

**The State of New Jersey
Department of Environmental Protection**

**State Implementation Plan (SIP) Revisions for
the Attainment and Maintenance of the
8-Hour Carbon Monoxide National Ambient Air Quality Standard
Carbon Monoxide Maintenance and Monitoring Plan**

June 2015

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*Attachment 1	History of New Jersey’s CO State Implementation Plans
*Attachment 2	USEPA Limited Maintenance Plan Guidance dated October 6, 1995
*Attachment 3	2007 Winter CO Inventory Development
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*Attachment 5	2007 Area Source Calculation Methodology Sheets
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*Attachment 7	2007 Onroad Winter Daily CO Inventory
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*Attachment 9A	2007 Nonroad Winter Daily CO Inventory
*Attachments 9B-E	2007 Nonroad Files

* **NOTE:** These attachments are only available electronically

Acronyms and Abbreviations

AERR	Air Emissions Reporting Requirements
CERR	Consolidated Emission Reporting Rule
CFR	Code of Federal Regulations
CO	Carbon Monoxide
FMVCP	Federal Motor Vehicle Control Program
FR	Federal Register
I/M	Inspection and Maintenance
MTBE	Methyl-tertiary-butyl ether
NAAQS	National Ambient Air Quality Standards
NH ₃	Ammonia
NJDEP	New Jersey Department of Environmental Protection
NO _x	Oxides of Nitrogen
PM ₁₀	Particulate Matter less than 10 micrometers in diameter
PM _{2.5}	Particulate Matter less than 2.5 micrometers in diameter
ppm	Parts Per Million
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
TCM	Transportation Control Measure
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

I. Introduction

The Clean Air Act 42 U.S.C. §7401 et seq. (Section 101) requires all areas of the nation to attain and maintain compliance with the National Ambient Air Quality Standards. These standards are designed to protect public health and welfare from specific pollutants. For carbon monoxide, there are two primary standards: an average 1-hour standard of 35 parts per million (ppm) and a non-overlapping average 8-hour standard of 9 ppm.

The Clean Air Act also provides for states to submit revisions to their State Implementation Plans (SIP) whenever states' programs are modified from the existing SIP. This document establishes the following revisions to the existing New Jersey SIP:¹

- Limited Maintenance Plan for carbon monoxide for the New Jersey portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area; This second ten-year maintenance plan will cover the period from January 1, 2015 – December 31, 2024.
- Changes to the air monitoring network for carbon monoxide.

A summary of the history of New Jersey's previous SIP revisions for carbon monoxide is included in Attachment 1.

II. Carbon Monoxide Limited Maintenance Plan for the New Jersey portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Maintenance Area

A. Background

In 2002, New Jersey submitted a request to the USEPA to redesignate the New Jersey portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment area to attainment.² The SIP revision included a maintenance plan that covered the period from USEPA approval of the plan to December 31, 2014. The USEPA subsequently approved the State's Plan on August 23, 2002.³

This SIP revision includes the second ten-year maintenance plan for this area and will cover the period from January 1, 2015 to December 31, 2024. This SIP revision demonstrates continued compliance with the carbon monoxide health-based standard, describes how the State will continue to maintain the carbon monoxide National Ambient Air Quality Standard through December 31, 2024 in this area, and provides a contingency plan that would be implemented should the State ever again violate the carbon monoxide standard in this area.

Attainment and maintenance of the carbon monoxide health standard represents a significant health benefit to the citizens of New Jersey. Carbon monoxide has significant health effects when present in levels above the standard. An odorless, colorless gas, carbon monoxide is

¹ Clean Air Act 42 U.S.C. §7410

² NJDEP, SIP Revision for the Attainment and Maintenance of the Carbon Monoxide NAAQS, Redesignation Request and Maintenance Plan for the New Jersey Portion of the New York/Northern New Jersey/Long Island Carbon Monoxide Nonattainment Area, January 15, 2002.

³ 67 Fed. Reg. 54574 (August 23, 2002)

readily absorbed by the body through the lungs and can reduce the amount of oxygen that reaches the heart, brain, and other tissues. Exposure to elevated carbon monoxide levels has been linked to adverse health effects and can be especially harmful to children, people with heart disease, and pregnant women. At moderate levels, carbon monoxide exposure has been linked to symptoms such as dizziness, nausea, fatigue, poor vision and concentration, headaches, and heart pains. Exposure to extremely high levels of carbon monoxide may result in unconsciousness and death.

A violation of the National Ambient Air Quality Standard is measured based on two years of data (two year design value). For 8-hour CO, if the area has a design value greater than 9 ppm, it means there was a monitoring site where the second highest 8-hour average was greater than 9 ppm in at least one year. Therefore, a monitoring site is in violation of the 8-hour standard if it experiences two or more exceedances of the 9 ppm standard within any calendar year.

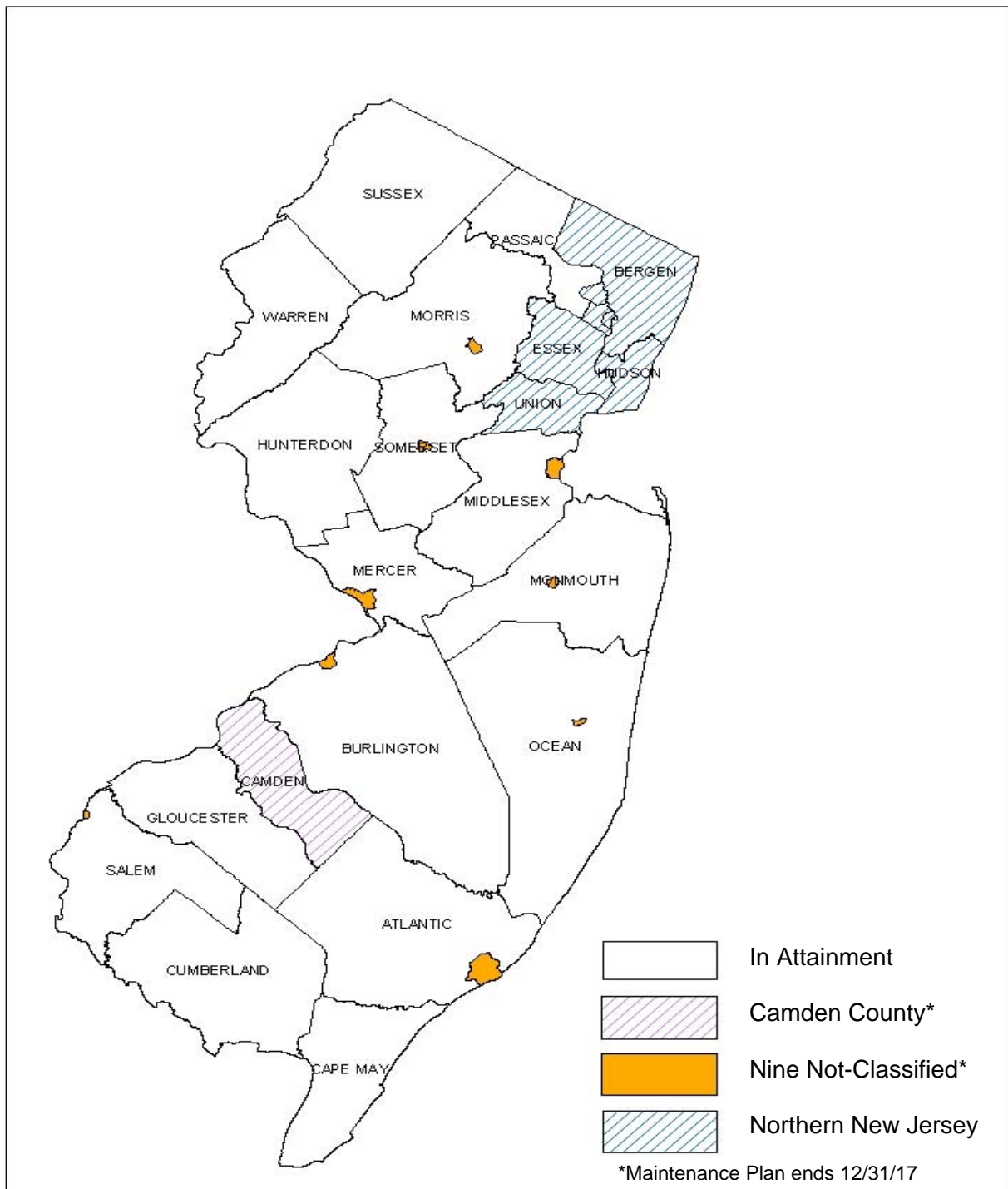
Carbon monoxide concentrations in New Jersey have not exceeded the 1-hour standard since the late 1970s. Typical 1-hour maximum concentrations in New Jersey in recent years have been less than 7 ppm, well below the 35 ppm level. The last exceedance of the 8-hour carbon monoxide standard was in 1995. Typical 8-hour carbon monoxide levels are less than two ppm. New Jersey's noncompliance of the 8-hour carbon monoxide standard prior to 1996 was due primarily to onroad mobile sources and was limited to specific areas during stagnating meteorological conditions.

