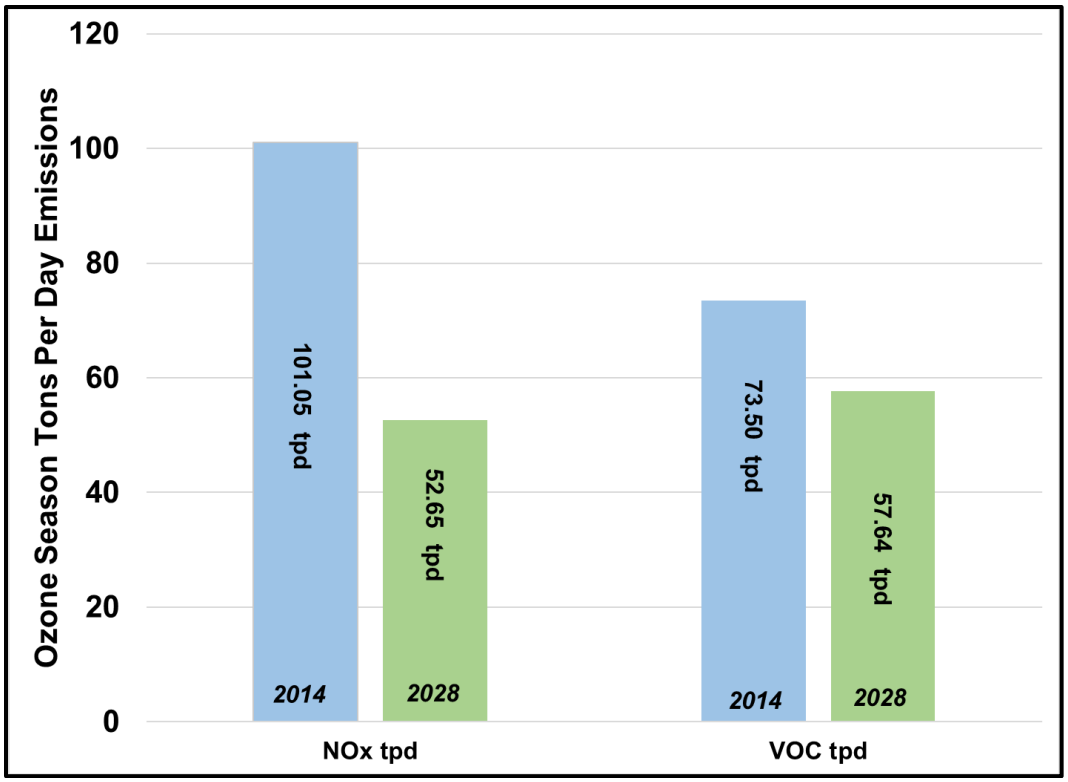


Figure 4: Richmond-Petersburg 2014 and Projected 2028 Ozone Season Daily Emissions

4.2.2. Base Year 2016 and Future Year Projections

EPA created a 2016 base year emissions inventory for modeling purposes in a collaborative effort with states and multi-jurisdictional organizations.[8] This data set includes a full suite of 2016 base year inventories, ancillary emissions data, and other information as well as projection year data for 2023 and 2028. EPA also included within this data set the 2011 and 2014 emissions based on NEI data. EPA has provided annual emission summaries of this information at state, county, and Tier 1 inventory sector level. For the 2016 inventory and the 2023 and 2028 projection inventories based on 2016, EPA has provided emissions estimates by jurisdiction and Tier 1 inventory sector in units of ozone season tons per weekday.[9] The 2023 and 2028 projections relied upon Integrated Planning Model (IPM) for estimates of EGU activity and emissions. As with the inventories discussed in subsection 4.2.1, emission estimation techniques within each inventory year may not be identical for all sectors, and these differences introduce variability when comparing these estimates and projections. Overall, though, these data sets are appropriate for trend evaluations.

Figure 5 and Figure 6 provide annual summaries of these data sets for anthropogenic NO_X and VOC, respectively, for the nine jurisdictions in the Richmond-Petersburg area. These figures show contributions of each pollutant by specific source sector. NO_X

[8] https://www.epa.gov/air-emissions-modeling/2016v1-platform
[9] ftp://newftp.epa.gov/Air/emismod/2016/v1/reports/

emissions, the predominant precursor to ozone in the Mid-Atlantic region, are expected to drop significantly in 2023 and 2028 as compared to 2011, 2014, and 2016. The VOC emissions are also projected to be less in 2023 and 2028 than in 2011, 2014, or 2016.

