Maryland
Department of
the Environment

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1997 8-hour Ozone NAAQS Limited Maintenance Plan for the Kent and Queen Anne's Counties Area

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1. EXECUTIVE SUMMARY

1.1 Introduction

The State of Maryland is submitting this second limited maintenance plan for the Kent and Queen Anne's Counties 1997 8-hour Ozone National Ambient Air Quality Standard (NAAQS) Maintenance Area to the United States Environmental Protection Agency (USEPA). This document shows that Kent and Queen Anne's Counties currently have monitoring data at 85% of the NAAQS or lower and that the counties will remain compliant as measured by a monitoring network that meets all federal requirements. This plan contains contingency measures that will be implemented in the unlikely event that the area experiences an exceedance of the 1997 8-hour Ozone NAAQS.

Ozone attainment requires that the design value for the 1997 8-hour NAAQS does not exceed the standard of 0.08 ppm, which under the averaging rule found in 40 CFR part 50 means the design value cannot be 0.085 ppm or more. Attainment is evaluated over a three-year period. The design value is calculated for ozone by taking the fourth highest value over a three-year period. The 8-hour ozone standard is found by averaging three consecutive years of the fourth highest maximum 8-hour ozone levels values in an area. This number, called the design value, must be lower than 85 parts per billion (ppb) to meet the 1997 standard.

1.2 Designations

The federal Clean Air Act, 42 U.S.C. §7401 et seq. as amended by the Clean Air Act Amendments of 1990 (CAAA), requires all areas of the nation to attain and maintain compliance with the federal ambient air quality standards, including the 0.080 ppm 1997 8-hour Ozone NAAQS. Kent and Queens Anne's Counties were designated as a marginal nonattainment area for this standard on September 22, 2004 (69 FR 56697)[1]. On May 2, 2006, the Maryland Department of the Environment submitted a redesignation request and maintenance plan for Kent and Queen Anne's Counties. The USEPA approved that request and redesignated Kent and Queen Anne's Counties to attainment effective January 22, 2007 (71 FR 76920).

1.3 Air Quality

Since this designation was made, ozone air quality in Kent and Queen Anne's Counties has improved such that the air quality is significantly better than required by the 1997 Ozone NAAQS. The counties' federal reference monitor have demonstrated compliance with the 0.08 ppm standard based upon complete, quality-assured, and certified ambient air quality monitoring. The most recent ozone design value, based on 2015-2017 data, is 0.070 ppm, well below the 0.08 ppm 1997 standard.

[1] https://www.federalregister.gov/documents/2004/09/22/04-21184/air-quality-classifications-for-the-8-hour-ozone-national-ambient-air-quality-standards

1.4 Requirements for a Limited Maintenance Plan

When an area has monitoring data at 85% of the NAAQS or lower, a state may choose the less rigorous maintenance plan option of a limited maintenance plan. A limited maintenance plan requires an attainment year emissions inventory, a commitment to continue monitoring in the ozone maintenance area, and a contingency plan.

Under a limited maintenance plan, a maintenance demonstration is considered to be satisfied if the monitoring data shows that the area is meeting the air quality criteria for a limited maintenance plan (i.e., 85% of the NAAQS). The USEPA believes that the continued applicability of prevention of significant deterioration requirements, and control measures already contained in the State Implementation Plan and Federal measures, such as the Federal motor vehicle control program, should provide adequate assurance of maintenance for such areas. Additionally, with an approved ozone limited maintenance plan, Federal actions requiring conformity determinations under the transportation conformity or general conformity rules could be considered to satisfy the budget test required in the respective rules.

Maryland has chosen the limited maintenance plan approach for this revision to the maintenance plan. Kent and Queen Anne's Counties attained the federal ozone standard in 2005, based on monitoring data from 2003-2005, and, in accordance with CAAA Section 175A(a), submitted an ozone maintenance plan covering the period 2006-2018[2]. The USEPA approved this maintenance plan effective January 22, 2007 (71 FR 76920).

1.5 Contingency Measures

Maryland's contingency plan involves a triggering mechanism to determine when measures are needed and a process for implementation. The MDE will track the attainment status of the 8-hour ozone NAAQS in Kent and Queen Anne's Counties and analyze any exceedances of the 8-hour ozone standard (including the contribution from upwind states) that will occur during the maintenance period, in accordance with the procedures of 40 CFR, Chapter 1, Part 51, Appendix V. After the 4th exceedance of the eight-hour ozone NAAQS (0.08ppm) occurs within any single ozone season (May – September), MDE will consider that fourth exceedance and any subsequent exceedance as the trigger by which an immediate recalculation of the design value for the Millington Monitor would be required.

Upon a trigger activation, Maryland will consider one of three potential measures to address NOx and VOC emissions in the Kent and Queen Anne's Counties area. These measures include accelerated compliance with COMAR 26.11.13.07- Control of VOC Emissions from Portable Fuel Containers, the institution of a lawn mower exchange program, and strengthening reasonably available control technology (RACT) to further reduce emissions from sources in the area.

[2] https://www.federalregister.gov/documents/2006/12/22/E6-21887/approval-and-promulgation-of-air-quality-implementation-plans-maryland-redesignation-of-the-kent-and

1.6 What is Ozone?

Ground-level ozone is an extremely reactive gas comprised of three atoms of oxygen. Ozone, the primary constituent of smog, continues to be a pollution problem throughout many areas of the United States. Unlike many other pollutants, ground-level ozone is not directly emitted into the atmosphere from a specific source. Instead, ground-level ozone forms when NOx chemically react with volatile organic compounds VOCs through a series of complicated chemical reactions in the presence of strong sunshine.

Because ozone formation is greatest when the sunlight is most intense, the peak ozone levels typically occur during hot, dry, stagnant summertime conditions. Federal regulations, therefore, define the ozone season as April 1st to October 31st. Peak ozone concentrations exhibit a clear seasonal cycle, with concentrations rising at the onset of warmer weather in the spring and declining again as the autumn approaches. Changing weather patterns can significantly contribute to yearly differences in ozone concentrations. Years with summertime weather conditions that are hot and dry will generally result in many more days of poor air quality than cool and wet summers.

The formation of ozone is not an instantaneous process, nor is it limited in geographical scope. While many urban areas tend to have high levels of ozone, even rural areas may experience increased ozone levels because wind carries ozone, and the pollutants that form it, hundreds of miles from their original sources. Numerous studies and modeling data show compelling evidence that weather patterns often result in the transport of ozone and the pollutants responsible for ozone formation well beyond the locality that produced the emissions.

Ground-level ozone can have significant impacts on human health, particularly people with existing respiratory disease, the elderly, and children. Ozone also impacts the environment and ecosystem health. Scientific evidence suggests that air pollution weakens the immune systems of many types of vegetation and can cause significant crop damage. In addition, rain and snow wash air pollution deposited on vegetation and architectural surfaces into the streams and rivers of the region and finally into the Chesapeake Bay.

1.7 South Coast Air Quality Management District Court Decision

On July 18, 1997, USEPA revised the ozone standard to a level of 0.080 ppm (62 FR 38856)[3] and then again revised to standard to a more stringent 0.075 ppm in 2008. On March 6, 2015, USEPA established a final rule for implementing the 0.075 ppm ozone NAAQS (80 FR 12263). As part of this action, EPA revoked the 0.080 ppm ozone NAAQS for all purposes and established anti-backsliding measures, relieving Kent and Queen Anne's Counties from the obligation to submit a second maintenance plan.

[3] https://www.federalregister.gov/documents/2015/03/06/2015-04012/implementation-of-the-2008-national-ambient-air-quality-standards-for-ozone-state-implementation

In a recent court decision[4], the District of Columbia Court of Appeals vacated portions of the 0.075 ppm Ozone NAAQS Implementation Rule for orphan maintenance areas. These areas were redesignated to attainment, with a maintenance plan, for the 1997 Ozone NAAQS, but were for the 2008 Ozone NAAQSs at the time of designation. The decision vacated the waiver of requirement for a second maintenance plan in all orphan non-attainment areas. Kent and Queen Anne's Counties meet the criteria for this category and are now required to submit a second maintenance plan for the 0.08 ppm Ozone NAAQS.