Based on prior violations of the 8-hour carbon monoxide standard, New Jersey had eleven nonattainment areas, all of which have since been redesignated to attainment and are currently considered maintenance areas. New Jersey's two 8-hour carbon monoxide maintenance plans cover the following areas of the State:

- 1) The New Jersey portion of the Northern New Jersey-New York-Long Island maintenance area (also referred as the Northeastern New Jersey carbon monoxide maintenance area) - Hudson, Essex, Bergen and Union Counties, and the municipalities of Clifton, Passaic and Paterson in Passaic County.
- 2) Camden County (All of Camden County) and the Nine Not-Classified Areas - the City of Atlantic City (in Atlantic County), the City of Burlington (in Burlington County), the Borough of Freehold (in Monmouth County), the Town of Morristown (in Morris County), the Borough of Penns Grove (in Salem County), the City of Perth Amboy (in Middlesex County), the Borough of Somerville (in Somerset County), the Toms River Area (in Ocean County), and the City of Trenton (in Mercer County)

New Jersey's 8-hour carbon monoxide maintenance areas are shown in Figure I.

Figure 1
New Jersey Carbon Monoxide Maintenance Areas



The Northeastern New Jersey carbon monoxide nonattainment area was redesignated by the USEPA as an attainment area in 2002. New Jersey's attainment demonstration submittal, dated August 7, 1998, showed that the 8-hour design values for carbon monoxide at New Jersey's monitoring sites in the Northeastern carbon monoxide nonattainment area fell below the standard beginning in 1996.⁴ The first maintenance plan and contingency measures for this area covered the 12-year period, 2002-2014.

New Jersey's other ten carbon monoxide maintenance areas, Camden County and the Nine Not-Classified Areas, were classified as moderate nonattainment in 1989. No violation of the 8-hour average carbon monoxide standard has occurred in any of the nine not-classified areas since 1986. The Camden County area and the Nine Not-Classified areas were redesignated by the USEPA as attainment areas in 1996.⁵ New Jersey's first ten-year maintenance plans⁶ (which included contingency measures) for the Camden County area and the Nine Not-Classified areas covered a 12-year period (1995–2007). The second ten year maintenance plan for these areas covers a 10-year period (January 1, 2008 - December 31, 2017).

B. Air Quality Update

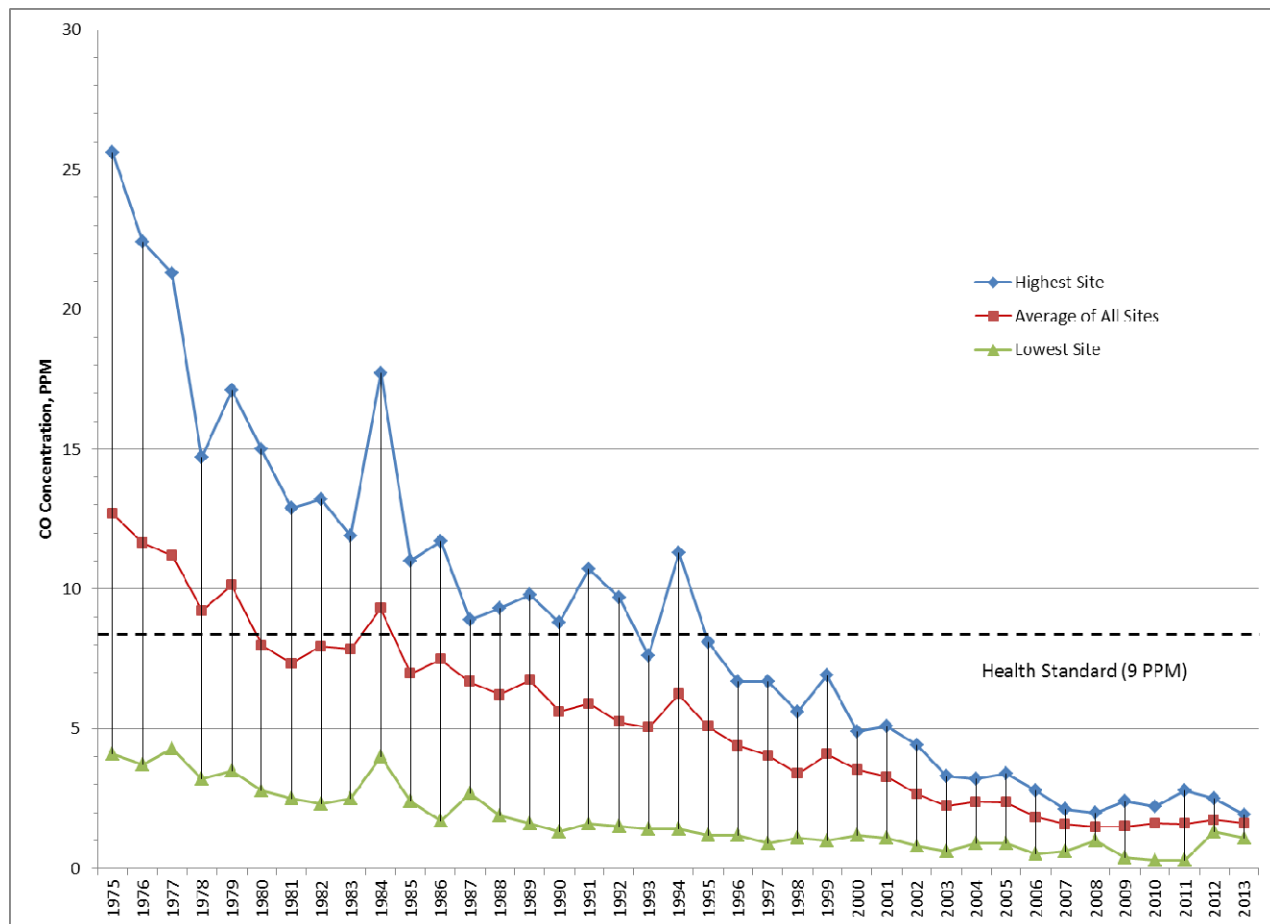
Carbon monoxide concentrations in the ambient air have improved dramatically in New Jersey over the past thirty years and are currently less than half of the standard. The last time the carbon monoxide 8-hour National Ambient Air Quality Standard was exceeded in New Jersey was in January of 1995. Figure II shows the second highest 8-hour value recorded throughout the monitoring network during each year.