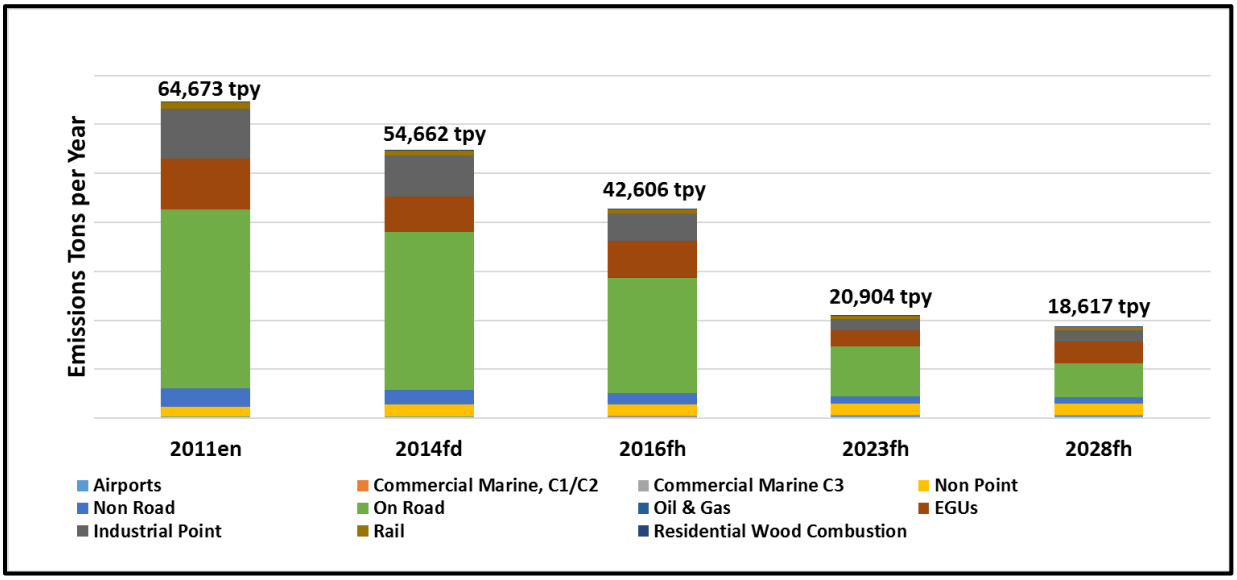


Figure 5: NO_X Emissions in the Richmond-Petersburg Area

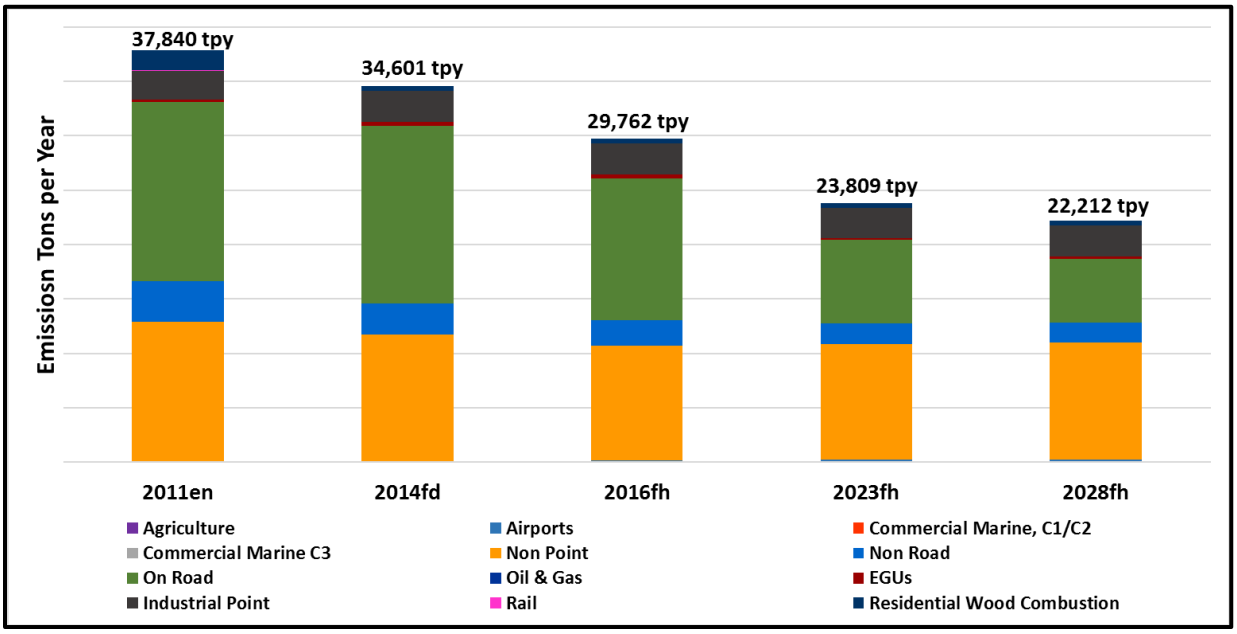


Figure 6: VOC Emissions in the Richmond-Petersburg Area

Figure 7 and Figure 8 provide ozone season tons per weekday summaries of these data sets for anthropogenic NO_X and VOC, respectively, for the nine jurisdictions in the Richmond-Petersburg area. These figures show contributions of each pollutant by specific source sector. NO_X emissions in units of tpd are expected to drop significantly in 2023 and 2028 as compared to 2016. The VOC emissions are also projected to be less in 2023 and 2028 than in 2016.