1.8 Limited Maintenance Plan Option

Maryland is using the limited maintenance plan option for this second maintenance plan, as outlined in EPA's 1994 Guidance *Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas*.[5] This allows for a less rigorous maintenance plan than what was formerly required in developing attainment/maintenance plans for ozone areas that have design values at or below 85% of the 1997 Ozone NAAQS[6]. In this case, the design value must be at or below 0.0714 ppm. The current design value for the period 2015 – 2017 is 0.70 ppm (83% of the NAAQS) in the Kent and Queen Anne's Counties Maintenance Area. The limited maintenance plan approach requires the development of an attainment emissions inventory for a typical summer day, but does not require projected future years emissions inventories as with a typical maintenance plan. The maintenance demonstration is considered to be satisfied if the monitoring data shows that the area is meeting the air quality criteria for a limited maintenance plan (i.e. 85% of the NAAQS). The USEPA believes that the continued applicability of prevention of significant deterioration requirements, and control measures already contained in the State Implementation Plan (SIP) and Federal measures, such as the Federal motor vehicle control program, should provide adequate assurance of maintenance for such areas.

The limited maintenance plan, like a traditional maintenance plan, requires a commitment to continue operation of an appropriate, USEPA-approved air quality monitoring network, in accordance with the Code of Federal Regulations (CFR), 40 CFR Part 58. This is to verify the attainment status of the area over the maintenance period, especially since there is no cap on the emissions for a limited maintenance plan. A contingency plan is also required to promptly correct any violation of the 1997 8-hour Ozone NAAQS that occurs after approval of the limited maintenance plan. The contingency measures do not have to be fully adopted; contingency plan is considered to be an enforceable part of the SIP and should ensure that the contingency measures are adopted expeditiously once they are triggered, if they have not been adopted previously.

The final requirement in a traditional maintenance plan is the establishment of motor vehicle emission budgets for transportation conformity purposes and emission budgets for general conformity purposes. In a limited maintenance plan, the emission budgets are treated as

[4] *South Coast Air Quality Management District v. Environmental Protection Agency*, No. 15-1115 (D.C. Cir. 2018)
[5] https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19941116_shaver_limited_maintenance_nonclassifiable.pdf
[6] https://www.epa.gov/sites/production/files/2018-11/documents/ozone_1997_naaqs_lmp_resource_document_nov_20_2018.pdf

essentially non-constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the NAAQS would result. Therefore, the USEPA concludes in the guidance that for a limited maintenance area, the emissions need not be capped for the maintenance period and the "budget test" of the transportation and general conformity rules are met.

2. DISCUSSION OF ATTAINMENT

2.1 Historic Air Quality

Since the Kent and Queen Anne's Counties Area has been redesignated to maintenance status for ozone, the area has continued to meet the ozone NAAQS. Ozone attainment requires that the design value calculated for the 1997 8-hour NAAQS does not exceed the standard of 0.08 ppm, which under the averaging rule found in 40 CFR part 50 means the design value cannot be 0.085 ppm or more. Attainment is evaluated over a three-year period. The design value is calculated for ozone by averaging three consecutive years of the fourth highest maximum 8-hour ozone levels values in an area. This number, called the design value, must be lower than 85 parts per billion (ppb) to meet the standard. There is one air quality monitor in the Kent and Queen Anne's Counties area, monitor 240290002 in Kent County.

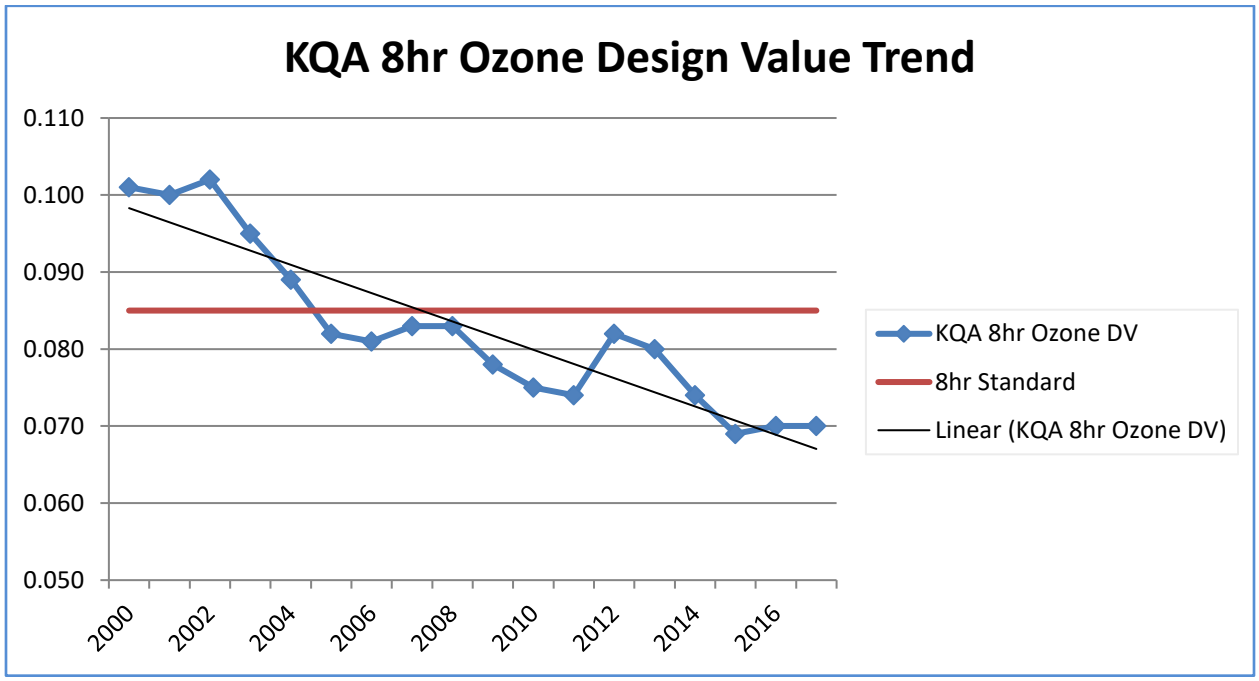
Table 3.1-1 and Figure 3.1-1show the historic air quality data design values for the maintenance area since the submittal of the second maintenance plan in 2006.

Table 3.1-1: Kent and Queen Anne's Counties Ozone Design Values

Designated Area	Design Value Years (ppm)[1,2,3]	Design Value (ppm)
Kent & Queen Anne's Counties, MD	2004 - 2006	0.081
	2005 - 2007	0.083
	2006 - 2008	0.083
	2007 - 2009	0.078
	2008 - 2010	0.075
	2009 - 2011	0.074
	2010 - 2012	0.082
	2011 - 2013	0.080
	2012 - 2014	0.074
	2013 - 2015	0.069
	2014 - 2016	0.070
	2015 - 2017	0.070

1. The level of the 1997 8-hour Ozone NAAQS is 0.08 parts per million (ppm). The design value is the 3-year average of the annual fourth-highest daily maximum 8-hour ozone concentration.
2. The design values shown here are computed for the latest design value period using Federal Reference Method or equivalent data reported by State, Tribal, and Local monitoring agencies to EPA's Air Quality System (AQS) as of June 27, 2011. Concentrations flagged by State, Tribal, or Local monitoring agencies as having been affected by an exceptional event (e.g., wildfire, volcanic eruption) and concurred by the associated EPA Regional Office are not included in these calculations.
3. https://www.epa.gov/air-trends/air-quality-design-values#report

Figure 3.1-1: Kent and Queen Anne's Counties DV Trend



2.2 Recent Air Quality Values

As stated in the previous section, the Kent and Queen Anne Counties, MD maintenance area has continued to meet the 1997 8-hour Ozone NAAQS.