⁴ SIP Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards, Attainment Demonstration for the New Jersey Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area, New Jersey Department of Environmental Protection, August 7, 1998.

⁵ SIP Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards, Redesignation Request and Maintenance Plan for the New Jersey Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area, New Jersey Department of Environmental Protection, January 15, 2002.

⁶ New Jersey Carbon Monoxide State Implementation Plan, Redesignation And Maintenance Plan For Camden County, New Jersey Department of Environmental Protection, September 29, 1995, and New Jersey Carbon Monoxide State Implementation Plan, Redesignation and Maintenance Plan for the Nine Not-Classified Areas, New Jersey Department of Environmental Protection, September 29, 1995.

Figure 2
Carbon Monoxide Monitoring Trend in New Jersey, 1975-2013
Second Highest 8-Hour Values



New Jersey's carbon monoxide design values for the years 2006-2007 through 2012-2013 (preliminary 2013 data) are shown in Table 1. As seen in the table, the design values are well below the standard of 9 ppm.

Table 1
Design Values for Carbon Monoxide in New Jersey
(8-hour NAAQS - 9 parts per million (ppm))

Monitoring Location	Monitor ID	County	2006-2007 Design Value (ppm)	2007-2008 Design Value (ppm)	2008-2009 Design Value (ppm)	2009-2010 Design Value (ppm)	2010-2011 Design Value (ppm)	2011-2012 Design Value (ppm)	2012-2013 Preliminary Design Value (ppm)
Ancora S.H.	340071001	Camden	0.6	2.0	0.4	0.4	0.3	No data 2012*	No data 2013*
Burlington	340051001	Burlington	1.4	1.4	1.4	1.3	No data 2010-2011*	No data 2011-2012*	No data 2013*
East Orange	340131003	Essex	2.1	2.1	2.4	2.4	2.6	2.6	1.9
Camden Spruce Street	340070002	Camden	NA	NA	NA	NA	NA	1.4**	1.3
Elizabeth	340390003	Union	1.9	2.1	2.1	2.1	2.1	2.1	1.8
Elizabeth Lab	340390004	Union	2.0	1.5	1.8	1.9	1.9	1.7	1.3
Fort Lee	340030004	Bergen	1.5	1.1	1.3	1.3	No data 2010-2011*	No data 2011-2012*	No data 2013*
Freehold	340252001	Monmouth	1.4	1.6	1.4	1.9	1.9	No data 2012*	No data 2013*
Hackensack	340035001	Bergen	1.8	1.6	1.7	1.7	No data 2011*	No data 2011-2012*	No data 2013*
Jersey City	340171002	Essex	1.9	1.7	1.8	1.7	1.7	2.5	2.5
Morristown	340270003	Morris	1.2	1.3	1.0	1.0	1.1	No data 2012*	No data 2013*
Newark Firehouse	340130003	Essex	NA	NA	NA	2.2***	2.8	2.8	1.9
Perth Amboy	340232003	Middlesex	1.5	1.2	1.4	1.4	1.4	No data 2012*	No data 2013*

Notes:

- * Data not available due to monitor shutdowns
- ** Data not available prior to April 13, 2012
- *** Data not available prior to June 1, 2009

C. The USEPA Requirements for Limited Maintenance Plans

The Clean Air Act 42 U.S.C. §7505a (Section 175A) requires that, eight years after redesignation of any area as an attainment area, states submit an additional revision of the SIP for maintaining the National Ambient Air Quality Standard for the ten years beyond the initial ten-year maintenance period. The first ten-year maintenance plan for the Northeastern carbon monoxide maintenance area runs through December 31, 2014. New Jersey is establishing in this SIP revision a second ten-year limited maintenance plan that will cover the period from 2015 to 2024.

The USEPA issued guidance in 1995 describing the eligibility criteria and planning requirements for limited maintenance plans (Attachment 2).⁷ Areas are eligible for limited maintenance plans only if current carbon monoxide design values are at or below 7.65 ppm (i.e., set at 85 percent of the 8-hour National Ambient Air Quality Standard of 9 ppm). Table I demonstrates that this is the case for all of the sites located in New Jersey's carbon monoxide maintenance areas. In addition to an analysis of monitoring data to demonstrate eligibility, approvable Limited Maintenance Plans must contain the following planning elements:

1. Attainment Inventory: New Jersey is required to submit an attainment inventory (summary of wintertime carbon monoxide emissions data by county and sector) to the USEPA that coincides with a year where monitoring data show attainment.⁸ Emission projections for the maintenance period are not required.

2. Maintenance Demonstration: The following elements provide adequate assurance of maintenance:

- Continued applicability of Prevention of Significant Deterioration (PSD) requirements;
- Any control measures already in the SIP.

3. Monitoring Network and Verification of Continued Attainment:

Maintain a monitoring network to verify attainment through the maintenance period.

4. Contingency Plan:

- New Jersey must document the measures that will be promptly adopted and implemented if a violation of the National Ambient Air Quality Standard occurs during the maintenance period.

5. Transportation Conformity Determinations: According to the 1995 USEPA guidance document for Limited Maintenance Plans, the Transportation Conformity Rule and the General Conformity Rule apply to nonattainment areas and maintenance areas.^{9,10} The guidance document states that emissions budgets in Limited Maintenance Plan areas may be treated as not constraining for purposes of conformity. This is true for the length of the maintenance periods because it is unreasonable to expect that the area would experience so much growth in that period that a violation of the carbon monoxide standard would result.

⁷ USEPA, Memorandum from Joseph Paisie (OAQPS) to Regional Air Branch Chiefs, "Limited Maintenance Plan Option for Non-Classifiable CO Nonattainment Areas," October 6, 1995.

⁸ Ibid.

⁹ 58 Fed. Reg., 62188 (November 24, 1993).

¹⁰ 58 Fed. Reg., 63214 (November 30, 1993).

Once a Limited Maintenance Plan has been approved for these areas, it will no longer be necessary for the Metropolitan Planning Organizations to perform numerical regional analyses to demonstrate transportation conformity for Transportation Plans and Transportation Improvement Programs. Project-level (hotspot) carbon monoxide evaluation of transportation projects (project-level conformity) still needs to be performed in areas with approved Limited Maintenance Plans.

D. 8-Hour Carbon Monoxide Maintenance Plan

1. Attainment Inventory

The USEPA's Limited Maintenance Plan guidance requires states to develop an attainment emission inventory identifying a level of emissions sufficient to attain the National Ambient Air Quality Standard. The inventory should represent "typical winter day" emissions during a time period coincident with monitored data showing attainment. Table II provides a summary of the 2007 wintertime summary carbon monoxide emissions data for each sector for each county included in the Northeastern carbon monoxide maintenance area. The 2007 inventory is representative of emissions sufficient to attain the carbon monoxide standard.

New Jersey's first carbon monoxide attainment inventory for the Northeast carbon monoxide nonattainment area was submitted to the USEPA on August 7, 1998 (1996 base year carbon monoxide emission inventory).¹¹

County level data is presented (for Passaic county) because:

- Estimating emissions from areas smaller than counties would not be statistically significant.
- Much of the activity data upon which the area source and nonroad mobile source inventory estimates are based were developed at the county-level. Therefore, some proportional adjustment factor would need to be applied to the county-level total emissions for those sectors to represent the selected municipalities.
- The vehicle miles traveled estimates used to develop the onroad mobile source inventory would require similar adjustments. These adjustments would necessarily be based on population or economic statistical data and, as such, would simply represent a proportion of the county-level estimate rather than specific municipality data.

