

## **Region 3 Plan Summary**

### **Baltimore, Maryland Area Carbon Monoxide Maintenance Area**

**Title:** Carbon Monoxide Maintenance Plan for the Baltimore, Maryland Area

**Federal Register Dates:** October 31, 1995, 60 FR 55358 (proposed rule), 61 FR 55321 (final rule); April 4, 2005, 70 FR 17028 (proposed rule), 70 FR 16958 (final rule).

**EPA Effective date:** December 15, 1995; revised, effective June 3, 2005.

**State Submittal Date:** September 20, 1995; revision submitted on July 15, 2004.

**Affected Area:** Baltimore City- Regional Planning District No. 118, generally corresponding to the Central Business District. The boundaries are (starting from the North and continuing clockwise): the Jones Falls Expressway, the Fallsway, the Baltimore Harbor, and Warren, Henrietta, Greene, Pratt, Fremont, Mulberry, Martin Luther King Boulevard, and Howard Streets.

**Summary of the Plan:** The National Ambient Air Quality Standard (NAAQS) for CO is 9.5 parts per million (ppm). Since the Baltimore CO nonattainment area had a design value of 9.6 ppm (based on 1988 and 1989 data), the area was classified as moderate. The CAA established an attainment date of December 31, 1995, for all moderate CO areas. The Baltimore City Central Business District (CBD) has ambient air quality monitoring data showing attainment of the CO NAAQS from 1989 through 1995. Therefore, Maryland submitted a CO redesignation request and a maintenance plan for the Baltimore City CBD. Maryland established the 1990 inventory as the attainment inventory and forecasted future emissions out to the year 2007. EPA approved the redesignation request and maintenance plan, effective December 15, 1995.

The revised maintenance plan provides for maintenance of the carbon monoxide standard for an additional ten years. This maintenance plan is submitted to fulfill that requirements, and provides for continued attainment of the CO standard in the Baltimore attainment area through December 15, 2015. Emissions projections to the year 2015, from this maintenance plan, are consistent with ambient CO levels below the NAAQS.

**Control Measures/Regulations Included As Part of the Plan:** The Federal Motor Vehicle Control Program (FMVCP), the 1992 Reid Vapor Pressure Programs, Tier I and Tier II controls, Evaporative Emission Control Program, Federal Reformulated Gasoline Program Phase I and Phase II, Enhanced Inspection and Maintenance, Low Emission Vehicles, and On-Board Controls. The VMT estimates were predicted through the use of Round 6 demographic data and the transportation demand model, TP Plus, and combustion efficiency improvements by stationary sources through the Best Available Control Technology (BACT) requirements. The BACT requirements are enforceable through the State's SIP-approved Prevention of Significant Deterioration (PSD) program and general conformity procedures, as well as the transportation conformity procedures are promulgated at 40 CFR Part 93.

**Emissions Inventories:** The 1990 emission inventory was selected as representative of the

Baltimore City CBD emissions during the period showing attainment, since the area was monitoring attainment during this time period. Maryland's base year inventory is based upon actual "typical CO season days" which occur during December, January, and February. The original 1990 Base-Year Carbon Monoxide Inventory was submitted by Maryland to EPA on January 13, 1994, and was used as the basis for the calculations in the area's first maintenance plan. The emissions inventory covers the carbon monoxide emissions of six jurisdictions in the Baltimore MSA on a typical winter season weekday – Anne Arundel County, Baltimore County, Baltimore City, Howard County, Harford County, and Carroll County. In 2002 and 2003, MDE changed the method for calculating emissions from on-road mobile sources to use EPA's latest mobile emissions model, MOBILE6. This change resulted in revisions to the 1990 base-year inventory. The revised 1990 base-year inventory is presented below:

**CO Emissions Inventory (Tons per Day)**

<b>Source Category</b>	<b>1990 Base Year CO Emissions</b>	<b>1990 Base Year Revised CO Emissions</b>	<b>2015 Projected CO Emissions</b>
<b>On-road mobile</b>	1789.80	2454.10	956.10
<b>Non-road Mobile</b>	223.28	223.28	296.76
<b>Mobile</b>	116.47	116.47	129.05
<b>Stationary</b>	375.25	375.25	554.24
<b>Totals</b>	2504.80	3169.10	1936.15

**Demonstration of Maintenance-Projected Inventories:** MDE's maintenance demonstration for CO calculates future emissions of the pollutant out to the year 2015, and projects that the level of emissions will not exceed the level emitted in the attainment inventory. Since the Baltimore CO nonattainment area was classified as a moderate CO area, with a design value less than 12.7 ppm, the state was not required to do further modeling to demonstrate attainment of the CO standard. MDE's use of 2015 as the projected year allows ample time for EPA to process the request.

In projecting the inventory to 2015, MDE applied the appropriate growth factors to the revised 1990 Base-Year Emission Inventory. MDE projected future year emissions from area sources by multiplying the base-year inventory with household, population and employment growth factors derived from 2000 census data. The Economic Growth Analysis System (EGAS) model was used to project growth in point and nonroad source emissions. Projections for the on-road emissions were developed using TP Plus travel demand model and the MOBILE6 emissions factor model.

**Motor Vehicle Emissions Budget:** For conformity purposes, Maryland has stated in this revised maintenance plan that it will retain the mobile budget of 1689.8 tpd CO (set at 100 tpd below the

attainment year inventory). By 2015, Maryland predicts that the on-road portion of the CO inventory will drop to 956 tpd. New long-range and short-range transportation programs are tested against this budget by the Baltimore Regional Transportation Board (BRTB).

**Monitoring Network:** The monitoring data is quality assured in accordance with 40 CFR 58, and EPA has repeatedly verified the integrity of Maryland'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.

**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 Baltimore Attainment area remains in compliance with the CO NAAQS. In addition, MDE will periodically conduct a comprehensive review of the factors that were used to develop the attainment inventory and project the CO emissions levels for 2015. If there are significant differences between the actual and project growth, then MDE commits to creating updated emissions inventories to compare with the projections.

**Contingency Measures:** MDE adopted, and EPA approved, the oxygenated fuel program as a contingency measure. If a monitor in the Central Business District experiences a violation of the CO standard – two exceedances of the standard within one year, then the oxygenated fuel program will automatically resume the following CO season.

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