In order to use the limited maintenance plan option, the area must be at or below 85% of the standard. In the case of the 1997 standard, this value is 0.0714 ppm (0.084 x 0.85). The area has met the criteria since the 2013 – 2015 design value was calculated and has continued to meet the criteria, as shown in Table 3.2-1.

Table 3.2-1: Recent Air Quality Values for Kent and Queen Anne's Counties

Designated Area	Design Value Years	Design Value (ppm)
Kent & Queen Anne's Counties, MD	2013 - 2015	0.069
	2014 - 2016	0.070
	2015 - 2017	0.070

Another criterion foe the limited maintenance plan is a stable or improving air quality trend. EPA's guidance suggests that a basic approach would be to take the most recent design value for the area and add the maximum design value increase that has been observed in the area over the past several years. The table below demonstrates that the design value in the Kent and Queen Anne's Counties area remains below the 1997 0.08 ozone standard, even in in the unlikely event that an increase does occur. This indicates a high likelihood of expected continued attainment.

Table 3.2-2: Demonstration of Improving Air Quality

Design Value Years	Design Value (ppm)	Maximum Design Value[1] Increase (ppm)	Total Value (ppm)
2012 - 2014	0.074	0.008	0.082
2013 - 2015	0.069	0.008	0.077
2014 - 2016	0.070	0.008	0.078
2015 - 2017	0.070	0.008	0.078

[1] This represents the increase from the 2011-2012 design value.

3. LIMITED MAINTENANCE PLAN

3.1 Attainment Emission Inventory

The 2014 Emissions Inventory was prepared by the MDE. Relevant portions of this document including, source category listings and descriptions, methods and data sources, emission factors, controls, spatial and temporal allocations, and example calculations are included in Appendix B. The data was uploaded to EPA's Emissions Inventory System (EIS) for inclusion in EPA's National Emission Inventory (NEI) for 2014.

There are four different man-made emission inventory source classifications: stationary point, stationary nonpoint (area sources), nonroad mobile and on-road mobile sources.

Point sources are stationary sources that have the potential to emit more than 100 tons of VOC per year, or 50 tons of NOx, and are required to have an operating air permit. The source emissions are tabulated from data collected by direct on-site measurements of emissions, or mass balance calculations utilizing emission factors from USEPA's AP-42. There may be several emission sources for one facility. Emission data is collected for each source at a facility and the data is reported to the State or local air agencies. For a detailed table regarding the point source emissions inventory development, see Appendix A-2.

Stationary area sources are those sources whose emissions are relatively small, but due to the large number of sources, the collective emissions could be significant (i.e., combustion of fuels for heating, structure fires). For area sources, emissions are estimated by multiplying an emission factor by some known indicator of collective activity: such as fuel usage, number of households, or population. These types of emissions are estimated on the county level. For a detailed table regarding the area source emissions inventory development, see Appendix A-4.

For on-road mobile sources, the USEPA's Motor Vehicle Emission Simulator (MOVES) mobile model is run to generate emissions. The MOVES model includes the road class vehicle miles traveled as an input file and can directly output the estimated emissions. For a detailed table regarding the on-road mobile source emissions inventory development, see Appendix A-5.

Nonroad mobile sources are pieces of equipment that can move but do not use the roadways (i.e., lawn mowers, construction equipment, railroad locomotives, aircraft). They are separated into two different categories, M-A-R (Marine, Air, and Rail) and other nonroad mobile sources. The emissions from this category are primarily calculated using the USEPA's NONROAD2014a nonroad mobile model, with the exception of marine vessels, railroad locomotives and aircraft engines. The marine vessels, railroad locomotive and aircraft engine emissions are estimated by taking an activity and multiplying by an emission factor. These emissions are also estimated at the county level. For detailed tables regarding the nonroad mobile source emissions inventory development, see Appendix A-3, and Appendix A-1 for M-A-R specific sources.

Table 4.1-1 displays the 2014 attainment year emissions inventory as required for a limited maintenance plan.

Table 4.1-1: 2014 VOC, NOx, and CO Emissions (tons/day) for Maintenance Areas

County	Pollutant	Point Source	Area Source	On-Road Mobile Source	Nonroad Mobile Source	M-A-R
Kent	CO	0.113425	0.3685	4.39	12.68804	0.228182
Queen Anne's	CO	0.073222	1.4193	14.33	14.97455	0.599317
Total	CO	0.186647	1.7878	18.72	27.66259	0.827499
Kent	NOx	0.225485	0.0525	0.96	1.22584	1.58283
Queen Anne's	NOx	0.05315	0.0930	3.69	1.59946	0.173376
Total	NOx	0.278635	0.1455	4.65	2.82530	1.75621
Kent	VOC	0.03555	0.8195	0.42	2.49106	0.070777
Queen Anne's	VOC	0.0335796	1.9742	1.10	2.62677	0.032119
Total	VOC	0.06912	2.7937	1.52	5.11784	0.102895

3.2 Foundation Control Program

The main element of the maintenance plan is the foundation control program. The purpose of the foundation control program is to prevent the ambient air quality standards from being violated and thereby eliminates the need for more costly controls being imposed on industry and the general public. Each component of the State's foundation control program is essential in demonstrating maintenance of the 1997 8-hour Ozone NAAQS.

Maryland commits to continued implementation of all measures with respect to the control of NO_X and VOC contained in the SIP for Kent and Queen Anne's Counties before the area was redesignated to attainment for the 1997 ozone standard.

Tier 3 Vehicle Emissions and Fuel Standards Program

In 2014 USEPA finalized a rule (79 FR 23414: effective June 27, 2014) designed to reduce air pollution from passenger cars and trucks. The Tier 3 program is part of a comprehensive approach to reducing the impacts of motor vehicles on air quality and public health. The program considers the vehicle and its fuel as an integrated system, setting new vehicle emissions standards and lowering the sulfur content of gasoline beginning in 2017. The vehicle standards will reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. The gasoline sulfur standard will enable more stringent vehicle emissions standards and will make emissions control systems more effective. The vehicle emission standards combined with the reduction of gasoline sulfur content will significantly reduce motor vehicle emissions, including NOX, VOC, fine particulate matter (PM2.5), CO, and air toxics.

Inspection and Maintenance Programs

Maryland operates an enhanced I/M program to ensure that motorists are driving vehicles that meet federal requirements. Owners of vehicles that do not meet requirements, shown by either tail pipe testing or On-Board Diagnostic (OBD) testing must repair the dirty vehicles or show that repairs have totaled costs more than waiver limitations.

Nonroad Small Gasoline Engines

This measure (73 FR 59259: effective December 8, 2008) requires small gasoline-powered engine equipment, such as lawn and garden equipment, manufactured after August 1, 1996 to meet federal emissions standards. Small gasoline-powered engine equipment includes, for example, lawn mowers, trimmers, generators, and compressors. These measures apply to equipment with engines of less than 25 horsepower. VOC emissions result from combustion and evaporation of gasoline used to power this equipment.

Nonroad Diesel Engines Tier 1 and Tier 2

This measure (Tier 1 (59 FR 31306): effective July 18, 1994; Tier 2 (63 FR 56968): effective December 22, 1998) takes credit for NOX emissions reductions from emissions standards promulgated by the USEPA for nonroad, compression-ignition (i.e., diesel-powered) utility engines. The measure affects diesel-powered (or other compression-ignition) heavy-duty farm, construction equipment, industrial equipment, etc., rated at or above 37 kilowatts (37 kilowatts is approximately equal to 50 horsepower). Heavy-duty farm and construction equipment includes asphalt pavers, rollers, scrapers, rubber-tired dozers, agricultural tractors, combines, balers, and harvesters. This measure applies to all compression-ignition engines except engines used in aircraft, marine vessels, locomotives and underground mining activity.

