

**ONE-HOUR OZONE REDESIGNATION REQUEST AND  
MAINTENANCE PLAN FOR  
THE MARICOPA COUNTY NONATTAINMENT AREA**

**MARCH 2004**



# **ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

**Prepared by:**



**March 2004**

**Technical Assistance Provided By:**

**Arizona Department of Environmental Quality  
Arizona Department of Transportation  
Maricopa County Environmental Services Department  
U.S. Environmental Protection Agency**

**ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN  
FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

**TABLE OF CONTENTS**

<u>CHAPTER</u>	<u>PAGE</u>
<b>EXECUTIVE SUMMARY</b> .....	ES-1
<b>ONE INTRODUCTION</b> .....	1-1
NATIONAL AMBIENT AIR QUALITY STANDARD FOR OZONE .....	1-2
CHARACTERISTICS AND HEALTH EFFECTS OF OZONE .....	1-2
NONATTAINMENT AREA .....	1-2
HISTORY .....	1-3
REQUIRED COMPONENTS OF A REDESIGNATION REQUEST .....	1-4
<b>TWO REDESIGNATION REQUEST</b> .....	2-1
REQUIRED COMPONENTS OF A REDESIGNATION REQUEST .....	2-1
ATTAINMENT OF THE ONE-HOUR OZONE STANDARD .....	2-1
APPROVAL OF THE OZONE NONATTAINMENT SIP ELEMENT FOR THE MARICOPA COUNTY AREA .....	2-8
IMPROVEMENT IN AIR QUALITY DUE TO PERMANENT AND ENFORCEABLE EMISSION REDUCTIONS .....	2-8
ATTAINMENT AND MAINTENANCE CONTROL MEASURES .....	2-9
CLEAN AIR ACT SECTION 110 AND PART D REQUIREMENTS .....	2-14

<u>CHAPTER</u>	<u>PAGE</u>
<b>THREE</b>	
<b>MAINTENANCE PLAN</b> .....	3-1
MAINTENANCE PLAN CONTROL MEASURES .....	3-1
EMISSION INVENTORIES .....	3-7
MAINTENANCE DEMONSTRATION .....	3-13
MOBILE SOURCE EMISSIONS BUDGETS FOR OZONE ...	3-13
MONITORING NETWORK/VERIFICATION OF CONTINUED ATTAINMENT .....	3-16
CONTINGENCY PROVISIONS .....	3-17
SUBSEQUENT MAINTENANCE PLAN REVISIONS .....	3-18

**ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN  
FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

**LIST OF TABLES**

<u>TABLE</u>	<u>PAGE</u>
ES-1 1999 Base Case and 2015 Committed Maintenance Measures . . . . .	ES-4
ES-2 1999 Base Case and 2015 Committed Maintenance Measure VOC Emissions in the One-Hour Ozone Nonattainment Area . . . . .	ES-5
ES-3 1999 Base Case and 2015 Committed Maintenance Measure NO <sub>x</sub> Emissions in the One-Hour Ozone Nonattainment Area . . . . .	ES-6
2-1 2000 Ozone Monitoring Data Summary for the Maricopa County Nonattainment Area . . . . .	2- 3
2-2 2001 Ozone Monitoring Data Summary for the Maricopa County Nonattainment Area . . . . .	2-4
2-3 2002 Ozone Monitoring Data Summary for the Maricopa County Nonattainment Area . . . . .	2-5
3-1 Committed Maintenance and Contingency Measures in the One-Hour Ozone Maintenance Plan. . . . .	3-3
3-2 Summary of 2015 Emission Reductions in the Nonattainment Area From Committed Maintenance Measures Used for Numeric Credit. . . . .	3-6
3-3 Summary of NO <sub>x</sub> Emissions for the July Episode in 1998 Base Case and 2015 With Committed Maintenance Measures. . . . .	3-9
3-4 Summary of VOC Emissions for the July Episode in 1998 Base Case And 2015 With Committed Maintenance Measures . . . . .	3-10
3-5 Summary of NO <sub>x</sub> Emissions for the August Episode in 1999 Base Case, and 2006 and 2015 With Committed Maintenance Measures. . . . .	3-11
3-6 Summary of VOC Emissions for the August Episode in 1999 Base Case, and 2006 and 2015 With Committed Maintenance Measures. . . . .	3-12
3-7 The 1998, 1999, 2006, and 2015 Maximum Simulated One-Hour Ozone Concentrations for Both the July and August Episodes . . . . .	3-14

**ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN  
FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

**LIST OF FIGURES**

<b><u>FIGURE</u></b>		<b><u>PAGE</u></b>
ES-1	One-Hour Ozone Trends (1995-2002) .....	ES-2
ES-2	2015 NO <sub>x</sub> Emission Reductions From Individual Maintenance Measures in the One-Hour Ozone Nonattainment Area .....	ES-7
ES-3	2015 VOC Emission Reductions From Individual Maintenance Measures in the One-Hour Ozone Nonattainment Area .....	ES-8
2-1	One-Hour Ozone Regional Monitoring Network .....	2-6
2-2	One-Hour Ozone Trends (1995-2002) .....	2-7
3-1	2015 NO <sub>x</sub> Emission Reductions From Individual Maintenance Measures in the One-Hour Ozone Nonattainment Area .....	3-4
3-2	2015 VOC Emission Reductions From Individual Maintenance Measures in the One-Hour Ozone Nonattainment Area .....	3-5

# **ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

## **APPENDICES**

### **APPENDIX A**

- Exhibit 1: 1999 Periodic Ozone Emission Inventory for the Maricopa County, Arizona Nonattainment Area. Maricopa County Environmental Services Department. November 2001, Revised August 2002.
- Exhibit 2: Technical Support Document for Ozone Modeling in Support of the One-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area. March 2004.

### **APPENDIX B**

- Exhibit 1: Resolution to Implement RACT for the One-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area. Maricopa County Board of Supervisors. December 17, 2003.
- Exhibit 2: Negative Declaration for Fiberglass Boat Manufacturing. Letter from Maricopa County to Arizona Department of Environmental Quality. November 25, 2003.

### **APPENDIX C**

- Exhibit 1: Public Hearing Process Documentation
- Exhibit 2: Certification of Adoption

**ONE-HOUR OZONE REDESIGNATION REQUEST AND  
MAINTENANCE PLAN FOR  
THE MARICOPA COUNTY NONATTAINMENT AREA**

**EXECUTIVE SUMMARY**



# **ONE-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA COUNTY NONATTAINMENT AREA**

## **EXECUTIVE SUMMARY**

The Maricopa Association of Governments (MAG) is requesting that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa County nonattainment area to attainment for the National Ambient Air Quality Standards for one-hour ozone. No violations of the one-hour ozone standard have occurred since 1996. With the submittal of this redesignation request and maintenance plan, the Maricopa County nonattainment area has satisfied all of the requirements for redesignation to attainment for one-hour ozone.

Under the 1990 Clean Air Act Amendments, the Maricopa County nonattainment area was classified as Moderate for the one-hour ozone standard. Because attainment was not achieved by November 19, 1996, the area was classified to Serious, effective February 13, 1998, with a new attainment date of November 19, 1999.

The MAG 1993 Ozone Plan, addressing the Moderate Area requirements, was submitted to the Environmental Protection Agency (EPA) in November 1993. An Addendum to this Moderate Area plan was submitted to EPA in March 1994. EPA approved and promulgated a Revised Rate of Progress Federal Implementation Plan for the Maricopa County nonattainment area, effective August 5, 1999. In February 2000, the State of Arizona requested an ozone attainment determination for the Maricopa County area. A Serious Area Ozone State Implementation Plan (SIP) for Maricopa County was submitted to EPA in December 2000. On May 30, 2001, EPA published a final attainment determination for the one-hour ozone standard.

