

**Region III Plan Summary**  
**Delaware -2011 Base Year Emissions Inventory for the 2008 8-Hour Ozone Standard – for**  
**New Castle and Sussex Counties**

**Title: Delaware -2011 Base Year Emissions Inventory for the 2008 8-Hour Ozone Standard – for New Castle and Sussex Counties**

**Federal Register Dates: Direct Final Rule 80 FR 59052 (October 1, 2015) Proposed Rule 80 FR 59094 (October 1, 2015)**

**EPA Effective date:** November 30, 2015

**State Submittal Date:** April 23, 2015

**Affected Area: New Castle and Sussex Counties**

**Summary of the Plan**

The Environmental Protection Agency (EPA) took direct final action to approve the 2011 base year inventories for the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS) for New Castle and Sussex Counties, submitted by the State of Delaware. The emission inventories were submitted to meet the nonattainment requirements for the marginal ozone nonattainment areas for the 2008 8-hour ozone NAAQS.

On May 21, 2012 (77 FR 30088), New Castle and Sussex Counties were designated as marginal nonattainment for the more stringent 2008 8-hour ozone NAAQS. New Castle County is part of the Philadelphia-Wilmington-Atlantic City nonattainment area for the 2008 8-hour ozone NAAQS. Sussex County is designated as the Seaford nonattainment area for the 2008 8-hour ozone NAAQS. Under section 172(c)(3) of the CAA, Delaware is required to submit comprehensive, accurate, and current inventories of actual emissions from all sources of the relevant pollutants in its marginal nonattainment areas, i.e., New Castle and Sussex Counties.

**Emissions Inventory:**

States are required under section 172(c)(3) of the CAA to develop comprehensive, accurate and current accounting of actual emissions from all sources (point, nonpoint, nonroad and on road) in the nonattainment area. The CAA Section 182 (a)(1) that areas designated as nonattainment and classified as marginal are to submit an inventory of all sources of ozone precursors no later than 2 years after the effective date of designation.

On April 23, 2015, the Delaware Department of Natural Resources and Environment Control (DE DNREC) submitted its 2011 base year inventories for the 2008 8-hour ozone NAAQS for its marginal nonattainment areas of New Castle and Sussex Counties. The 2011 base year inventories include emissions estimates that cover the general source categories of stationary point sources, stationary nonpoint sources, nonroad mobile sources and onroad mobile sources. The pollutants that comprise the inventory are NO<sub>x</sub>, VOCs, and CO.

Tables 1 and 2 summarize the 2011 VOC, NO<sub>x</sub> and CO emission inventory by source sector for New Castle and Sussex Counties. Annual emissions are given in tons per year (tpy), and summer weekday emissions are given in tons per day (tpd).

**Table 1. New Castle County 2011 Emissions**

Source Sector	Annual (tpy)			Summer Weekday (tpd)		
	VOC	NO <sub>x</sub>	CO	VOC	NO <sub>x</sub>	CO
Point	819	2,750	3,649	2.97	12.02	12.32
Non-Point	4,882	1,324	3,425	11.39	2.11	2.24
Onroad	3,285	7,495	37,489	8.85	20.65	91.58
Nonroad	1,989	3,577	20,688	7.04	11.19	79.33
Total	10,975	15,146	65,251	30.25	45.97	185.47

**Table 2. Sussex County 2011 Emissions**

Source Sector	Annual (tpy)			Summer Weekday (tpd)		
	VOC	NO <sub>x</sub>	CO	VOC	NO <sub>x</sub>	CO
Point	815	2,456	442	4.94	12.10	1.60
Non-Point	2,177	478	2,463	5.95	0.86	2.05
Onroad	2,974	4,702	28,323	8.86	14.87	78.67
Nonroad	2,558	3,045	16,917	8.47	10.02	60.50
Total	8,524	10,681	48,145	28.22	37.85	142.82

EPA's guidance for emissions inventory development calls for actual emissions to be used in the base year inventory. DE DNREC developed the point source data for the 2011 base year inventory using emissions directly reported by the facilities. For the 2011 nonpoint source emissions, also known as "area sources," DE DNREC estimated emissions by multiplying an emission factor by some known indicator of collective activity for each source category by county. These emissions are typically calculated on an annual basis, because activity data are generally only available on an annual basis. DE DNREC converted the annual emissions to seasonal emissions.

DE DNREC has submitted data from EPA's National Emissions Inventory (NEI), version 1, for the onroad inventory. The NEI onroad emissions inventory was developed using the EPA's highway mobile source emissions model, MOVES 2010a. DE DNREC prepared the 2011 nonroad mobile source inventory using EPA's NONROAD2008a model, which estimates fuel consumption and emissions for all nonroad mobile source categories except for aircraft, locomotives, and commercial marine vessels. Aircraft emissions were estimated using the Federal Aviation Administration's (FAA) Emissions and Dispersion Modeling System (EDMS). Locomotive emissions were calculated using company provided fuel consumption data. Commercial marine vessel emissions were calculated using specific activity and operation data for each vessel. DE DNREC reported annual emissions and ozone season day emissions. EPA reviewed DE DNREC's 2011 base year emission inventories for New Castle and Sussex Counties and determined that the results obtained and the procedures and methodologies used are acceptable and approvable.

**Final Action**

Pursuant to section 172(c) of the CAA, EPA approved the 2011 base year emissions inventories for New Castle and Sussex Counties submitted by the State of Delaware for the 2008 8-hour ozone NAAQS as revisions to the Delaware's SIP.

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