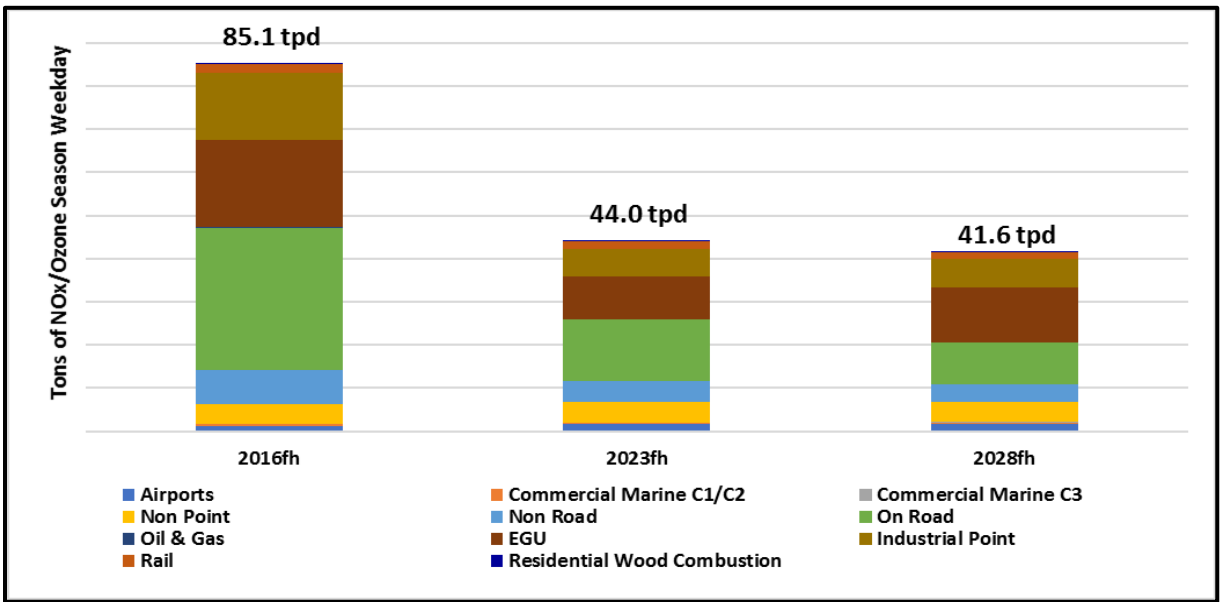


Figure 7: NO_X tpd for the Richmond-Petersburg Area

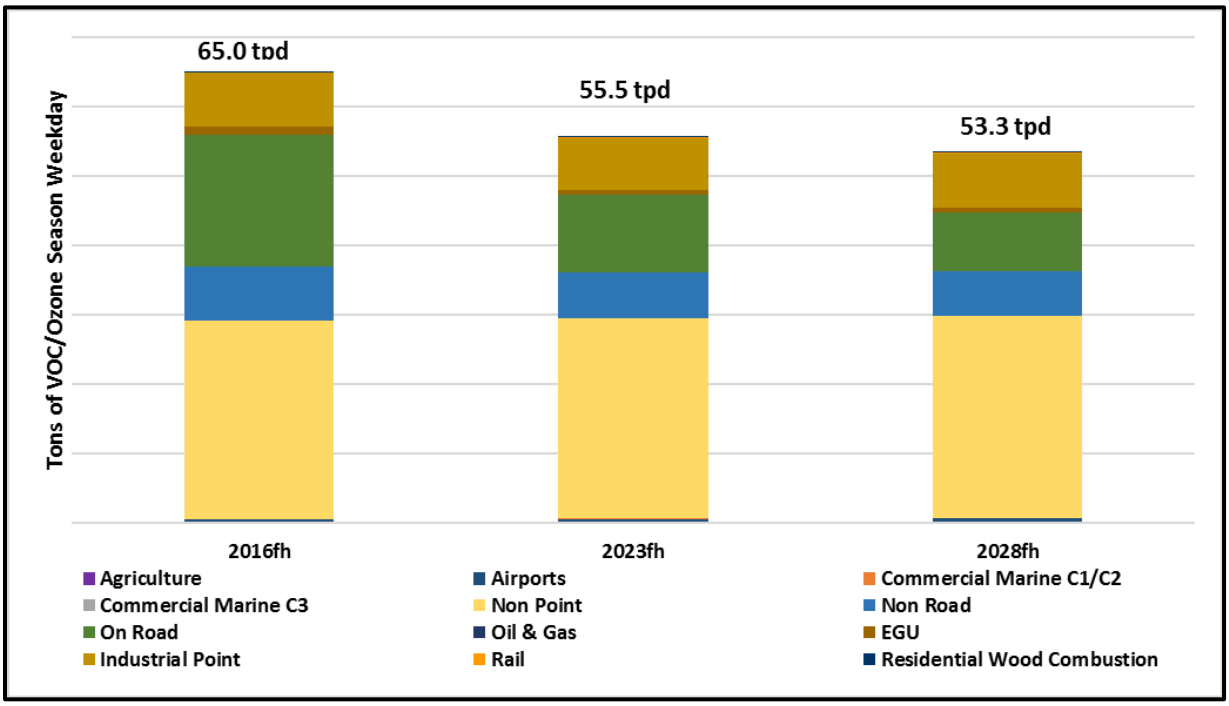


Figure 8: VOC tpd for the Richmond-Petersburg Area

These data show that emissions of ozone precursors in the Richmond-Petersburg area should continue to decline. Therefore, these data support the conclusion that a violation of the 1997 ozone NAAQS in the Richmond-Petersburg area is highly unlikely to occur and that ozone air quality should continue to improve into the future.

4.3. Control Programs

Virginia commits to implementation of all measures with respect to the control of NO_X and VOC contained in the SIP for the area before redesignation to attainment/maintenance.

Control programs reducing emissions from various source sectors account for the remarkable air quality improvement detailed in Section 3. Some of the most prominent control programs are described below.

4.3.1. Point Source Control Programs

EGUs account for a significant portion of the Richmond-Petersburg emissions inventory. Emissions from this sector are decreasing across Virginia and in the Richmond-Petersburg area.

The Chesterfield Power Station is located in Chesterfield County and operates four coal-fired boilers with a combined capacity of more than 1,000 megawatts (MW). Three of these coal-fired boilers must operate at no more than 0.10 pounds NO_X/million BTU (lbs/mmbtu) on a 30-day rolling average due to the requirements within the 2003 Virginia Electric and Power Company (VEPCO) Consent Decree. To achieve this rate, the VEPCO Consent Decree required the installation of selective catalytic reduction (SCR) on these units, greatly reducing NO_X emissions.[10]

Across Virginia, EGUs are subject to the Cross State Air Pollution Rule (CSAPR) Update. Virginia participates in this program under the federally enforceable federal implementation plan located at 40 CFR Part 97. This rule places a NO_X budget of 9,223 tons of NO_X per ozone season on Virginia EGUs.

Other limitations on NO_X and VOC from point sources in the area stem from facility and unit retirements, facility improvements such as switches from coal to natural gas in steam production facilities, and the impacts of recent permitting actions. One such example is AdvanSix-Hopewell, Registration 50232, which is a chemical manufacturing facility in Hopewell, Virginia. DEQ issued a federally enforceable minor New Source Review permit to this facility on June 28, 2011, that required the installation and operation of SCR systems on eight of the ten highest NO_X emitting units on site. These controls resulted from negotiations to resolve federal compliance issues. In 2011, these units' potential to emit (PTE) of NO_X was over 10,000 tpy. The permit requires installation of an SCR on eight of these ten units, and each SCR will achieve NO_X reductions of at least 95%. The collective NO_X PTE of the ten units after control is 1,850 tpy. The permit required installation of the SCR in a phased manner such that all eight SCRs began operating by June 30, 2019.