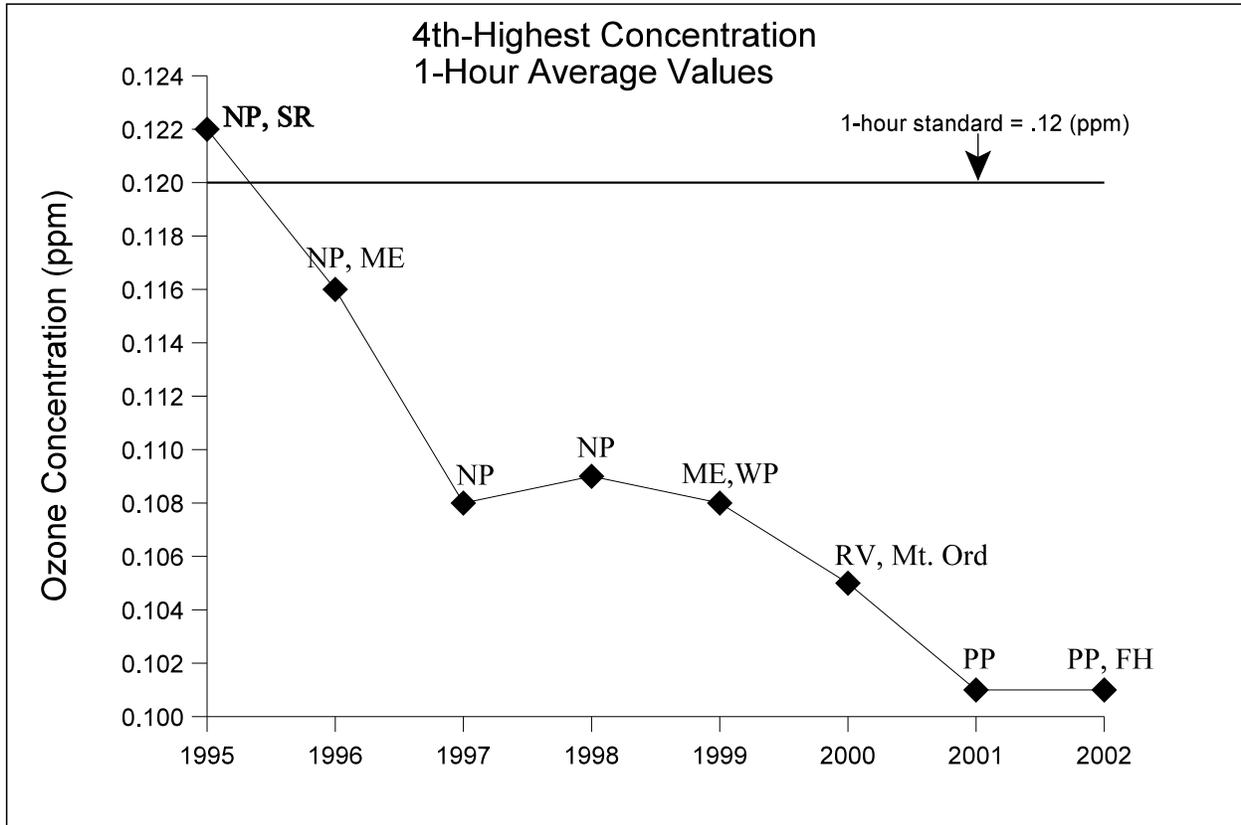
The Clean Air Act defines the following criteria that must be met before a nonattainment area can be redesignated to attainment:

- EPA must fully approve the Serious Area Ozone SIP for Maricopa County submitted to EPA in December 2000 and any related SIP components.
- EPA must determine that the area has attained the one-hour ozone standard. This determination was made by EPA on May 30, 2001.
- EPA must determine that the improvement in air quality is due to permanent and enforceable reductions in emissions.
- The State must meet all applicable requirements for State Implementation Plans (SIPs) and Nonattainment Areas as defined in the Clean Air Act.
- EPA must approve a maintenance plan for the area. The plan must demonstrate maintenance of the one-hour ozone standard for a period of at least ten years following the redesignation to attainment by EPA.

Chapter Two of this document provides monitoring data to support the finding that the one-hour ozone standard has been met in the nonattainment area since 1996. Figure ES-1 shows the continuous downward trend in ozone concentrations occurring in the nonattainment area. Chapter Two demonstrates that these improvements in air quality are

# FIGURE ES-1

## ONE-HOUR OZONE TRENDS (1995-2002)



Monitor Where 4th-Highest Reading Occurred

- (NP) North Phoenix
- (SR) Salt River-Pima Indian Reservation
- (ME) Mesa
- (WP) West Phoenix
- (PP) Pinnacle Peak
- (RV) Rio Verde
- (FH) Fountain Hills

attributable to permanent, enforceable reductions in ozone precursor emissions. The second chapter also documents that other Clean Air Act requirements for SIPs and nonattainment areas have been met.