Marine Engine Standards

Of the nonroad sources studied by USEPA, gasoline marine engines were found to be one of the largest contributors of hydrocarbon emissions, 30% of the nationwide nonroad total. This measure (73 FR 59194: effective December 8, 2008) controls exhaust emissions from new spark-ignition gasoline marine engines, including outboard engines, personal watercraft engines, and jetboat engines.

Additional reductions and control programs, beyond those necessary for attainment of the 1997 8-hour Ozone NAAQS, have been promulgated within Kent and Queen Anne's Counties. The reductions are due to the permanent measures that Maryland has adopted state-wide. The adoption of control programs on a statewide basis by the MDE, and not simply in nonattainment areas, provides for substantial reductions in ozone precursor emissions. The control programs instituted in Kent and Queen Anne's county that are beyond those necessary for attainment of the 1997 8-hour Ozone NAAQS include, but are not limited to:

Control Measure	Compliance Effective Date
Lithographic Printing CTG Adoption COMAR 26.11.19.11	1/1/2012
Vehicle Refinishing OTC Model Rule COMAR 26.11.19.23	7/1/2013
Metal Parts and Products Coating CTG Adoption COMAR 26.11.19.08	5/26/2014
Commercial and Consumer Products OTC Model Rule COMAR 26.11.32	1/1/2018

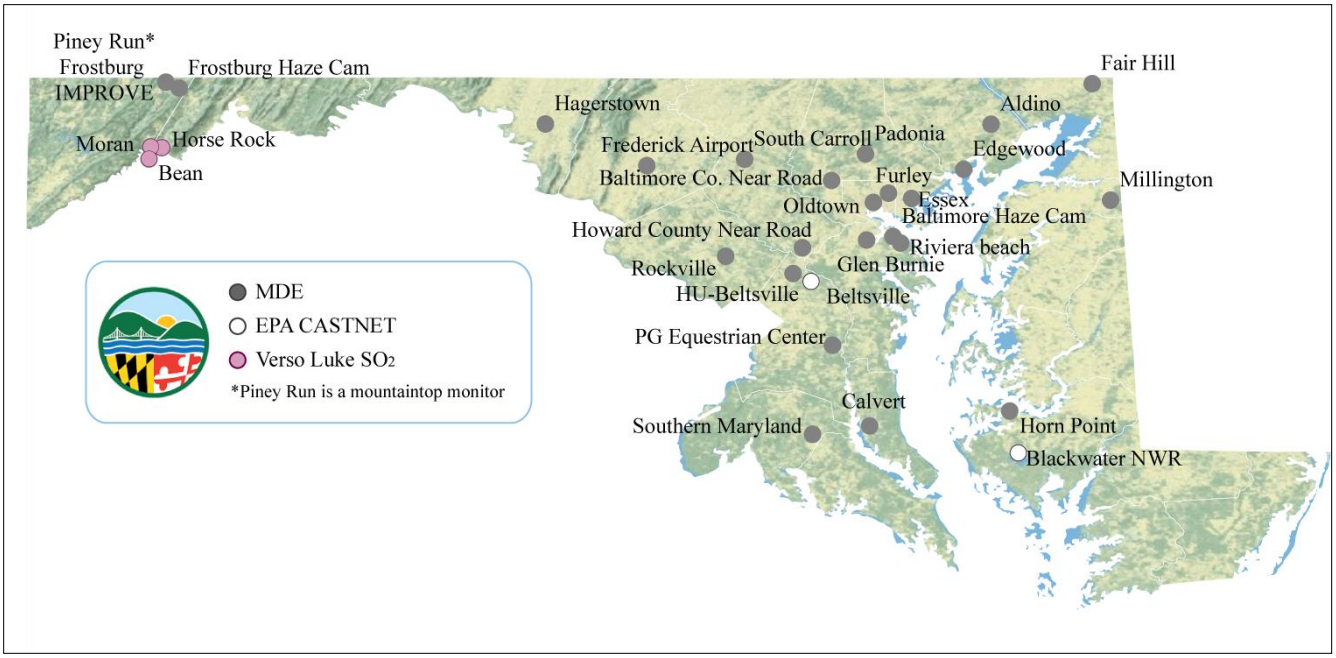
3.3 Maintenance Demonstration

In a limited maintenance plan, the maintenance demonstration requirement is considered to be satisfied if the monitoring data shows the area is meeting the air quality criteria for limited maintenance areas (i.e., 85% or lower of the 1997 8-hour Ozone NAAQS). There is no requirement to project emissions over the maintenance period. The USEPA believes that the continued applicability of prevention of significant deterioration requirements, and control measures already in the SIP and Federal measures should provide adequate assurance of maintenance for such areas. When the USEPA approves a limited maintenance plan, they are concluding that an emissions budget may be treated as non-constraining for the length of the maintenance period, as it is unreasonable to expect that the area will experience enough growth to violate the NAAQS. The maintenance period for the Kent and Queen Anne's Counties Maintenance Area is through January 1, 2028.

3.4 Monitoring Network

Once an area has been redesignated, the state must continue to operate an appropriate air quality monitoring network in accordance with 40 CFR Part 58, to verify the area's attainment status. The Millington, MD site currently monitors ozone in Kent and Queen Anne's Counties. Maryland's Ambient Air Monitoring network is shown in Figure 4-1. Maryland commits to maintaining and operating an appropriate air quality monitoring network in accordance with 40 CFR Part 58.

Figure 4.4-1: Maryland's Ambient Air Monitoring Network



3.5 Contingency Plan

Section 175A of the Clean Air Act requires that the Maintenance Plan include contingency provisions that would be implemented in order to promptly correct any violation of the 1997 8-hour Ozone NAAQS that occurs after redesignation to attainment. This section also requires documentation of the authority to implement and enforce the measures. However, these measures do not have to be fully implemented in order for the Maintenance Plan to be approved:

> ***"These contingency measures are distinguished from those generally required for Nonattainment Areas under section 172 (c)(9) and those specifically required for O3 and CO Nonattainment Areas under sections 182(c)(9) and 187 (a)(3), respectively. For the purposes of section 175A, a State is not required to have fully adopted contingency measures that will take effect without further action by the State in order for the maintenance plan to be approved."***[7]

[7] Memorandum from EPA, John Calcagni, Director of Air Quality Management Division, September 4, 1992; https://www.epa.gov/sites/production/files/2016-03/documents/calcagni_memo_-_procedures_for_processing_requests_to_redesignate_areas_to_attainment_090492.pdf

1. Contingency Measure Triggering Protocol

The MDE will track the attainment status of the 8-hour ozone NAAQS in Kent and Queen Anne's Counties and analyze any exceedances of the 8-hour ozone standard (including the contribution from upwind states) that will occur during the maintenance period, in accordance with the procedures of 40 CFR, Chapter 1, Part 51, Appendix V.
After the 4th exceedance of the eight-hour ozone NAAQS (0.08ppm) occurs within any single ozone season (May – September), MDE will consider that fourth exceedance and any subsequent exceedance as the trigger by which an immediate recalculation of the design value for the Millington Monitor would be required.

2. Schedule and Procedure for Adoption and Implementation

If the recalculated design value is shown to be above the 8hr NAAQS (0.08ppm) then Maryland would initiate the following schedule:

1) Within 2 weeks of the "trigger"- MDE will notify Kent and Queen Anne's Counties and other stakeholders and will schedule an initial work group meeting concerning contingency measures.
2) Within 6 weeks of the "trigger" - MDE will convene a stakeholder group to evaluate the selection and implementation of the contingency measures. The stakeholder group will be composed of interested state and local government agencies; business, environmental and health representatives; citizens and other interested parties
3) Within 12 weeks of the "trigger"- A public meeting will be held on the proposed contingency measures
4) Within 18 weeks of the "trigger"- MDE/ Stakeholders will meet to consider public comments and finalize a list of planned contingency measures
5) After the list of planning of measures is finalized as identified above in step 4 it will take approximately 12 months from that date to go through any required rulemaking processes.
6) Within 24 months of the "trigger" - Agreed-upon contingency measures will be implemented in the impacted counties

MDE shall adopt the chosen contingency measure through a rule-making pursuant to the schedule and procedures enumerated in the Code of Maryland Regulations (COMAR).