[10] https://www.epa.gov/enforcement/virginia-electric-and-power-company-vepco-clean-air-act-caa-settlement

Another example is Philip Morris Park 500, Registration Number 50722, a cigarette manufacturing facility located in Richmond, Virginia. The facility operated three coal-fired boilers to supply steam to their processes. In 2014, the facility replaced these units with natural gas operations, using distillate oil as a backup fuel. The facility's Title V permit no longer provides the option of burning coal and lists the fuels for use as natural gas, low sulfur distillate oil, and liquefied petroleum gas. The switch in fuels resulted in emissions reductions of approximately 300 tpy of NO_X.

4.3.2. On-road and Non-road Emission Control Programs

On-road and non-road emissions account for about 49% of the 2014 daily NO_X emissions and 44% of the 2014 daily VOC emissions in the area using data from the EPA resource document described in Section 4.2.1. In 2028, they are expected to account for about 32% of the daily NO_X emissions and 27% of the daily VOC emissions in the area. The CAA authorizes EPA to establish emission standards for motor vehicles under § 202 and the authority to establish fuel controls under § 211. The CAA generally prohibits states other than California from enacting emission standards for motor vehicles under § 209(a) and for non-road engines under § 209(e). Other states may choose to adopt California requirements or meet federal requirements. Due to these proscriptions, federal programs to reduce emissions from on-road and non-road engines are critical to improving air quality both within states and downwind of states. New federal programs are important since Virginia's population growth and corresponding growth in equipment counts and vehicle miles traveled partially offset any reductions from existing control programs.

4.3.2.1. Reformulated Gasoline

Reformulated gasoline (RFG) is gasoline blended to burn more cleanly than conventional gasoline. Using this fuel reduces emissions of VOCs, carbon monoxide (CO), NO_X, and some toxic pollutants. The CAA under § 211(k)(10)(D) mandated the use of RFG in certain large, metropolitan areas that had very poor air quality, including the Northern Virginia Emissions Control Areas. The CAA provided the option to opt into the program to other areas experiencing poor ozone air quality. Portions of the Richmond-Petersburg area opted into this program to reduce emissions from on-road and non-road gasoline engines as part of the planning process for the 1979 ozone NAAQS. EPA approved the inclusion of these jurisdictions into the RFG program on December 23, 1991 (56 FR 66445). EPA estimates that RFG reduces mobile source emissions of VOCs by 27% and the emissions of NO_X by 7% compared to emissions from conventional gasoline. EPA also estimates that RFG emits 22% less toxic air pollutants than conventional gasoline.[11] Table 11 lists the seven jurisdictions that participate in the RFG program.

[11] United States Environmental Protection Agency, Phase II Reformulated Gasoline: The Next Major Step Toward Cleaner Air, EPA420-F-99-042, November, 1999 (https://nepis.epa.gov/Exe/ZyPDF.cgi/00000FG5.PDF?Dockey=00000FG5.PDF).

Table 11: Richmond-Petersburg Jurisdictions Participating in the RFG Program

Jurisdiction
Charles City County
Henrico County
City of Richmond
City of Hopewell
City of Colonial Heights
Hanover County
Chesterfield County

In 2017, DEQ evaluated the emissions benefits of this program using MOVES2014a and the 2011 input data for Virginia jurisdictions. This analysis estimated the daily and annual benefits achieved from implementation of the RFG program in 2011. Table 12 summarizes these estimated 2011 reductions from the RFG program on a daily basis and on an annual basis.

Table 12: RFG Program - Emissions Benefit

Area	NO_X tons/day	NO_X tpy	VOC tons/day	VOC tpy	CO tons/day	CO tpy
Northern Virginia/D.C.	1.39	210.31	1.90	415.01	18.63	3,391.49
Richmond-Petersburg	1.13	162.50	1.64	321.52	14.35	2,575.94
Hampton Roads	1.49	187.94	2.05	347.49	19.75	2,665.26
Virginia Total	4.00	560.75	5.59	1,084.03	52.72	8,632.69

4.3.2.2. 2007 Heavy-Duty Highway Rule

In the 2007 Heavy-Duty Highway Rule (40 CFR Part 86, Subpart P), EPA set standards for heavy-duty engines, and the rule phased in the standards between 2007 and 2010. These standards limit NO_X to 0.20 grams/brake horsepower-hour (g/bhp-hr) and non-methane hydrocarbons to 0.14 g/bhp-hr. The rule also requires that the sulfur content of diesel fuel not exceed 0.0015% by weight to facilitate the use of modern pollution control technology on these engines. As older heavy-duty diesel vehicles are replaced with new vehicles, this rule continues to provide emission reductions.

4.3.2.3. Tier 3 Motor Vehicle Emission and Fuel Standards

Building on the Tier 2 Vehicle and Gasoline Sulfur Program, the federal Tier 3 program (Subpart H of 40 CFR Part 80, 40 CFR Part 85 and 40 CFR Part 86) will reduce tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. The tailpipe standards include different phase-in schedules that vary by vehicle class but generally begin to apply between model years 2017 and 2025. The Tier 3 gasoline sulfur standard, which reduced the allowable sulfur content to 10 ppm in 2017, allows manufacturers to comply across the fleet with the more stringent Tier 3 emission standards. Reduced sulfur content in gasoline will also enable the control devices on vehicles already in use to operate more effectively. Compared to older standards, the non-methane organic gases and NO_X tailpipe standards for light duty vehicles in this rule are 80% less than the existing fleet average. The heavy-duty tailpipe standards are 60% less than the

existing fleet average. Mobile emissions will continue to benefit from this program well into the future as motorist replace older, more polluting vehicles with cleaner vehicles.