The maintenance areas are then totaled (partial counties are included as full counties for summary purposes). Details on how the wintertime carbon monoxide numbers for each sector were developed are outlined in Attachment 3.

¹¹ The State of New Jersey Department of Environmental Protection. State Implementation Plan (SIP) Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards, Attainment Demonstration for the New Jersey Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area. August 7, 1998.

Table 2
Northeastern New Jersey Maintenance Area Wintertime Carbon Monoxide Emissions for 2007 (tons per winter day)

County	Point Sources	Area Sources	Onroad Mobile Sources	Nonroad Mobile Sources	TOTAL
Bergen	1.82	14.75	346.29	139.60	502.47
Essex	5.52	12.93	198.99	75.20	292.64
Hudson	2.46	10.05	111.77	35.70	159.97
Passaic	0.32	6.52	144.70	42.30	193.84
Union	4.18	8.31	169.18	53.60	235.27
Northeast Maintenance Area Total	14.30	52.56	970.93	346.50	1,384.19

2. Maintenance Demonstration

The 1995 USEPA guidance document¹² states that the maintenance demonstration requirement is considered to be satisfied if the monitoring data show that the area is meeting the air quality criteria for limited maintenance areas (7.65 ppm or 85 percent of the carbon monoxide standard). Emission projections for the maintenance period are not required. According to the guidance document, the USEPA believes that if an area begins a maintenance period at or below 85 percent of the exceedance levels, then the continued applicability of Prevention of Significant Deterioration requirements, any control measure already in the SIP, and federal measures should provide adequate assurance of maintenance over the second ten-year maintenance period.

Table I shows that all of the design values are well below 7.65 ppm. As such, New Jersey is not required to include emission projections in the Limited Maintenance Plan. However, emission projections have been done by the USEPA. USEPA has projected a continued decreasing CO trend in emissions due to “fleet turnover,” with newer, cleaner motor vehicles making up an increasing share of the fleet each year in the future.¹³

New Jersey commits to continued implementation of the Federal Prevention of Significant Deterioration (PSD) permitting program and all other Federal and State measures already implemented as part of the carbon monoxide SIP. These measures were included in previous SIP revisions^{14, 15, 16}, and are summarized in Table 3.

¹² USEPA, Memorandum from Joseph Paisie (OAQPS) to Regional Air Branch Chiefs, “Limited Maintenance Plan Option for Non-Classifiable CO Nonattainment Areas,” October 6, 1995.

¹³ USEPA Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule Regulatory Impact Analysis, March 2014 and Emissions Modeling Technical Support Document: Tier 3 Motor Vehicle Emission and Fuel Standards, February 2014.

¹⁴ New Jersey State Implementation Plan Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards, New Jersey Department of Environmental Protection, November 15, 1992.

¹⁵ SIP Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards, Attainment Demonstration for the New Jersey Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area, New Jersey Department of Environmental Protection, August 7, 1998.

¹⁶ New Jersey State Implementation Plan Revision for the Attainment and Maintenance of the Carbon Monoxide National Ambient Air Quality Standards – Redesignation Request and Maintenance Plan for

Table 3
New Jersey's Carbon Monoxide SIP Control Measures

Measure	Sector	Pollutant	New Jersey Administrative Code
1992 Carbon Monoxide SIP Commitments (1)			
Vehicle Inspection and Maintenance (IM) Program/Enhanced IM	Onroad	VOC, NOx, CO, PM2.5	7:27-15
Federal Motor Vehicle Control Program (Tier 1)	Onroad	PM2.5, SO2, NOx, CO, VOC	NA
Prevention of Significant Deterioration (PSD)	Stationary	PM2.5, SO2, NOx, VOC, CO	NA
Boilers	Stationary	VOC, CO	7:27-16.8
Stationary combustion turbines	Stationary	VOC, CO	7:27-16.9
Stationary reciprocating engines	Stationary	VOC, CO	7:27-16.10
Asphalt pavement production plants	Stationary	VOC, CO	7:27-16.11
Additional 1998/2002 Carbon Monoxide SIP Commitments			
National Low Emission Vehicle Program (NLEV)	Onroad	PM2.5, NOx, CO, VOC	NA
Federal Motor Vehicle Control Program (Tier 2)	Onroad	PM2.5, SO2, NOx, CO, VOC	NA
Federal Reformulated Gasoline (RFG)	Onroad	NOx, VOC, CO	NA
Federal Phase 1 of the Spark Ignition Small Engine Rule	Nonroad	NOx, VOC, CO	NA
Additional Post 2002 Carbon Monoxide Control Measures			
Federal Nonroad Rules:			
Diesel Marine Engines over 37 kW Category 1 Tier 2, Category 2 Tier 2, Category 3 Tier 1	Nonroad	NOx, VOC, CO	NA
Gasoline boats and personal watercraft, outboard engines	Nonroad	VOC, NOx, CO, PM2.5	NA
Heavy-Duty Highway Rule - Vehicle Standards and Diesel Fuel Sulfur Control	Nonroad	PM2.5, NOx, CO, VOC, SO2	NA
Large Industrial Spark-Ignition Engines over 19 kW (>50 hp) Tier 1 and Tier 2	Nonroad	NOx, CO	NA
Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder Tier 2 and Tier 3	Nonroad	PM2.5, NOx, CO, VOC	NA
Nonroad Diesel Engine Standards and Diesel Fuel Sulfur Control	Nonroad	PM2.5, NOx, CO, VOC, SO2	NA
Phase 2 Standards for New Nonroad Spark-Ignition Nonhandheld Engines at or below 19 kW (lawn and garden)	Nonroad	NOx, VOC, CO	NA
Phase 2 Standards for Small Spark-Ignition Handheld Engines at or below 19 kW (lawn and garden)	Nonroad	NOx, VOC, CO	NA
Recreational Vehicles (includes snowmobiles, off-highway motorcycles, and all-terrain vehicles)	Nonroad	NOx, VOC, CO	NA
Federal Residential Woodstove NSPS	Stationary	PM, NOx, CO, VOC	NA

Notes:

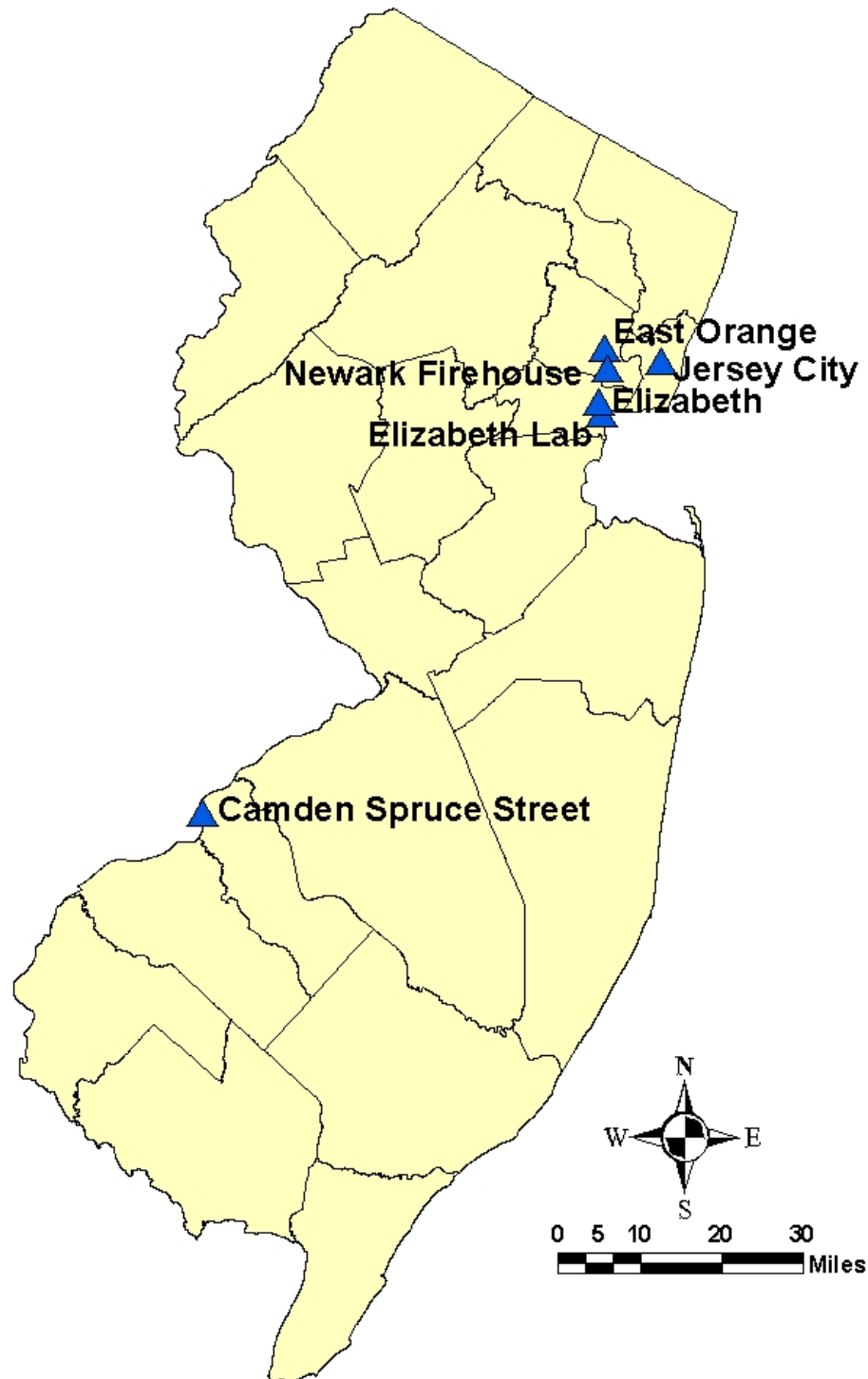
1. Oxygenated gasoline was a control measure commitment in the 1992 SIP, but was replaced with other measures in the 1998 SIP.

the New Jersey Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Nonattainment Area, New Jersey Department of Environmental Protection, January 10, 2002.

3. Monitoring Network and Verification of Continued Attainment

To verify that New Jersey remains in attainment for carbon monoxide, New Jersey will continue to operate an appropriate air monitoring network in New Jersey. New Jersey's current carbon monoxide air monitoring network is shown in Figure III.

Figure 3
New Jersey Carbon Monoxide Monitoring Network



New Jersey will monitor the air quality for continued attainment of the carbon monoxide standard, as required by the maintenance plan, by evaluating future monitoring data. New Jersey will review ambient CO monitoring data as it becomes available to evaluate any risk of impending carbon monoxide standard violations as discussed further in the Contingency Plan.

The State will work with the USEPA each year through the air monitoring network review process, as required by 40 CFR Part 58 to determine: 1) the adequacy of the CO monitoring network; 2) if additional air monitoring is needed; and 3) if/when sites can be discontinued or relocated. Due to the possibility of an unexpected occurrence affecting one or more of the monitoring sites, the State will work closely with the USEPA to either replace it or move the site to a new location, if necessary. Any changes to the monitoring network will be made through the air monitoring network review process. This review process undergoes a public notice period, usually in the May- June time period each year, and then is subject to approval by the USEPA. Air monitoring data will continue to be quality assured according to the requirements in the USEPA regulations.¹⁷

There have been several changes to the carbon monoxide monitoring network. These changes include the discontinuing of the Burlington, Freehold, Morristown, and Perth Amboy carbon monoxide monitoring sites. More details regarding these changes are discussed in Section III of this SIP revision.

4. Contingency Plan

The Clean Air Act 42 U.S.C. §7505a(d) (Section 175A(d)) requires that maintenance plans include contingency provisions. The purpose of the contingency provisions is to assure that any violations of the National Ambient Air Quality Standard that occur after the redesignation of an area to attainment will be corrected promptly.¹⁸ New Jersey's carbon monoxide contingency plan is presented in Section IV.

5. Transportation Conformity

According to the 1995 USEPA guidance document for Limited Maintenance Plans¹⁹, the Transportation Conformity Rule and the General Conformity Rule apply to nonattainment areas and maintenance areas operating under maintenance plans.^{20,21} The guidance document also states that emission budgets in Limited Maintenance Plan areas may be treated as not constraining for the length of the maintenance period because it is unreasonable to expect that such an area would experience so much growth in that period that a violation of the carbon monoxide standard would result. New Jersey's Limited Maintenance Plan covers the second 10-year maintenance period for New Jersey's Northeastern carbon monoxide maintenance area.

The NJDEP will use the interagency consultation process to inform the New Jersey Department of Transportation and Metropolitan Planning Organizations that:

- 1) Upon approval of the limited maintenance plans, carbon monoxide emission budgets will no longer be constraining for transportation conformity because of the low levels of

¹⁷ 40 CFR 58.

¹⁸ Clean Air Act 42 U.S.C. §7505a(d).

¹⁹ USEPA, Memorandum from Joseph Paisie (OAQPS) to Regional Air Branch Chiefs, "Limited Maintenance Plan Option for Non-Classifiable CO Nonattainment Areas," October 6, 1995.

²⁰ 58 Fed. Reg. 62188 (November 24, 1993).

²¹ 58 Fed. Reg. 63214 (November 30, 1993).

emissions and expected growth rates during the duration of the limited maintenance period. Once the Limited Maintenance Plan is approved, regional transportation conformity is presumed to be satisfied, with no need for quantitative comparisons to budgets for the second ten-year maintenance period.

- 2) Project-level (hotspot) carbon monoxide evaluations of transportation projects (i.e., project-level conformity, as described in 40 CFR 93.116) are still applicable as part of environmental reviews.²²

III. Carbon Monoxide Monitoring Network Changes

To use its resources more prudently, and because of the low concentrations and downward carbon monoxide trend, the State has ceased monitoring for carbon monoxide in Burlington (340051001), Freehold (340252001), Morristown (340270003), and Perth Amboy (340232003). The NJDEP will continue monitoring for carbon monoxide at the nearby Camden (340070002) and Elizabeth Lab (340390004) sites. The NJDEP will use the Camden carbon monoxide data as a surrogate for Burlington and will use the Elizabeth Lab carbon monoxide data as a surrogate for Freehold, Morristown, and Perth Amboy. (See Figures IV – VII comparing carbon monoxide levels in those groups of cities)

Carbon monoxide levels have been falling in Burlington, Freehold, Morristown, and Perth Amboy since the early 1980s (see Figures IV – VII). The carbon monoxide standard of 9 ppm (8 hour average) has not been violated at these monitors since 1986, and recent readings of the design value are in the 1 to 2 ppm range, and have been for the past three (3) years. Most of the carbon monoxide reduction has been due to “fleet turnover,” with newer, cleaner motor vehicles making up an increasing share of the fleet, and this trend is projected to continue in the future.²³

²² Environmental review documents are prepared when required by the National Environmental Policy Act.