No contingency measure shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

3. Contingency Measures

According to the Clean Air Act Amendments, states that wish to redesignate nonattainment areas to attainment must include in their submittal to EPA contingency measures which will automatically take effect should violations of the NAAQS occur in the former nonattainment area. MDE believes that emissions in the two counties will not cause nonattainment and that any future violations will be due to transport from other counties.

Under certain meteorological conditions, the monitor at Millington will detect transport of high levels of ozone from the Washington, D.C., Baltimore or Philadelphia nonattainment areas. Major reductions in emissions from these large nonattainment areas have contributed to a reduction in transported emissions.

Even though transported emissions are not linked to contingency plan triggers, MDE will discuss the exceedances with EPA if monitors for wind direction show a direct path from the Baltimore or Washington nonattainment areas. After consulting with EPA to determine a course of action, MDE will implement one of the following contingency measures through promulgation of a rule:

a) ***Control of VOC Emissions from Portable Fuel Containers – COMAR 26.11.13.07***
MDE will accelerate compliance with this regulation to ensure that older portable fuel containers are phased out. This will include the creation of a voluntary portable fuel container exchange program to encourage the use of compliant containers at private residences and businesses.

b) ***Lower Applicability Threshold for ICI Boilers included under COMAR 26.11.09.08D, 26.11.09.08E, and 26.11.09.08F***
Industrial Commercial Institutional (ICI) boiler regulations will possibly include the following sources when the threshold is lowered:

Queen Anne's County	**Kent County**
Chesapeake College	Washington College
Kent Narrows Waste Water Treatment Plant	Kent & Queen Anne's Hospital
Queen Anne's County Emergency Center	Wenger's Feed Mill
Chesapeake Bay Bridge Maintenance and Administration Facility	Kent County Public Works and Roads Building
Centreville Town Hall and Sheriffs Department	Monsanto-Asgrow Seeds
Queenstown Town offices & courthouse	Maryland SHA District 2 Office
County Health Department	Maryland State Police
County Board of Education	National Guard Armory
County Courthouse	County Courthouse
County Dept of Public Works	Chestertown Filtration Plant
Maryland SHA garage	County schools
Maryland State Police	
National Guard Armory	
County schools	

c) Other regulatory measures identified as necessary to return the area to attainment.

3.6 Conformity Determination

The transportation and general conformity rules apply to nonattainment areas and maintenance areas operating under maintenance plans. Transportation conformity determinations are required in these areas whenever the State Transportation Improvement Program is revised or a metropolitan planning organization revises their Long Range Transportation Plan. General conformity determinations are required whenever there is a Federal action, other than transportation related, within a nonattainment or maintenance area that will increase emissions above a de minimis level. In a traditional maintenance plan, emission budgets are established explicitly for transportation conformity by means of motor vehicle emission budgets and implicitly for general conformity where the estimated emissions in the SIP that reflect the Federal action being considered becomes the emission budget that must be met.

Emissions budgets in limited maintenance plan areas may be treated as non-constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the ozone NAAQS would result. For general conformity determinations, this means that emission estimates for Federal actions, other than transportation related, would no longer need to be compared to the SIP. Federal actions subject to general conformity requirements would be considered to pass the budget test of 40 CFR 93.158(a)(5) (incorporated by reference by 26.11.26.09.[8]

For transportation conformity determinations, it would be unreasonable to expect the area to experience so much growth in vehicle emissions during the limited maintenance plan period that a violation of the ozone NAAQS would occur. As a result, Federal actions requiring transportation conformity determinations under the transportation conformity rule are considered to satisfy the budget test without the need for a regional emissions analysis. Therefore, motor vehicle emission budgets are not established in a limited maintenance plan.

Kent and Queen Anne's Counties have fulfilled all of the requirements pertaining to transportation conformity, which 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 (this by which is not applicable as mentioned in previous paragraphs).

[8] *Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas* (November 16, 1994), found at https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19941116_shaver_limited_maintenance_nonclassifiable.pdf

Approval of the limited maintenance plan does not relieve transportation partners of the other transportation conformity requirements. Transportation plan revisions and transportation improvement program conformity determinations must satisfy all other applicable requirements of the transportation conformity rule and hot-spot requirements must be satisfied for transportation projects (40 CFR 93.109(e)).

4. CONCLUSION

The Kent and Queen Anne's Counties maintenance area meets the requirements for a limited maintenance plan. The 0.70 ppm design value for the area is at or below 85% of the 1997 8-hour Ozone NAAQS. An attainment inventory for 2014 has been provided, as well as contingency measures in case any of the area should have such an increase in ozone that the area would violate the standard in the future. Finally, Maryland has committed to continue operating the ozone monitor near the maintenance area, in accordance with 40 CFR Part 58.

APPENDICES

Appendix A – 2014 Emissions Inventory Data
Appendix B – 2014 Emissions Inventory Methodology Documentation

Appendix A1: Marine-Air-Rail (M-A-R) CO, NOx, and VOC Emissions

FIPS Code	Source Classification Code	SCC Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	2275001000	Aircraft /Military Aircraft /Total	0.0117	0.0022	0.0065
24029	2275050000	Aircraft /General Aviation /Total	0.0491	0.0003	0.0016
24029	2280002200	Marine Vessels, Commercial /Diesel /Underway emissions	0.0324	0.1680	0.0019
24029	2280003200	Marine Vessels, Commercial /Residual /Underway emissions	0.1337	1.4040	0.0603
24029	2285002007	Railroad Equipment /Diesel /Line Haul Locomotives: Class II / III Operations	0.0006	0.0029	0.0001
24029	2285002010	Railroad Equipment /Diesel /Yard Locomotives	0.0007	0.0055	0.0003
24035	2275001000	Aircraft /Military Aircraft /Total	0.0030	0.0006	0.0017
24035	2275020000	Aircraft /Commercial Aircraft /Total: All Types	0.0092	0.0037	0.0042
24035	2275050000	Aircraft /General Aviation /Total	0.5632	0.0030	0.0179
24035	2280002200	Marine Vessels, Commercial /Diesel /Underway emissions	0.0083	0.0434	0.0005
24035	2280003200	Marine Vessels, Commercial /Residual /Underway emissions	0.0151	0.1199	0.0077
24035	2285002007	Railroad Equipment /Diesel /Line Haul Locomotives: Class II / III Operations	0.0002	0.0010	0.0000
24035	2285002010	Railroad Equipment /Diesel /Yard Locomotives	0.0002	0.0018	0.0001
		TOTAL	0.82749	1.7563	0.10289