4.3.3. Non-road Diesel Emissions Programs

EPA promulgated a series of control programs in 40 CFR Part 89, Part 90, Part 91, Part 92, and Part 94. These regulations phased in limitations on compression ignition engines, spark-ignition non-road engines, marine engines, and locomotive engines through 2012. Environmental benefits continue into the future as consumers replace older engines with newer engines that have improved fuel economy and more stringent emissions standards. These regulations also required the use of cleaner fuels.

4.3.4. Area Source Controls

Several VOC control programs are implemented in the area for the control of VOC emissions. The programs resulted from the application of contingency measures during the first maintenance plan for the 1997 ozone NAAQS. These rules include:

- Article 48 of 9VAC5 Chapter 40, Emission Standards for Mobile Equipment Repair and Refinishing Operations;
- Article 2 of 9VAC5 Chapter 45, Emission Standards for Portable Fuel Containers and Spouts Manufactured On or After 8/1/2010;
- Article 4 of 9VAC5 Chapter 45, Emission Standards for Consumer Products Manufactured on or After 8/1/2010;
- Article 5 of 9VAC5 Chapter 45, Emission Standards for Architectural and Industrial Maintenance Coatings; and
- Article 6 of 9VAC5 Chapter 45, Emission Standards for Adhesives and Sealants.

5. Air Quality Modeling Results

While air quality modeling results are not required as part of an LMP due to measured air quality values being significantly below the standard, such data may further bolster the assertion that air quality will remain below the 1997 ozone NAAQS and in all likelihood will continue to improve. In the resource document, EPA provided the 2023 design value projections used in the interstate transport SIP analysis under §110(a)(2)(D)(I) of the CAA for the 2008 ozone NAAQS.[12] EPA updated this information in 2018.[13] Table 13 provides the projected average and maximum design values for the monitors in the maintenance area.[14] Projected air quality values show

[12] https://www.epa.gov/airmarkets/october-2017-memo-and-supplemental-information-interstate-transport-sips-2008-ozone-naaqs
[13] https://www.epa.gov/sites/production/files/2018-06/documents/aq_modelingtsd_updated_2023_modeling_o3_dvs.pdf
[14] "Air Quality Modeling Technical Support Document for the Updated 2023 Projected Ozone Design Values," EPA-OAQPS, June 2018, page B28. https://www.epa.gov/sites/production/files/2018-06/documents/aq_modelingtsd_updated_2023_modeling_o3_dvs.pdf

continuing improvement, making an exceedance or violation of the 1997 ozone NAAQS extremely unlikely.

Table 13: 2023 Ozone Air Quality Projections, EPA

EPA Identification Number	Station Number	Jurisdiction	2023 Average Design Value	2023 Maximum Design Value
51-041-0004	71-H	Chesterfield County	56.8 ppb	59.2 ppb
51-087-0014	72-M	Henrico County	58.8 ppb	61.2 ppb
51-085-0003	73-E	Hanover County	56.9 ppb	58.6 ppb
51-036-0002	75-B	Charles City County	59.4 ppb	62.0 ppb

Another source of air quality projections is the work done in support of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Regional Haze submission created by MANE-VU and the New York Department of Environmental Conservation.[15] This work used the base year 2011 and future year 2028 emissions inventories created by EPA but substituted EGU projections from the Eastern Regional Technical Advisory Committee (ERTAC) EGU tool. Table 14 provides the 2028 ozone projections from this effort. The projected values are well below the 1997 ozone NAAQS, demonstrating that an exceedance or violation of the 1997 ozone NAAQS is extremely unlikely.

Table 14: 2028 Ozone Air Quality Projections, MANE-VU

EPA Identification Number	Station Number	Jurisdiction	2028el + ERTAC Design Value
51-041-0004	71-H	Chesterfield County	56.3 ppb
51-087-0014	72-M	Henrico County	57.9 ppb
51-085-0003	73-E	Hanover County	55.8 ppb
51-036-0002	75-B	Charles City County	58.8 ppb

6. Contingency Measures

Section 175A requires that a maintenance plan include contingency measures as necessary to promptly correct any NAAQS violation that occurs. The maintenance plan must list the contingency measures, include a schedule for adoption and implementation, and specify the triggers that commence the process for contingency measure implementation.

[15] "Ozone Transport Commission/Mid-Atlantic Northeastern Visibility Union 2011 Based Modeling Platform Support Document – October 2018 Update," Ozone Transport Commission, October 18, 2018, https://protect2.fireeye.com/url?k=5e9fa19c-02b999a2-5e9d58a9-000babda0031-254225db55ced377&u=https://otcair.org/MANEVU/Upload/Publication/Reports/OTC%20MANE-VU%202011%20Based%20Modeling%20Platform%20Support%20Document%20October%202018%20-%20Final.pdf.

As noted in Section 4.3, Virginia commits to implementation of all measures with respect to the control of NO_X and VOC contained in the SIP for the area before redesignation to attainment/maintenance. Once this maintenance plan expires on December 31, 2028, general conformity requirements and transportation conformity requirements no longer apply.

In the case of an LMP, the attainment year inventory is not an emissions cap; therefore, no contingency requirements are needed for exceeding the levels listed in the attainment year inventory. A situation in which future year emissions exceed the 2014 attainment year levels is highly unlikely due to the control measures that are in place as described in Section 4.3. However, should the area exceed the 2014 attainment year emissions levels, those emissions increases should not cause a violation of the 1997 ozone NAAQS since the area is so far beneath the NAAQS.

Any ozone monitor in the area registering a fourth-highest, eight-hour average of 0.085 ppm or greater is considered to have recorded an exceedance of the 1997 ozone NAAQS. In the unlikely event that a monitor registers an exceedance, one control measure listed in Table 15 will be implemented.

