

**Region 3 Plan Summary**  
**Philadelphia County, Pennsylvania Carbon Monoxide Maintenance Area**

**Title:** Carbon Monoxide Maintenance Plan for the Philadelphia County, Pennsylvania Area

**Federal Register Dates:** January 30, 1996, 61 FR 2982 (proposed rule), 61 FR 2926 (final rule); April 4, 2005, 70 FR 17028 (proposed rule), 70 FR 16958 (final rule); October 5, 2007, 72 FR 56975 (proposed rule), 72 FR 56911 (proposed rule).

**EPA Effective date:** March 15, 1996; revised, effective June 3, 2005 and December 4, 2007.

**State Submittal Date:** September 8, 1995; revisions submitted October 30, 1995, September 3, 2004, and March 19, 2007.

**Affected Areas:** City of Philadelphia- Areas of high traffic density within the Central Business District (CBD) and certain other high traffic density areas. The CBD is generally defined as the area in Philadelphia bounded to the north by Vine Street, to the south by South Street, to the west by the Schuylkill River, and to the east by the Delaware River.

**Summary of the Plan:** The National Ambient Air Quality Standard (NAAQS) for CO is 9.5 parts per million (ppm). Philadelphia County is part of the Philadelphia-Camden County CO nonattainment area. Since the Philadelphia CO nonattainment area had a design value of 11.6 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.

Pennsylvania submitted a CO maintenance plan in 1995, covering the period 1997 - 2007. The CO maintenance plan for the Philadelphia Area contained the following provisions: A 1990 emission inventory with periodic updates, adoption of an oxygenated fuels program, the development of contingency measures, and development of conformity procedures. In 1996, EPA redesignated the carbon monoxide nonattainment area in the Philadelphia Central Business District and approved this maintenance plan, effective March 15, 1996.

On September 3, 2004, Pennsylvania formally submitted a State Implementation Plan (SIP) revision which revises the maintenance plan and provides for continued attainment of the CO standard in the Philadelphia attainment area through 2017. Emissions projections to the year 2017 from this revised maintenance plan are consistent with ambient CO levels below the NAAQS.

On March 19, 2007, Pennsylvania formally submitted a State Implementation Plan (SIP) revision which revises the maintenance plan by converting it to a limited maintenance plan for the years 2007 through 2017. This conversion allows Federal actions requiring conformity determinations to be considered as automatically satisfying the budget test for carbon monoxide.

**Control Measures/Regulations Included As Part of the Plan:** Pennsylvania's maintenance plan assumed the following emission control programs, which are or will be permanent and

enforceable measures: Federal Motor Vehicle Control Program (FMVCP ), reformulated gasoline, and the state inspection and maintenance (I/M) program. The impact of these programs provides for emission to remain well below those that brought about the attainment of the NAAQS for the area.

**Emissions Inventories:** EPA guidance recommends that the CO attainment inventory be based upon actual "typical CO season day" emissions for the attainment year. This generally corresponds to one of the periodic inventories required for nonattainment areas.

The maintenance plan for the first 10-year maintenance period contained a base-year inventory of 1990. This inventory was used to develop the inventories for the attainment year (1992) and future years to 2007. The anticipated change in emissions levels from the attainment year was used to estimate the future air quality levels.

Pennsylvania’s analysis in this second 10-year maintenance plan documents a base-year inventory of 2002. The 2002 emission inventory was selected because it is current and representative of the emissions in Philadelphia County during the period air quality data has shown maintenance of the CO NAAQS. The inventory contains emission estimates of point, area, highway and nonroad sources of CO in Philadelphia County for the year, and for a typical CO season workday. The CO season is defined as the months of December, January and February. The 2002 inventory will be used to project point and area emissions to future years.

**CO Emissions Inventory -Tons per Day (tbd)<sup>1</sup>**

<b>Source Category</b>	<b>1990</b>	<b>2002</b>	<b>2007</b>	<b>2017</b>
<b>Point</b>	20.98	8.38	8.90	9.55
<b>Area</b>	13.77	16.96	17.45	18.76
<b>Highway</b>	608.99	434.70	331.25	260.97
<b>Non-road</b>	9.62	101.30	112.29	134.04
<b>Totals</b>	653.36	561.34	469.89	423.32

**Maintenance Demonstration:** Pennsylvania’s maintenance demonstration for CO calculates future emissions of the pollutant out to the year 2017, and projects that the level of emissions will not exceed the level emitted in the attainment inventory. Since the Philadelphia 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. Philadelphia’s use of 2017 as the projected year allows ample time for EPA to process the request.

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<sup>1</sup> As revised by the use of the MOBILE6 emissions model

In projecting the inventory to 2017, Pennsylvania applied the appropriate growth factors to the revised Base-Year Emission Inventory. Future year inventories were projected from the 2002 inventory by accounting for growth in the activity of an emission source category and any expected controls. As per EPA guidance, Pennsylvania used product output, value added, earnings, and employment as indications of growth. EGAS Model Version 4 was used to project growth in point and nonroad source emissions. EGAS provided state specific historical data for projection estimates for 2007, 2013 and 2017. Projections for the on-road emissions were developed using the MOBILE6.2 emissions factor model.

**Conformity Budgets:** Pennsylvania has submitted new transportation conformity budgets that will supercede the previous allowances. Highway CO emissions will now be capped as follows: 331.25 tpd in 2007, 278.23 tpd in 2013, and 260.97 tpd in 2017.

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

**Verification of Continued Attainment:** Pennsylvania will continue to operate an air quality monitoring network, and the Department has committed to investigate should ambient levels of CO rise and threaten to exceed the NAAQS. CO inventories will be included as part of the Consolidated Emission Reporting Rule (CERR) during the maintenance period to make sure that the Philadelphia Attainment area remains in compliance with the CO NAAQS.

**Contingency Plan:** Pennsylvania has revised its existing oxygenated fuel program rule, at Chapter 126.1 of Title 25 of the Pennsylvania Code, to permit the use of oxygenated fuel as a contingency measure in the Philadelphia region, if required. If triggered, implementation would commence at the beginning of the following control season. The trigger for such a measure would be a measured violation of the NAAQS for CO.

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