²³ USEPA Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule Regulatory Impact Analysis, March 2014 and Emissions Modeling Technical Support Document: Tier 3 Motor Vehicle Emission and Fuel Standards, February 2014.

Figure 4
Camden CO Site Surrogate for Burlington CO Site

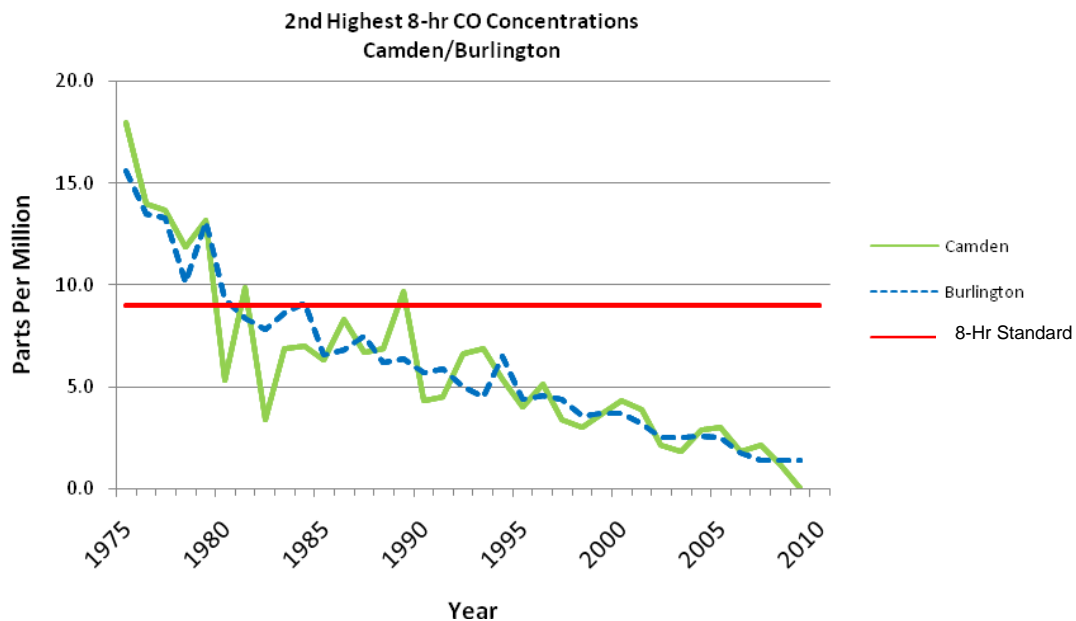
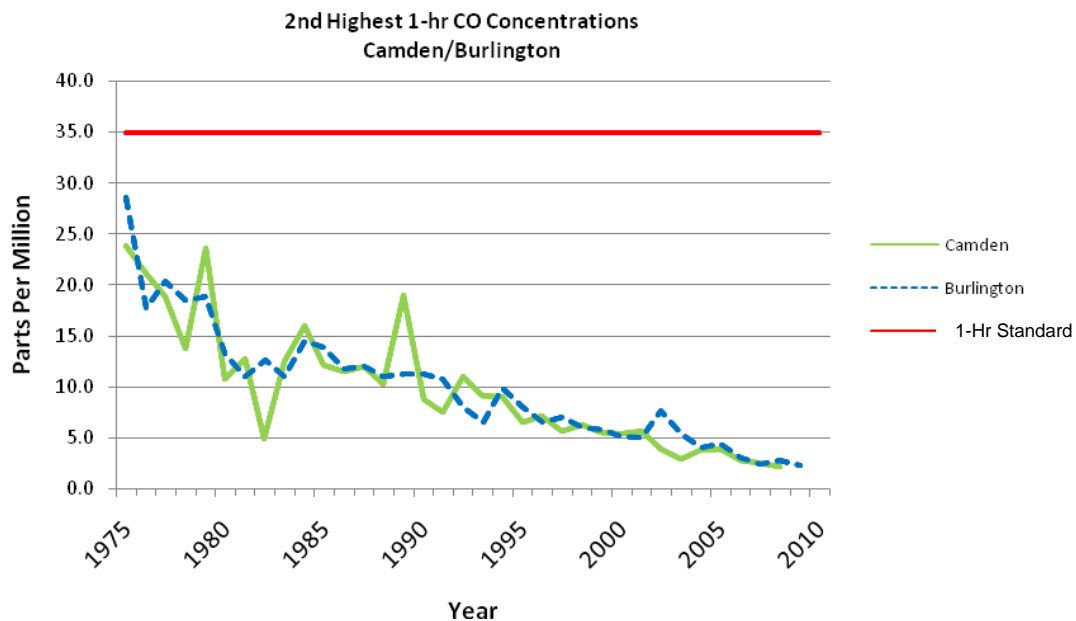


Figure 5
Elizabeth Lab CO Site Surrogate for Freehold CO Site

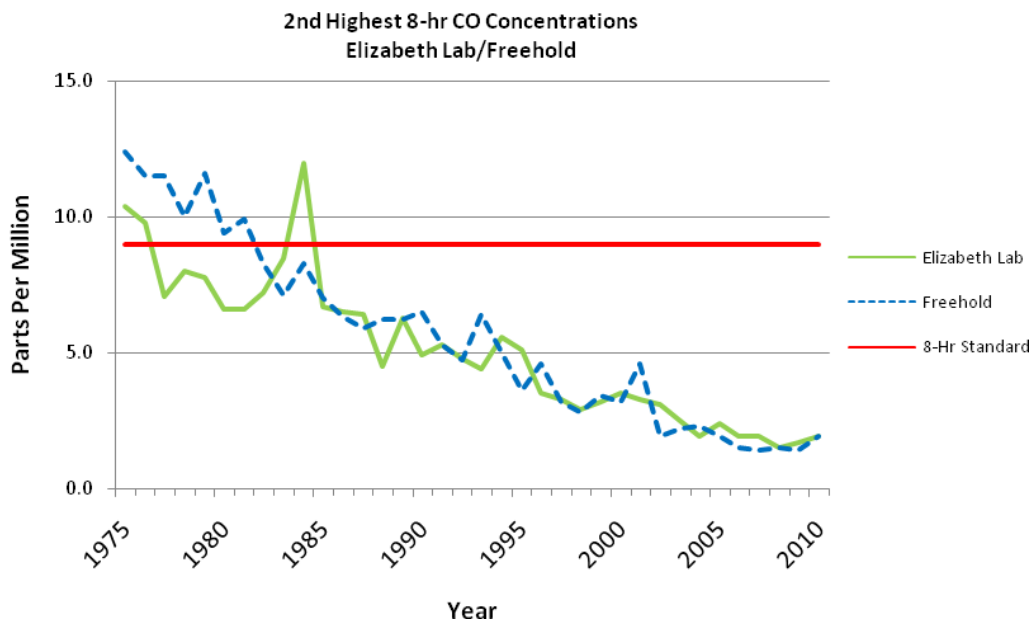
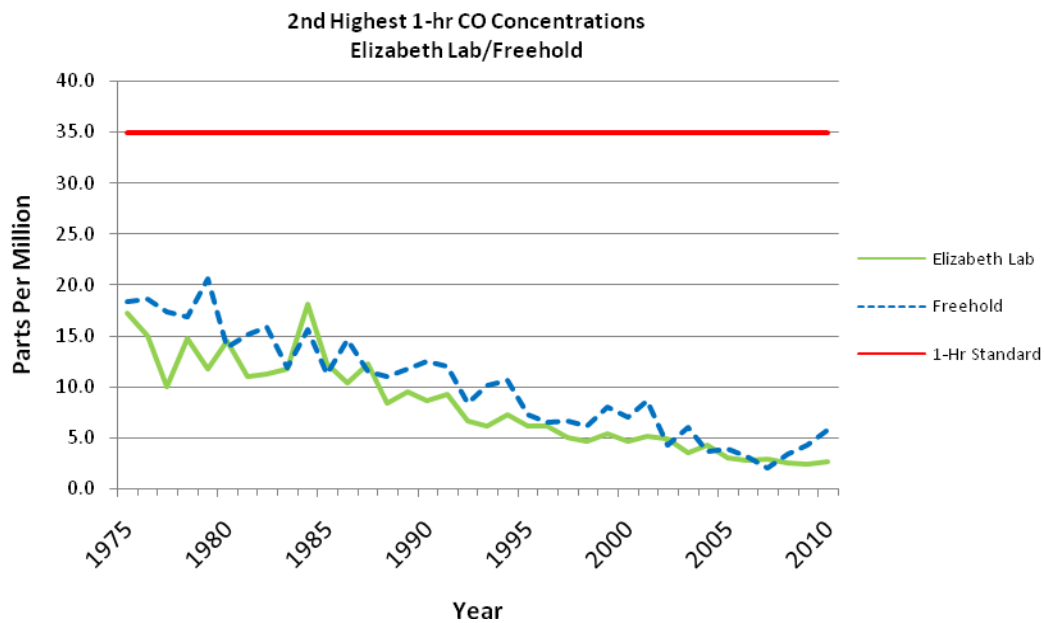