Any ozone monitor in the area registering a three-year average of the fourth-highest, eight-hour ozone values of 0.085 ppm or greater is considered to have recorded a violation of the 1997 ozone NAAQS. In the unlikely event that a monitor registers a violation, two additional control measures listed in Table 15 will be implemented.

In the unlikely event that an ozone monitor registers a second violation following the implementation of the first contingency measures, two additional control measures listed in Table 15 will be implemented.

Table 15: Contingency Measures for the Richmond-Petersburg Maintenance Area

Program	Description
Ozone Transport Commission (OTC) Architectural and Industrial (AIM) Coating Model Rule dated October 13, 2014 [16]	Rule provides additional requirements reducing emissions from the AIM source category.
OTC Model Rule for Consumer Products dated May 21, 2013[17]	Rule provides additional requirements reducing emissions from the Consumer Product source category.
OTC Model Rule for Solvent Decreasing dated 2012[18]	Rule provides additional requirements reducing emissions from the solvent degreasing category.
Article 51 of 9VAC5 Chapter 40, Emission Standards for Stationary Sources Subject to Case-by-Case RACT Determinations	Application of NO_X Reasonably Available Control Technology (RACT) on facilities with a potential to emit of at least 100 tpy NO_X.

[16]https://otcair.org/upload/Documents/Model%20Rules/AIM_Preamble_Model_Rule.pdf
[17]https://otcair.org/upload/Documents/Model%20Rules/OTC%20CP%20Model%20Rule%20Final%20Clean%202013%20Revision%20Clean.pdf
[18]https://otcair.org/upload/Documents/Model%20Rules/2011%20OTC%20Model%20Rule%20for%20Solvent%20Degreasing.pdf

Program	Description
Article 51 of 9VAC5 Chapter 40,Emission Standards for Stationary Sources Subject to Case-by-Case RACT Determinations	Application of VOC RACT on facilities with a potential to emit of at least 100 tpy VOC.

The following schedule applies to the contingency measures should they need to be implemented due to exceedances or violations of the 1997 ozone NAAQS:

- Notification received from EPA that a contingency measure must be implemented or three months after a recorded exceedance or violation is certified.
- Applicable regulation to be adopted 6 months after this date.
- Applicable regulation to be implemented 6 months after adoption.
- Compliance with regulation to be achieved within 12 months of adoption.

7. Conformity

Virginia's transportation conformity rule (9VAC5 Chapter 151) and general conformity rule (9VAC5 Chapter 160) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either rule, one means of demonstrating conformity of federal actions is to indicate that expected emissions from planned actions are consistent with an emissions budget, generally based on the attainment year inventory, for the area. Emissions budgets and attainment year inventories in LMP areas are not constraining for the length of the maintenance period since the area's air quality is significantly beneath the 1997 ozone NAAQS. The margin between the measured air quality and the 1997 ozone NAAQS is large enough that a future violation of the standard is highly unlikely, rendering a budget test for transportation conformity or general conformity purposes unnecessary when an area has an approved LMP.

7.1. Transportation Conformity

Section 176(c) of the CAA requires that federally funded or approved highway and transit activities are consistent with ("conform to") the purpose of the SIP. Conformity to the purpose of the SIP means that transportation activities will not cause or contribute to new air quality violations, worsen existing violations or delay timely attainment of the relevant NAAQS or any interim milestones. EPA's transportation conformity rules establish the criteria and procedures for determining whether metropolitan transportation plans, transportation improvement programs and federally supported highway and transit projects conform to the SIP.

The South Coast II decision held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. Since the area was an attainment/maintenance area for the 1997 ozone NAAQS and an attainment area for the 2008 ozone NAAQS at the time of the revocation of the 1997 ozone NAAQS, this decision requires transportation conformity

determinations for the area through the end of the second maintenance plan 10-year period, in this case December 31, 2028.[19]

Virginia's transportation conformity rule (9VAC5 Chapter 151) incorporates by reference the federal rules at 40 CFR Part 93 Subpart A, Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws. This rule governs transportation conformity and addresses LMPs under 40 CFR 93.109(e), which states:[20]

> 40 CFR 93.109(e): Areas with limited maintenance plans. Notwithstanding the other paragraphs of this section, an area is not required to satisfy the regional emissions analysis for § 93.118 and/or § 93.119 for a given pollutant and NAAQS, if the area has an adequate or approved limited maintenance plan for such pollutant and NAAQS. A limited maintenance plan would have to demonstrate that it would be unreasonable to expect that such an area would experience enough motor vehicle emissions growth for a NAAQS violation to occur. A conformity determination that meets other applicable criteria in Table 1 of paragraph (b) of this section is still required, including the hot-spot requirement for projects in CO, PM_{10}, and $PM_{2.5}$ areas.

This regulation notes that the LMP must demonstrate that motor vehicle emissions growth is not likely to cause a 1997 ozone NAAQS violation.

The Virginia Department of Transportation (VDOT) completed and submitted a conformity determination for the 1997 ozone NAAQS for the area most recently in 2018.[21] EPA provided written concurrence on this determination on October 16, 2018, and VDOT received a joint Federal Highway Administration/Federal Transportation Administration conformity finding on October 29, 2018. This conformity determination included regional emissions analyses, which demonstrate that emissions of NO_X and VOC from the on-road sector will continue to decline through 2040. Table 16 provides the milestone years and the on-road emissions estimate for each pollutant for the area from this conformity document.

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[19] "Transportation Conformity Guidance for Areas Reaching the End of the Maintenance Period," EPA-420-B-14-093, October 2014. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100KPP0.PDF?Dockey=P100KPP0.PDF

[20] Incorporated by reference as in effect July 1, 2012, by 9VAC5-151-40.

