

Region 3 Plan Summary Metropolitan Washington, DC Carbon Monoxide Maintenance Area

Title: Carbon Monoxide Maintenance Plan for the Metropolitan Washington, D.C. Area

Federal Register Dates: January 30, 1996, 61 FR 2982 (proposed rule), 61 FR 2931 (Final rule); April 4, 2005, 70 FR 17028 (proposed rule), 70 FR 16958 (final rule).

EPA Effective date: March 15, 1996; revised, effective June 3, 2005.

State Submittal Dates: District of Columbia: October 12, 1995, March 9, 2004.
Maryland: October 12, 1995, March 3, 2004.
Virginia: October 4, 1995, March 22, 2004.

Affected Areas: **District of Columbia-** Entire District
Maryland- Montgomery County: Election Districts 4, 7, and 13
Prince George's County: Election Districts 2, 6, 12, 16, 17, and 18
Virginia- Arlington County, Alexandria City

Summary of the Plan: The National Ambient Air Quality Standard (NAAQS) for CO is 9.5 parts per million (ppm). The Washington CO nonattainment area had a design value of 11.6 ppm (based on 1988 and 1989 data), and therefore was classified as moderate. The CAA established an attainment date of December 31, 1995, for all moderate CO areas. The Metropolitan Washington area has ambient air quality monitoring data showing attainment of the CO NAAQS from 1988 through 1995. Therefore, the District of Columbia, Maryland and Virginia each submitted a redesignation request to attainment, along with a maintenance plan, for their respective portions of the DC area, covering the period 1996 - 2007. EPA approved this redesignation request and maintenance plan, effective March 16, 1996.

The Metropolitan Washington Council of Governments prepared a Revised Carbon Monoxide Maintenance Plan and Revised 1990 Carbon Monoxide Base Year Emissions Inventory for the Washington DC-MD-VA Maintenance Area, dated February 19, 2004. This plan was prepared jointly by representatives of the District of Columbia, Maryland and Virginia; and subsequently each entities' environmental agency submitted the plan under separate cover to become a part of each entities' State Implementation Plan upon EPA approval. The revised maintenance plan provides for continued attainment of the CO standard in the Washington Metropolitan attainment area through March 16, 2016. Emissions projections to the year 2016, from this maintenance plan, are consistent with ambient CO levels below the NAAQS.

Control Measures/Regulations Included As Part of the Plan: Enhanced Vehicle Emissions I/M programs in each jurisdiction, Reformulated Gasoline (on-road), Federal Tailpipe Standards and Regulations (including on-road and off-road sources and small engines), and reductions in stationary sources from implementation of BACT (Best Available Control Technology, and other combustion improvements).

Virginia, Maryland, and the District of Columbia have demonstrated that actual enforceable

emission reductions are responsible for the air quality improvement and that the CO emissions in the base year are not artificially low due to local economic downturn. With the exception of the LEV program and on-board diagnostics controls, all these measures are permanent and enforceable because they are either an existing program in the State and part of the federally approved SIP (e.g., basic I/M, stage II vapor recovery) or are a federally implemented program (e.g., reformulated gasoline, FMVCP, or Tier I controls on new vehicles). In addition, EPA has approved the District of Columbia, Maryland, and Virginia's general conformity procedures, as summarized below. The transportation conformity procedures are Federal requirements promulgated at 40 CFR Part 93.

EPA Approval of General Conformity Actions (FR Date and Cite)		
District of Columbia	Maryland	Virginia
6/5/03 68 FR 33638	12/9/99 64 FR 67782	2/17/2000 65 FR 8051; revised 1/7/03 68 FR 663

Emissions Inventories: The use of a 1990 base- year inventory for this purpose is acceptable, since the area was monitoring attainment during this time period. The emissions inventory covers the carbon monoxide emissions of the Washington DC-MD-VA nonattainment area on a typical winter season weekday. The inventory includes emissions from the District of Columbia, Arlington County, and the City of Alexandria in Virginia, and Montgomery and Prince George's County in Maryland. For convenience, the entire emissions of Montgomery and Prince George's counties are included in the inventory despite the fact that only a portion of those counties was originally designated nonattainment. In 2002 and 2003, the Metropolitan Washington Air Quality Committee (MWAQC) made changes to the method, using the MOBILE6 emissions model, for calculating emissions from mobile sources, which resulted in revisions to the 1990 Base Year Inventory. The revised base-year inventory is based upon actual "typical CO season days" which occur during December, January, and February.