Appendix A-2 Point Sources CO, NOx, and VOC Emissions

FIPs Code	Emission Unit ID	Facility Name	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	029-0001-4-0074	Eastman Specialties Corporation-2107	0.005605	0.01191	0.0004
24029	029-0001-4-0075	Eastman Specialties Corporation-2107	0.0133	0.075205	0.00139
24029	029-0001-6-0010	Eastman Specialties Corporation-2107	0.007765	0.0604	0.000275
24029	029-0001-6-0011	Eastman Specialties Corporation-2107	0.000935	0.01136	0
24029	029-0001-6-0012	Eastman Specialties Corporation-2107	0.00335	0.0231	0.00018
24029	029-0001-6-0024	Eastman Specialties Corporation-2107	0.00436	0.01046	0.00058
24029	029-0001-7-0018	Eastman Specialties Corporation-2107			0.001235
24029	029-0001-9-0010	Eastman Specialties Corporation-2107			0.01024
24029	029-0001-9-0013	Eastman Specialties Corporation-2107			0.00202
24029	029-0051-6-0018	David A. Bramble, Inc. - Massey-23290	0.07811	0.03305	0.01923
24035	035-0020-4-0025	Tidewater Direct, LLC-2314	0	0	0
24035	035-0020-6-0013	Tidewater Direct, LLC-2314			0.0149116
24035	035-0033-6-0021	David A. Bramble - Wye Mills Asphalt Plant-29152	0.067722	0.02865	0.016668
24035	035-0033-6-0034	David A. Bramble - Wye Mills Asphalt Plant-29152	0.0055	0.0245	0.002
		TOTAL	0.186647	0.278635	0.06913

Appendix A-3 Nonroad MOVES Model CO, NOx, and VOC Emissions

County Name	County ID	MDE Tier	CO (tpd)	NOx (tpd)	VOC (tpd)
Kent	24029	Agricultural Equipment	0.36888298	0.4090464	0.04391786
Kent	24029	Airport Ground Support Equipment	1.4584E-33	3.1228E-33	2.8002E-34
Kent	24029	Commercial Equipment	0.51806038	0.02091825	0.02056031
Kent	24029	Construction and Mining Equipment	0.1518316	0.12799165	0.01957574
Kent	24029	Industrial Equipment	0.09622593	0.02568436	0.00407809
Kent	24029	Lawn and Garden Equipment	3.3437463	0.05302656	0.19524984
Kent	24029	Liquified Petroleum Gas	4.196E-41	7.2147E-42	1.5709E-42
Kent	24029	Logging Equipment	0.01668063	0.00190222	0.00205355
Kent	24029	Railway Maintenance	1.7174E-33	1.8037E-34	6.8674E-35
Kent	24029	Recreational Equipment	2.1461712	0.02772449	0.64436892
Kent	24029	Recreational Marine Vessels	6.04643938	0.55954433	1.56125981
Kent	24029	Underground Mining Equipment	8.7358E-35	8.4644E-35	1.7844E-35
Queen Anne's	24035	Agricultural Equipment	0.52636517	0.58343149	0.0626378
Queen Anne's	24035	Airport Ground Support Equipment	1.3476E-05	1.8614E-05	1.6493E-06
Queen Anne's	24035	Commercial Equipment	1.32120381	0.05327439	0.05235037
Queen Anne's	24035	Construction and Mining Equipment	0.2642124	0.22264789	0.03404995
Queen Anne's	24035	Industrial Equipment	0.08226691	0.03127204	0.00413238
Queen Anne's	24035	Lawn and Garden Equipment	4.40637899	0.06756084	0.25735786
Queen Anne's	24035	Liquified Petroleum Gas	4.196E-41	7.2147E-42	1.5709E-42
Queen Anne's	24035	Logging Equipment	0.02716015	0.00309537	0.00334261
Queen Anne's	24035	Railway Maintenance	2.6348E-34	2.3896E-34	4.1654E-35
Queen Anne's	24035	Recreational Equipment	1.54495023	0.0192918	0.43201601
Queen Anne's	24035	Recreational Marine Vessels	6.80200377	0.61886879	1.78088549
Queen Anne's	24035	Underground Mining Equipment	3.1806E-34	2.6943E-34	6.1719E-35
		TOTAL	27.66259	2.825230	5.11784

Appendix A-4 Nonpoint Sources CO, NOx, VOC Emissions

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	KQA	2103002000	Emissions from Commercial and Institutional bituminous coal combustion	0.0000	0.0000	0.0000
24029	KQA	2103004000	Emissions from commercial and institutional distillate oil combustion	0.0001	0.0003	0.0000
24029	KQA	2103005000	Emissions from commercial and institutional residual oil combustion	0.0000	0.0000	0.0000
24029	KQA	2103006000	Emissions from commercial & institutional natural gas combustion	0.0017	0.0020	0.0001
24029	KQA	2103007000	Emissions from commercial and institutional LPG combustion	0.0072	0.0129	0.0005
24029	KQA	2103011000	Emissions from commercial/institutional kerosene combustion	0.0000	0.0000	0.0000
24029	KQA	2104002000	Emissions from residential bituminous coal combustion	0.0001	0.0000	0.0000
24029	KQA	2104004000	Emissions from residential distillate oil combustion	0.0002	0.0006	0.0000
24029	KQA	2104006000	Emissions from residential natural gas combustion	0.0009	0.0022	0.0001
24029	KQA	2104007000	Emissions from residential LPG combustion	0.0052	0.0182	0.0007
24029	KQA	2104008100	Fireplace: general	0.0018	0.0000	0.0002
24029	KQA	2104008210	Woodstove: fireplace inserts; non-EPA certified	0.0011	0.0000	0.0003
24029	KQA	2104008220	Woodstove: fireplace inserts; EPA certified; non-catalytic	0.0005	0.0000	0.0000
24029	KQA	2104008230	Woodstove: fireplace inserts; EPA certified; catalytic	0.0001	0.0000	0.0000
24029	KQA	2104008310	Woodstove: freestanding, non-EPA certified	0.0070	0.0001	0.0016
24029	KQA	2104008320	Woodstove: freestanding, EPA certified, non-catalytic	0.0053	0.0001	0.0005
24029	KQA	2104008330	Woodstove: freestanding, EPA certified, catalytic	0.0026	0.0001	0.0004
24029	KQA	2104008400	Woodstove: pellet-fired, general	0.0002	0.0000	0.0000
24029	KQA	2104008510	Furnace: Indoor, cordwood-fired, non-EPA certified	0.0004	0.0000	0.0000
24029	KQA	2104008610	Hydronic heater: outdoor	0.0037	0.0000	0.0007
24029	KQA	2104008700	Outdoor wood burning device, NEC	0.0000	0.0000	0.0000
24029	KQA	2104009000	Residential Firelog Total: All Combustor Types	0.0000	0.0000	0.0000
24029	KQA	2104011000	Emissions from residential kerosene combustion	0.0000	0.0000	0.0000
24029	KQA	2302002100	Conveyorized Charbroiling	0.0046		0.0014
24029	KQA	2302002200	Under-fired Charbroiling	0.0136		0.0041

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	KQA	2302003000	Deep Fat Frying	0.0000		0.0008
24029	KQA	2302003100	Flat Griddle Frying	0.0011		0.0005
24029	KQA	2302003200	Clamshell Griddle Frying	0.0000		0.0000
24029	KQA	2302050000	Emissions from bakeries.			0.0000
24029	KQA	2302070001	Emissions from small breweries			0.0000
24029	KQA	2302070005	Emissions from small wineries			0.0001
24029	KQA	2401002000	Emissions from solvent-based architectural surface coatings			0.0274
24029	KQA	2401003000	Emissions from water-based architectural surface coatings			0.0329
24029	KQA	2401005000	Emissions from automobile refinishing			0.0000
24029	KQA	2401008000	Emissions from traffic paints			0.0191
24029	KQA	2401015000	Industrial surface coatings of finished wood product manufacturing			0.0004
24029	KQA	2401020000	Emissions from surface coatings of wood furniture and fixtures			0.0028
24029	KQA	2401025000	Emissions from surface coatings of metal furniture & fixtures			0.0000
24029	KQA	2401030000	Emissions from Paper, Film, and Foil			0.0000
24029	KQA	2401040000	Emissions from surface coatings of metal cans			0.0000
24029	KQA	2401060000	Emissions from Household Appliance Manufacturing			0.0000
24029	KQA	2401065000	Emissions from Electronic and Other Electrical Coatings			0.0000
24029	KQA	2401070000	Emissions from surface coatings of Motor Vehicle			0.0000
24029	KQA	2401075000	Emissions from surface coatings of Aircraft			0.0000
24029	KQA	2401080000	Emissions from surface coatings of marine			0.0057
24029	KQA	2401085000	Emissions from surface coatings of Railroads			0.0000
24029	KQA	2401090000	Emissions from surface coatings - misc. manufacturing			0.0000
24029	KQA	2401100000	Emissions from surface coatings for industrial maintenance			0.0222
24029	KQA	2401200000	Emissions from surface coatings - other categories			0.0222
24029	KQA	2415300000	Emissions from Cold Cleaning Degreasing Products: Industrial and Institutional Cleaning			0.0730
24029	KQA	2420000000	Dry Cleaners			0.0126
24029	KQA	2425000000	Graphic Arts Screen & Plateless			0.0021