[21] "Richmond, Virginia 8-Hour Ozone Maintenance Area Transportation Conformity Analysis FY18-21 Transportation improvement Program and 2040 Long Range Transportation Plan – Final Report," Virginia Department of Transportation, September 2018.

Table 16: On-road Emissions Estimates for the Richmond-Petersburg Maintenance Area

Conformity Analysis Year	Regional NO_X Emissions	Regional VOC Emissions
2018 Budget Year	25.270 tpd	15.709 tpd
2028 Interim Year	10.810 tpd	8.773 tpd
2030 Interim Year	9.244 tpd	8.573 tpd
2040 Long Range Plan Horizon Year	6.550 tpd	5.975 tpd

The future year emission projections in Table 16 were calculated using estimates of population, economic, and other types of growth, including on-road activity growth, that were approved by the Richmond Region Metropolitan Planning Organization and the Tri-Cities Metropolitan Planning Organization. The on-road emissions projections based on these growth estimates decrease substantially going forward due to the control programs in place. These data provide assurance that motor vehicle emissions growth will not cause a violation of the 1997 ozone NAAQS. Rather, the expected reductions in on-road emissions should further improve ozone air quality in the area.

Another approach to determine if on-road emissions could cause an exceedance of the 1997 ozone NAAQS is to apply the methodology listed in attachment B of the PM_{10} LMP guidance. This highly conservative methodology estimates the portion of the area's design value assigned to on-road emissions by applying the ratio of on-road emissions versus the total emissions inventory to the area's design value. The methodology then estimates the increase in ozone from vehicle miles traveled (VMT) and on-road activity growth into the future year. The growth factor applied to the motor vehicle design value concentration is based on the estimated growth in VMT for the area over 10 years. The sum of the area's design value plus the estimated ozone increase based on VMT activity through the out year must be well below the NAAQS, as determined by the following equation.

$$DV + (VMT_{pi} \times DV_{mv}) < \text{Margin of Safety}$$

Where:

DV = the area's design value
VMT_{pi} = the projected percent increase in VMT
DV_{mv} = motor vehicle design value based on on-road mobile portion of the attainment year inventory derived by multiplying the design value by the percentage of the attainment year inventor represented by on-road mobile numbers

The area's most recent design value is 0.065 ppm, based on 2019 data. Applying VDOT estimates of annual VMT growth for each jurisdiction, DEQ estimates the projected percent increase in VMT between 2017 and 2028 to be 11.07% in the Richmond-Petersburg 1997 ozone maintenance area. For arterial and larger roadways,

VDOT's estimate is based on the anticipated growth in VMT as calculated by the region's travel demand modeling network. For local and collector (i.e., off-network) roadways, VDOT's estimate is based on 2016 daily VMT estimates by jurisdiction and federal functional class grown to 2028 values using annual growth rates based on the anticipated growth of auto ownership derived from socioeconomic forecasts approved by the Richmond Regional and Tri-Cities Metropolitan Planning Organizations. Applying the growth rates to the 2016 off-network VMT for each jurisdiction and federal functional class, and adding it to the appropriate network VMT, allows the calculation of a total summertime weekday VMT for the Richmond-Petersburg area. Dividing the total projected 2028 VMT by the area's 2017 VMT results in an 11.07% overall growth rate. The motor vehicle design value could be calculated based on either the percentage of NO_X or the percentage of VOC from on-road emissions in the attainment year inventory. Using the data in the EPA resource document, the NO_X percentage from on-road emissions in the attainment year inventory is 40.1%. The VOC percentage from on-road emissions in the attainment year inventory is 29.7%. Using the NO_X percentage provides the more conservative estimate. Therefore, the motor vehicle design value is 0.0273 ppm, which equates to 40.1% of 0.068 ppm. Including an 11.07% growth rate applied to the motor vehicle design value equates to 0.003 ppm. Substituting these values into the formula as follows projects an air quality value of 0.068 ppm:

$$0.065 \text{ ppm} + 0.1107 \times (.401 * 0.065 \text{ ppm}) = 0.068 \text{ ppm}$$

The value of 0.068 ppm is beneath 85% of the 1997 ozone NAAQS and provides a margin of safety of 0.016 ppm. The results of this methodology demonstrate that growth in the on-road emissions sector should not cause an exceedance or violation of the 1997 ozone NAAQS. This methodology is highly conservative because the impacts of new control programs are not taken into account; only activity growth is considered in the calculation. Therefore, these results indicate that an emissions test to demonstrate transportation conformity is not necessary to ensure future compliance with the 1997 ozone NAAQS within this LMP.

Not requiring an emissions test is also consistent with the language in the federal regulation for areas performing conformity analyses in support of a revoked standard. The transportation conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for metropolitan transportation plans and transportation improvement plans include:

- Use of the latest planning assumptions as required by 40 CFR 93.110,
- Use of the latest emissions model as required by 40 CFR 93.111,
- Consultation as required by 40 CFR 93.112,
- Consideration of transportation control measures as required by 40 CFR 93.113(b) and 40 CFR 93.113(c), and
- The application of an emissions budget and/or an interim emissions test as required by 40 CFR 93.118 and 40 CFR 93.119.

However, 40 CFR 93.109(c) states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and therefore this federal regulation requires no regional emissions analysis in support of the 1997 ozone NAAQS.