As part of the submitted maintenance plan, DC, MD and VA used the following figures for the CO inventory:

Source Category	1990 Base Year Revised CO Emissions (tpd)			
	DC	MD	VA	Total
Mobile	539.1	1724.8	325.5	2589.5
Area	15.9	71.4	9.9	97.1
Stationary	3.3	6.2	0.9	10.4
Non-Road	16.3	60.9	16.8	94.0
TOTAL	574.7	1836.2	353.0	2791.0

Source Category	2007 Projected Emissions (tpd)	2016 Projected Emissions
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(tpd)

	DC	MD	VA	Total	DC	MD	VA	Total
Mobile	171.4	697.1	121.1	989.5	131.5	545.88	96.95	774.2
Area	16.8	85.5	11.9	114.1	18.5	92.4	13.3	124.2
Stationary	2.9	6.6	0.9	10.3	2.7	6.4	0.7	9.8
Non-Road	13.7	64.7	17.1	95.6	13.3	65.9	14.4	93.6
TOTAL	204.7	853.8	151.0	1209.5	166.0	710.5	125.3	1001.8

Maintenance Demonstration: This maintenance demonstration for CO calculates future emissions of the pollutant out to the year 2016, and projects that the level of emissions will not exceed the level emitted in the attainment inventory. Since the Washington MD-MD-VA CO nonattainment area was classified as a moderate CO area, with a design value less than 12.7 ppm, the areas were not required to do further modeling to demonstrate attainment of the CO standard. The use of 2016 as the projected year allows ample time for EPA to process the request.

In projecting the inventory to 2000 and 2016, MWAQC applied the appropriate growth factors to the revised 1990 Base-Year Emission Inventory. Round 6.3 Cooperative Forecasting results (population, household and employment projections), which are prepared and officially adopted by the Metropolitan Washington Council of Governments, were used to project emissions from area and nonroad sources. The Economic Growth Analysis System (EGAS) model was used to project growth in point source emissions. Projections for the on-road emissions were developed using MOBILE6 and Version 2.1 Travel Demand Model developed by the National Capital Region Transportation Planning Board.

Monitoring Network: The monitoring data is quality assured in accordance with 40 CFR 58, and EPA has repeatedly verified the integrity of the Washington DC-MD-VA area's air monitoring network. In addition, EPA approved the site selection of each CO monitor, and EPA agrees that the air monitoring network serves as a reliable indicator of ambient concentrations of air pollutants. The Metropolitan Washington area currently has air quality monitors sampling carbon monoxide levels at eight locations across the region. These monitors are located in regions likely to have the highest concentrations of CO. Monitored data are quality assured using precision check, calibrations, audits, statistical analyses and selective data editing to ensure that readings are valid and useful.

Verification of Continued Attainment: CO inventories will be included as part of the Consolidated Emission Reporting Rule (CERR) during the maintenance period to make sure that the Washington Metropolitan attainment area remains in compliance with the CO NAAQS. The Metropolitan Washington region has remained in attainment for the federal 8-hour standard for carbon monoxide since its redesignation in 1996. Monitor data for the nonattainment area continue to show downward trends in the ambient levels of CO. Current and projected inventories also remain below the attainment inventory.

Contingency Plan: Each of the three jurisdictions continue to designate the oxygenated fuel program as a contingency measure for the region’s maintenance plan. The states propose to re-implement the oxygenated fuels program if a monitor in the network were to detect two exceedances in one calendar year. Implementation of an oxygenated fuels program would increase the percentage oxygenate requirement to 2.7% from the 2.0% currently mandated under the region’s reformulated gasoline program. The current SIP-approved contingency measures involving the DC Area oxygenated fuel rules are summarized below:

Regulation	EPA Approval (FR Date and Cite)		
	District of Columbia	Maryland	Virginia
Oxygenated Fuels (as a contingency measure)	5/9/01 66 FR 23645	6/10/94 58 FR 29957; revised 1/30/96 61 FR 2931	10/21/97 62 FR 54585 revised 1/7/03, 68 FR 663

Conformity and Mobile Emissions Budget: Since mobile source estimates were updated during the development of this SIP revision, using updated planning assumptions and the MOBILE6 model, a revised estimate of the 1990 attainment year inventory has been calculated. This revised estimate of 2589.5 tpd for the area is higher than the estimate of 1671.5 tpd included in the 1995 plan as the attainment year inventory. However, the emissions budget will remain at 1671.5 tpd (which is equal to 90% of the 1990 attainment year inventory, as projected in the 1995 plan). The CO budget for the Washington DC-MD-VA maintenance area is ascribed as follows: 369.3 tpd for the District of Columbia, 1045.1 tpd for the Maryland area, and 257.0 tpd for the Virginia area, totaling 1671.5 tpd for the entire maintenance area.

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