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	KQA	2425010000	Graphic Arts Offset Lithography			0.0093
24029	KQA	2425020000	Graphic Arts Letterpress			0.0040
24029	KQA	2425030000	Graphic Arts Rotogravure			0.0044
24029	KQA	2425040000	Graphic Arts Flexography			0.0051
24029	KQA	2440020000	Emissions from industrial adhesives			0.0119
24029	KQA	2460100000	Commercial & Consumer Products - Personal Care Products			0.0476
24029	KQA	2460200000	Commercial & Consumer Products - Household Products			0.0143
24029	KQA	2460400000	Commercial & Consumer Products - Automotive Aftermarket Products			0.0260
24029	KQA	2460500000	Commercial & Consumer Products - Coatings and Related Products			0.0218
24029	KQA	2460600000	Commercial & Consumer Products - Adhesives and Sealants			0.0116
24029	KQA	2460800000	Commercial & Consumer Products - FIFRA - Regulated Products			0.0382
24029	KQA	2460900000	Commercial & Consumer Products - Miscellanous Products			0.0016
24029	KQA	2461020000	All Asphalt Application - Road Oil			0.0044
24029	KQA	2461021000	Cutback Asphalt Application			0.0020
24029	KQA	2461022000	Emulsified Asphalt Application			0.0034
24029	KQA	2461023000	Asphalt Roofing			0.0059
24029	KQA	2461800001	Emissions from Commercial pesticide surface application			0.0735
24029	KQA	2461800002	Emissions from Commercial pesticide soil application			0.1113
24029	KQA	2501011011	Portable Fuel Containers: Residential - Permeation			0.0019
24029	KQA	2501011012	Portable Fuel Containers: Residential - Evaporation (including Diurnal)			0.0165
24029	KQA	2501011013	Portable Fuel Containers: Residential - Transport			0.0009
24029	KQA	2501012011	Portable Fuel Containers: Commercial - Permeation			0.0002
24029	KQA	2501012012	Portable Fuel Containers: Commercial - Evaporation (Including Diurnal)			0.0032
24029	KQA	2501012013	Portable Fuel Containers: Commercial - Transport			0.0490
24029	KQA	2501060051	Tank Truck Unloading - Submerged Filling			0.0252
24029	KQA	2501060053	Tank Truck Unloading - Balanced Submerged Filling			0.0041
24029	KQA	2501060100	Emissions from Stage II refueling			0.0369

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24029	KQA	2501060201	Emissions from underground tank breathing			0.0173
24029	KQA	2501080050	Aviation Gasoline Stage I / Aircraft Refueling			0.0005
24029	KQA	2501080100	Aviation Gasoline Stage II - Aircraft Refueling			0.0003
24029	KQA	2505020030	Emissions from crude oil marine vessel unloading			0.0000
24029	KQA	2505020060	Emissions from residual oil marine vessel unloading			0.0000
24029	KQA	2505020090	Emissions from distillate oil marine vessel unloading			0.0000
24029	KQA	2505020120	Emissions from gasoline marine vessel unloading			0.0000
24029	KQA	2505020150	Emissions from jet naphtha marine vessel unloading			0.0000
24029	KQA	2505020180	Emissions from kerosene marine vessel unloading			0.0000
24029	KQA	2505030120	Emissions from tank trucks in transit			0.0012
24029	KQA	2601020000	Emissions from on-site incineration	0.0000	0.0000	0.0000
24029	KQA	2610000100	Open Burning of Yard Waste - Leaf	0.0000	0.0000	0.0000
24029	KQA	2610000400	Open Burning of Yard Waste - Brush	0.0000	0.0000	0.0000
24029	KQA	2610000500	Emissions from the Open Burning of Land Clearing Debris	0.1391	0.0041	0.0096
24029	KQA	2610030000	Open Burning of Residential Household Waste	0.1651	0.0117	0.0166
24029	KQA	2620030000	Emissions from solid waste landfills			0.0029
24029	KQA	2630020000	Emissions from POTWs			0.0004
24029	KQA	2660000000	Emissions from soil/groundwater remediation of LUST sites			0.0023
24029	KQA	2810001000	Forest Fires EPA accepted	0.0000	0.0000	0.0000
24029	KQA	2810030000	Emissions from structural fires	0.0032	0.0001	0.0006
24029	KQA	2810050000	Emissions from motor vehicle fires	0.0037	0.0001	0.0010
24029	KQA	2810060100	HUMAN CREMATION	0.0000	0.0000	0.0000
24029	KQA	2811015000	Prescribed Fires EPA accepted	0.0000	0.0000	0.0000
24029	KQA	2830000000	Emissions from catastrophic/accidental releases/oil spills			0.0002
24035	KQA	2103002000	Emissions from Commercial and Institutional bituminous coal combustion	0.0000	0.0000	0.0000
24035	KQA	2103004000	Emissions from commercial and institutional distillate oil combustion	0.0002	0.0007	0.0000
24035	KQA	2103005000	Emissions from commercial and institutional residual oil combustion	0.0000	0.0000	0.0000

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24035	KQA	2103006000	Emissions from commercial & institutional natural gas combustion	0.0031	0.0037	0.0002
24035	KQA	2103007000	Emissions from commercial and institutional LPG combustion	0.0045	0.0081	0.0003
24035	KQA	2103011000	Emissions from commercial/institutional kerosene combustion	0.0000	0.0000	0.0000
24035	KQA	2104002000	Emissions from residential bituminous coal combustion	0.0001	0.0000	0.0000
24035	KQA	2104004000	Emissions from residential distillate oil combustion	0.0003	0.0012	0.0000
24035	KQA	2104006000	Emissions from residential natural gas combustion	0.0017	0.0041	0.0002
24035	KQA	2104007000	Emissions from residential LPG combustion	0.0097	0.0341	0.0013
24035	KQA	2104008100	Fireplace: general	0.0038	0.0001	0.0005
24035	KQA	2104008210	Woodstove: fireplace inserts; non-EPA certified	0.0024	0.0000	0.0005
24035	KQA	2104008220	Woodstove: fireplace inserts; EPA certified; non-catalytic	0.0010	0.0000	0.0001
24035	KQA	2104008230	Woodstove: fireplace inserts; EPA certified; catalytic	0.0002	0.0000	0.0000
24035	KQA	2104008310	Woodstove: freestanding, non-EPA certified	0.0134	0.0002	0.0031
24035	KQA	2104008320	Woodstove: freestanding, EPA certified, non-catalytic	0.0102	0.0002	0.0009
24035	KQA	2104008330	Woodstove: freestanding, EPA certified, catalytic	0.0050	0.0001	0.0007
24035	KQA	2104008400	Woodstove: pellet-fired, general	0.0004	0.0001	0.0001
24035	KQA	2104008510	Furnace: Indoor, cordwood-fired, non-EPA certified	0.0007	0.0000	0.0000
24035	KQA	2104008610	Hydronic heater: outdoor	0.0063	0.0000	0.0012
24035	KQA	2104008700	Outdoor wood burning device, NEC	0.0000	0.0000	0.0000
24035	KQA	2104009000	Residential Firelog Total: All Combustor Types	0.0002	0.0000	0.0001
24035	KQA	2104011000	Emissions from residential kerosene combustion	0.0000	0.0000	0.0000
24035	KQA	2302002100	Conveyorized Charbroiling	0.0040		0.0012
24035	KQA	2302002200	Under-fired Charbroiling	0.0147		0.0045
24035	KQA	2302003000	Deep Fat Frying	0.0000		0.0009
24035	KQA	2302003100	Flat Griddle Frying	0.0009		0.0004
24035	KQA	2302003200	Clamshell Griddle Frying	0.0000		0.0000
24035	KQA	2302050000	Emissions from bakeries.			0.0000
24035	KQA	2302070001	Emissions from small breweries			0.0000