Therefore, federal regulations and guidance no longer require a regional emissions test when demonstrating transportation conformity for the 1997 ozone NAAQS for two reasons. First, the area is using a limited maintenance plan to demonstrate how compliant air quality will be maintained for at least the 10 years. As demonstrated above, an exceedance or violation of the 1997 ozone NAAQS due to increases in emissions from the on-road sector is highly unlikely. Second, the 1997 ozone NAAQS is a revoked standard, and the federal regulations specifically sunset the regional emissions analyses provisions on the effective date of a NAAQS revocation.[22]

7.2. General Conformity

In Virginia, general conformity requirements are governed by 9VAC5 Chapter 160, Regulation for General Conformity, and by the federal rules at Subpart B of 40 CFR Part 93, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. Federal actions not otherwise subject to transportation conformity requirements or permitting requirements of the CAA are subject to general conformity requirements if the activity will increase emissions by more than 100 tpy of NO_X or VOC in the Richmond-Petersburg 1997 ozone maintenance area. Such mandates generally require an emissions budget test for those projects that are not exempt from this process. However, emissions from projects triggering the general conformity requirements are highly unlikely to cause a violation of the 1997 ozone NAAQS. The area's air quality is significantly below 0.084 ppm, and trends in projected emissions and projected ozone concentrations are downward. General conformity requirements are often of limited duration, frequently occurring in a single year. Therefore, as noted in federal guidance,[23] general conformity requirements do not need to include a test for compliance with emissions budgets.

Virginia regulations under 9VAC5-160-30 J, and federal regulations under 40 CFR 93.153(g), provide the option for federal agencies to meet criteria for establishing that activities presume to conform. The requirements for the implementation of an LMP and the requirements for presuming that all activities subject to general conformity requirements conform to the Richmond-Petersburg SIP are compatible. The criteria for presuming conformity include ensuring that the activity or activities would not:

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[22] "Transportation Conformity Guidance for the South Coast II Court Decision," EPA-420-B-18-050, Page 11, November 2018. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100VQME.pdf

[23] USEPA, "Limited Maintenance Plan Options for Nonclassifiable Ozone Nonattainment Areas," November 16, 1994, page 5. https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19941116_shaver_limited_maintenance_nonclassifiable.pdf

- Cause or contribute to any new violation of any standard in any area;
- Interfere with the provisions in the applicable implementation plan for maintenance of any standard;
- Increase the frequency or severity of any existing violation of any standard in any area; and
- Delay timely attainment of any standard or any required interim emissions reductions or other milestones in any area including, where applicable, emission levels specified in the applicable implementation plan for purposes of reasonable further progress demonstration, attainment demonstrations, or maintenance demonstration.

Section 3 provides data showing that the air quality in the Richmond-Petersburg area is good and well beneath the 1997 ozone NAAQS, the 2008 ozone NAAQS, and the 2015 ozone NAAQS. Section 4 provide emissions estimates demonstrating that the Richmond-Petersburg area will benefit from reduced emissions of ozone precursors through at least 2028. Activities regulated by general conformity requirements are short term in nature. Emissions from such activities could not cause or contribute to a new violation of any ozone standard since air quality in the region is well beneath federal requirements and since overall emissions in the area are decreasing. Therefore, this limited maintenance plan addresses and satisfies the first requirement of the regulations regarding the presumption of conformance for all activities subject to general conformity requirements.

Activities regulated under the general conformity program would not interfere with provisions of any SIP for the Richmond-Petersburg area since past SIP revisions for the area do not have specific programmatic requirements for such activities. Due to the nature of SIP requirements for the Richmond-Petersburg area, the second requirement does not present an obstacle to concluding that any activity subject to the general conformity program may presume to conform.

As noted in Section 3, the area has no existing violations of any ozone NAAQS. Rather, the area has good air quality that is well beneath all federal standards. Because of the area has no existing violations of any ozone NAAQS and emissions of ozone precursors are expected to decrease, any activity subject to the general conformity regulations could not increase the frequency or severity of existing violations, and the Richmond-Petersburg area satisfies the third requirement for presuming conformity.

The Richmond-Petersburg area is also not subject to any reasonable further progress demonstrations or attainment demonstrations. Under the 1979 ozone NAAQS and the 1997 ozone NAAQS, where the area was originally designated nonattainment, the area's air quality improved such that the area submitted redesignation requests and maintenance plans rather than other types of SIPs. The maintenance plans for this area do not contain any emissions budgets that may be violated by transitory emissions from general conformity projects, especially considering the significant reduction in emissions seen within the Richmond-Petersburg area. The presumption that any

project subject to the general conformity requirements in the Richmond-Petersburg area conforms to the SIP will therefore not delay timely attainment of any standard and will not delay timely attainment of any applicable emissions levels in the SIP for the area.

Since general conformity activities in the Richmond-Petersburg area meet the requirements listened in 9VAC5-160-30 J and since guidance for areas under an LMP states that no emissions budget test is necessary for such projects, Virginia presumes that any such activity falling under the general conformity requirements conforms to Virginia's SIP within the Richmond-Petersburg area for the 1997 ozone NAAQS.

8. Maintenance Plan Sunset Date

Section 175A(b) requires a second maintenance plan for ensuring compliance with the applicable standard for an additional 10-year period following the first maintenance plan. The Richmond-Petersburg 1997 ozone NAAQS attainment/maintenance area's first plan used an out year of 2018. Therefore, this second maintenance plan must remain effective through December 31, 2028. After this date, transportation and general conformity requirements no longer apply. Control programs used to achieve and maintain compliant air quality will continue to apply unless Virginia develops, and EPA approves, a noninterference demonstration under § 110(l) or in some cases § 193 providing assurance that removal of a control program will not affected attainment status of the maintenance area or other areas in Virginia.

9. Conclusion

The Richmond-Petersburg area qualifies for the use of an LMP because the area enjoys air quality that is significantly below the 1997 ozone NAAQS and because trends in both projected emissions and ozone concentrations demonstrate the area's air quality should continue to improve rather than degrade. This LMP demonstrates that the area will remain in compliance with the 1997 ozone NAAQS through an additional 10 year period, until December 31, 2028. In the unlikely situation where air quality monitors register an exceedance or violation of the 1997 ozone NAAQS, this LMP includes contingency measures to be implemented to promptly correct the exceedance or violation. However, both emission trends and air quality trends show that ozone air quality should continue to improve going into the future.

SIP\NONATTN PLANS\REDESGN\RIC5-OZ\RIC5-SIP1-PRO