Figure 6
Elizabeth Lab CO Site Surrogate for Morristown CO Site

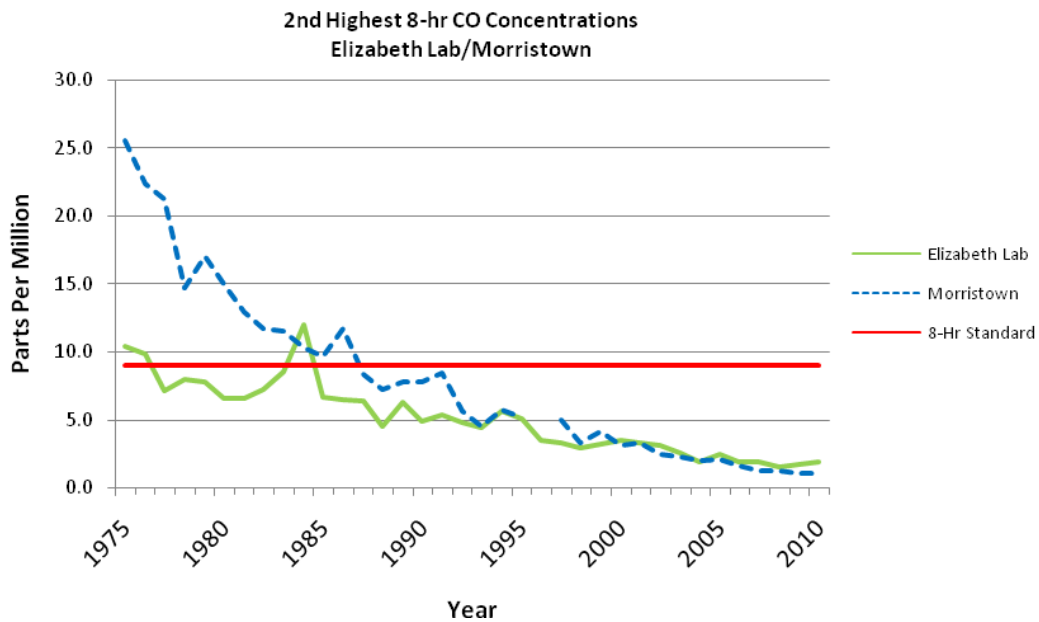
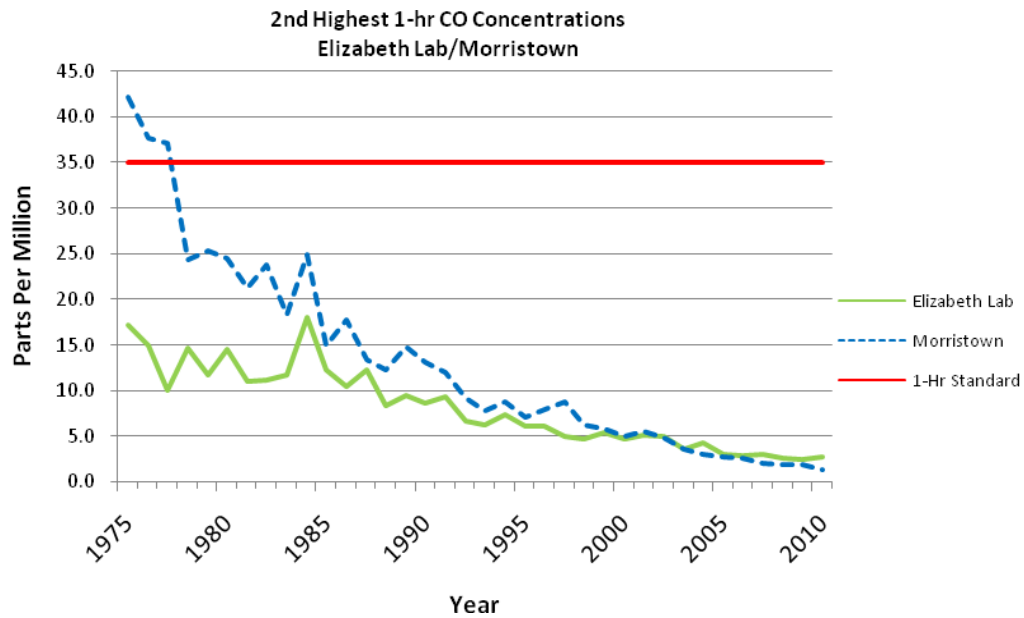
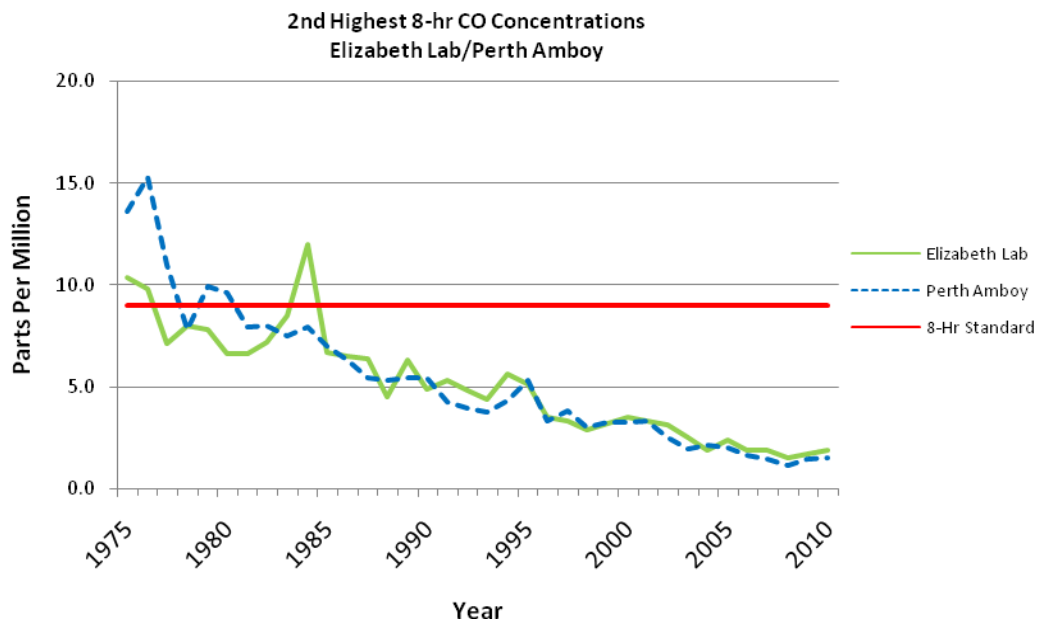
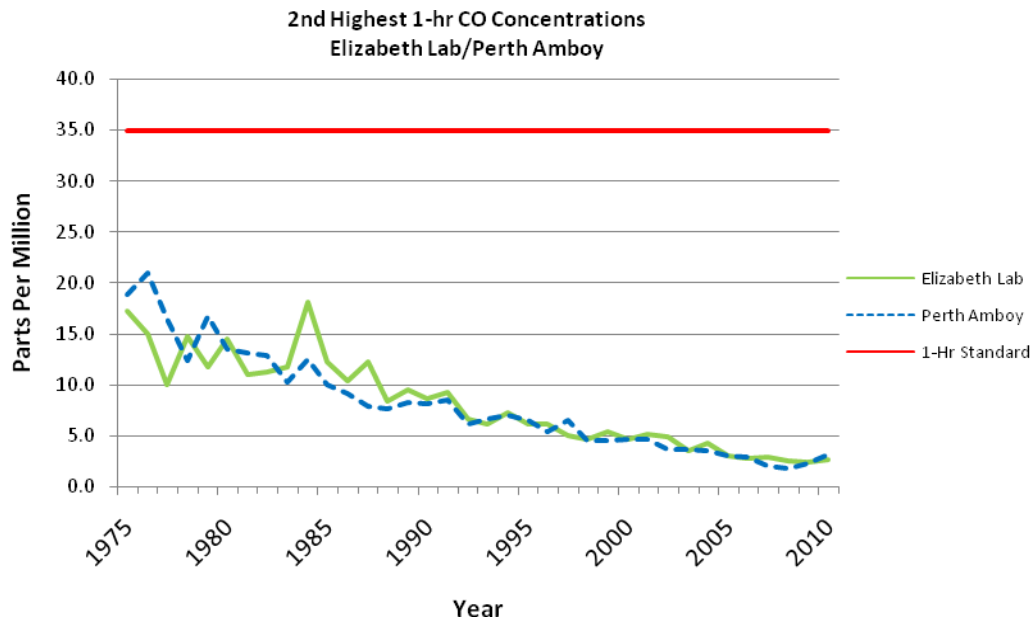