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24035	KQA	2302070005	Emissions from small wineries			0.0000
24035	KQA	2401002000	Emissions from solvent-based architectural surface coatings			0.0674
24035	KQA	2401003000	Emissions from water-based architectural surface coatings			0.0810
24035	KQA	2401005000	Emissions from automobile refinishing			0.0000
24035	KQA	2401008000	Emissions from traffic paints			0.0285
24035	KQA	2401015000	Industrial surface coatings of finished wood product manufacturing			0.0161
24035	KQA	2401020000	Emissions from surface coatings of wood furniture and fixtures			0.0086
24035	KQA	2401025000	Emissions from surface coatings of metal furniture & fixtures			0.0000
24035	KQA	2401030000	Emissions from Paper, Film, and Foil			0.0000
24035	KQA	2401040000	Emissions from surface coatings of metal cans			0.0000
24035	KQA	2401060000	Emissions from Household Appliance Manufacturing			0.0000
24035	KQA	2401065000	Emissions from Electronic and Other Electrical Coatings			0.0000
24035	KQA	2401070000	Emissions from surface coatings of Motor Vehicle			0.0117
24035	KQA	2401075000	Emissions from surface coatings of Aircraft			0.0000
24035	KQA	2401080000	Emissions from surface coatings of marine			0.0342
24035	KQA	2401085000	Emissions from surface coatings of Railroads			0.0000
24035	KQA	2401090000	Emissions from surface coatings - misc. manufacturing			0.0951
24035	KQA	2401100000	Emissions from surface coatings for industrial maintenance			0.0547
24035	KQA	2401200000	Emissions from surface coatings - other categories			0.0547
24035	KQA	2415300000	Emissions from Cold Cleaning Degreasing Products: Industrial and Institutional Cleaning			0.0778
24035	KQA	2420000000	Dry Cleaners			0.0372
24035	KQA	2425000000	Graphic Arts Screen & Plateless			0.0053
24035	KQA	2425010000	Graphic Arts Offset Lithography			0.0229
24035	KQA	2425020000	Graphic Arts Letterpress			0.0098
24035	KQA	2425030000	Graphic Arts Rotogravure			0.0109
24035	KQA	2425040000	Graphic Arts Flexography			0.0125
24035	KQA	2440020000	Emissions from industrial adhesives			0.0293

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24035	KQA	2460100000	Commercial & Consumer Products - Personal Care Products			0.1172
24035	KQA	2460200000	Commercial & Consumer Products - Household Products			0.0352
24035	KQA	2460400000	Commercial & Consumer Products - Automotive Aftermarket Products			0.0640
24035	KQA	2460500000	Commercial & Consumer Products - Coatings and Related Products			0.0538
24035	KQA	2460600000	Commercial & Consumer Products - Adhesives and Sealants			0.0285
24035	KQA	2460800000	Commercial & Consumer Products - FIFRA - Regulated Products			0.0942
24035	KQA	2460900000	Commercial & Consumer Products - Miscellanous Products			0.0039
24035	KQA	2461020000	All Asphalt Application - Road Oil			0.0109
24035	KQA	2461021000	Cutback Asphalt Application			0.0050
24035	KQA	2461022000	Emulsified Asphalt Application			0.0083
24035	KQA	2461023000	Asphalt Roofing			0.0145
24035	KQA	2461800001	Emissions from Commercial pesticide surface application			0.0901
24035	KQA	2461800002	Emissions from Commercial pesticide soil application			0.1406
24035	KQA	2501011011	Portable Fuel Containers: Residential - Permeation			0.0038
24035	KQA	2501011012	Portable Fuel Containers: Residential - Evaporation (including Diurnal)			0.0328
24035	KQA	2501011013	Portable Fuel Containers: Residential - Transport			0.0018
24035	KQA	2501012011	Portable Fuel Containers: Commercial - Permeation			0.0006
24035	KQA	2501012012	Portable Fuel Containers: Commercial - Evaporation (Including Diurnal)			0.0082
24035	KQA	2501012013	Portable Fuel Containers: Commercial - Transport			0.1244
24035	KQA	2501060051	Tank Truck Unloading - Submerged Filling			0.0548
24035	KQA	2501060053	Tank Truck Unloading - Balanced Submerged Filling			0.0090
24035	KQA	2501060100	Emissions from Stage II refueling			0.1442
24035	KQA	2501060201	Emissions from underground tank breathing			0.0376
24035	KQA	2501080050	Aviation Gasoline Stage I / Aircraft Refueling			0.0053
24035	KQA	2501080100	Aviation Gasoline Stage II - Aircraft Refueling			0.0029
24035	KQA	2505020030	Emissions from crude oil marine vessel unloading			0.0000
24035	KQA	2505020060	Emissions from residual oil marine vessel unloading			0.0000

State County FIPs Code	Ozone NAA	SCC (AMS)	Emission Process Description	CO (tpd)	NOX (tpd)	VOC (tpd)
24035	KQA	2505020090	Emissions from distillate oil marine vessel unloading			0.0000
24035	KQA	2505020120	Emissions from gasoline marine vessel unloading			0.0000
24035	KQA	2505020150	Emissions from jet naphtha marine vessel unloading			0.0000
24035	KQA	2505020180	Emissions from kerosene marine vessel unloading			0.0000
24035	KQA	2505030120	Emissions from tank trucks in transit			0.0030
24035	KQA	2601020000	Emissions from on-site incineration	0.0000	0.0000	0.0000
24035	KQA	2610000100	Open Burning of Yard Waste - Leaf	0.0000	0.0000	0.0000
24035	KQA	2610000400	Open Burning of Yard Waste - Brush	0.0000	0.0000	0.0000
24035	KQA	2610000500	Emissions from the Open Burning of Land Clearing Debris	0.6381	0.0189	0.0438
24035	KQA	2610030000	Open Burning of Residential Household Waste	0.1223	0.0086	0.0123
24035	KQA	2620030000	Emissions from solid waste landfills			0.0032
24035	KQA	2630020000	Emissions from POTWs			0.0008
24035	KQA	2660000000	Emissions from soil/groundwater remediation of LUST sites			0.0081
24035	KQA	2810001000	Forest Fires EPA accepted	0.0035	0.0001	0.0008
24035	KQA	2810030000	Emissions from structural fires	0.0045	0.0001	0.0008
24035	KQA	2810050000	Emissions from motor vehicle fires	0.0062	0.0002	0.0016
24035	KQA	2810060100	HUMAN CREMATION	0.0006	0.0001	0.0000
24035	KQA	2811015000	Prescribed Fires EPA accepted	0.5613	0.0124	0.1338
24035	KQA	2830000000	Emissions from catastrophic/accidental releases/oil spills			0.0005

Appendix A-5 Mobile Sources CO, NOx, and VOC Emissions)

County	VMT	CO (tpd)	NOx (tpd)	NonRefueling VOC (tpd)
Kent	0.63	4.39	0.96	0.42
Queen Anne's	2.79	14.33	3.69	1.10
TOTAL	3.42	18.72	4.65	1.52

Appendix B – 2014 Emissions Inventory Methodology Documentation