Figure 7
Elizabeth Lab CO Site Surrogate for Perth Amboy CO Site



In addition to the downward trend shown by the monitoring data, the Metropolitan Planning Organizations (MPOs) performed onroad mobile source emission modeling and conformity analyses which predicted that winter time carbon monoxide emissions in Burlington County (Burlington City monitor), Monmouth County (Freehold monitor), Morris County (Morristown monitor), and Middlesex County (Perth Amboy monitor) will remain below the approved carbon monoxide Conformity Budget levels out into the future. The Burlington analysis goes out to 2020 while the Monmouth, Morris, and Middlesex analyses go out to 2014 (See Table 4). The carbon monoxide budgets shown in Table 4 were approved by the USEPA on August 30, 2004 (69 FR 52834-52836).

Table 4
Projected Carbon Monoxide Emissions from Mobile Sources

Year	VTM (1)	CO Emissions (tons/winter day) (1)	CO Budget (tons/winter day) (2)
Burlington County (Burlington City Monitor)			
2007	12,209,000	154.90	170.43
2010	12,540,100	135.93	170.43
2020	13,788,500	119.12	170.43
Middlesex County (Perth Amboy Monitor)			
2007	17,485,354	244.59	244.99
2014	19,814,012	203.95	244.99
Monmouth County (Freehold Monitor)			
2007	15,703,237	219.68	231.55
2014	16,418,941	169.52	231.55
Morris County (Morristown Monitor)			
2007	14,735,071	209.88	244.05
2014	15,591,325	162.57	244.05

- (1) **Burlington County CO Emissions and VMT Source:** Transportation Conformity of the DVRPC FY 2007 Transportation Improvement Programs and the Destination 2030 Long Range Transportation Plan, May 2006

Middlesex, Monmouth and Morris County CO Emissions and VMT Source: The Northern New Jersey Air Quality Conformity Determination of the 2005 Regional Transportation Plan and the FY 2007-2010 Transportation Improvement Program, June 2006

- (2) **CO Budget Source:** 2004 New Jersey Revised Motor Vehicle Transportation Conformity Emission Budgets Using the MOBILE6 Model, dated May 3, 2004 and approved by the USEPA August 30, 2004 at 69 FR 52834-52836.

The revised monitor plan was included in the State's 2010 and 2011 Annual Monitoring Network Plans, which underwent a public process. No public comments were received on the CO portion of the plans.

IV. Carbon Monoxide Contingency Plan

The Clean Air Act 42 U.S.C. §7505a(d) (Section 175A(d)) requires that maintenance plans include contingency provisions. The purpose of the contingency provisions is to assure that any violations of the National Ambient Air Quality Standard that occur after the redesignation of an

area to attainment will be corrected promptly.²⁴

Contingency Measure Triggers

If design values in any maintenance area in New Jersey exceed 7.65 ppm, the NJDEP will coordinate with USEPA to:

- Verify the validity of the data;
- Evaluate whether the data should be excluded based on an exceptional event or local traffic problem;
- Analyze available data regarding the air quality, meteorology, and related activities in the area to determine the cause of the exceedance;

If design values in any maintenance area in New Jersey show noncompliance with the National Ambient Air Quality Standard, New Jersey will implement contingency measures, if warranted based on the data review, and if deemed necessary and appropriate.

Contingency Measures and Timeframes

The Clean Air Act 42 U.S.C. §7505a(d) (Section 175A(d)) requires that, at a minimum, a contingency plan include implementation of all measures that were contained in the SIP before redesignation of the area as an attainment area (if any measures were removed or reduced with USEPA approval.) No measures were removed or reduced as part of the carbon monoxide redesignation, therefore, all measures contained in the SIP before redesignation are either being implemented, or were replaced with equivalent measures (oxygenated gasoline was replaced with equivalent measures prior to redesignation).

In addition, the State commits to continue implementing a program to reduce idling emissions. The State will also rely on onroad vehicle fleet turnover from the existing State and Federal rules for motor vehicles. The turnover of the onroad fleet of cars and trucks will result in additional carbon monoxide emission reductions each year because the new vehicles have lower emission standards than the vehicles they are replacing. The rules for this measure are already promulgated and are already being implemented.

If it becomes necessary to further reduce carbon monoxide levels in the future, New Jersey will work with the local Transportation Planning Organizations or Metropolitan Planning Organizations to implement transportation control measures such as Transportation Demand Management measures, signal improvement projects, bicycle projects, and various transit related projects. Since the implementation of potential contingency measures would not be expected to take place until well in the future, providing the specific details of the measures is not practicable. The most appropriate contingency measures may be significantly different from the measures mentioned above due to technological, societal or economic factors that are impossible to predict.

²⁴ Clean Air Act 42 U.S.C. §7505a(d).