Generally, the overall approach taken in preparing the One-Hour Ozone Maintenance Plan is to demonstrate maintenance of the one-hour ozone standard in 2015 with the committed measures in the Revised MAG 1999 Serious Area Carbon Monoxide Plan and Carbon Monoxide Redesignation Request and Maintenance Plan, since most of those measures also reduce ozone. Therefore, the Ozone Maintenance Plan relies heavily upon the Revised MAG Serious Area Carbon Monoxide Plan and its supporting documents, including the commitments to implement control measures. The Ozone Maintenance Plan also relies upon the Final Serious Area Ozone State Implementation Plan for Maricopa County and the modified Arizona Cleaner Burning Gasoline Program.

Chapter Three contains the One-Hour Ozone Maintenance Plan for the nonattainment area. The Maintenance Plan demonstrates that the area will continue to maintain the one-hour ozone standard through 2015, a period of at least ten years following redesignation to attainment by EPA. Maintenance of the standard through 2015 will be achieved despite growth in regional population, employment, and vehicle travel, due to more stringent federal controls on vehicles and fuels, and state and local committed measures in this Maintenance Plan.

Table ES-1 identifies the measures for which numeric credit was taken in validating the air quality models for 1998 and 1999. The seven committed maintenance measures for which numeric credit is taken in the Maintenance Plan are also identified in Table ES-1. Six of these maintenance measures were also committed measures in the Revised MAG 1999 Serious Area Carbon Monoxide Plan and the 2003 Carbon Monoxide Redesignation Request and Maintenance Plan. CARB Phase 2 gasoline with 3.5 percent oxygenate in winter was also a committed measure in the Carbon Monoxide Plans. The summertime formulation of this fuel is a committed measure in the Ozone Maintenance Plan, as described in the Technical Support Document. Rule 348 is a new measure adopted by Maricopa County to reduce volatile organic compounds (VOC) emissions from aerospace manufacturing and rework operations.

Tables ES-2 and ES-3 compare VOC and nitrogen oxides (NO<sub>x</sub>), respectively, in the 1999 base case to emissions in 2015 with the committed maintenance measures. The maximum one-hour ozone concentration modeled in 1999 was 0.125 parts per million (ppm). The maximum one-hour ozone concentration in 2015 is projected to be 0.120 ppm, which demonstrates maintenance of the standard.

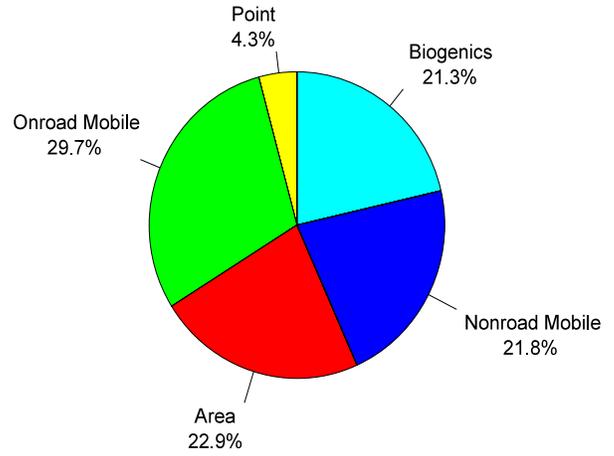
Figures ES-2 and ES-3 illustrate the emission reductions attributable to each of the maintenance measures in 2015. With the committed measures, the Maintenance Plan projects that onroad mobile sources will contribute 15.9 percent of the VOC emissions in 2015 or 48.7 metric tons per day. Onroad mobile sources also contribute 25.4 percent of the NO<sub>x</sub> emissions in 2015 or 53.6 metric tons per day. These figures, 48.7 metric tons

**TABLE ES-1  
1999 BASE CASE AND 2015 COMMITTED MAINTENANCE MEASURES**

<b>Base Case Measures Assumed in the 1999 Model Validation for the One-Hour Ozone Maintenance Plan</b>	<b>Committed Maintenance Measures Used for Credit in the One-Hour Ozone Maintenance Plan</b>
1. Inspection/Maintenance (I/M) idle test was required for all gasoline vehicles	1. CARB Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May through September
2. I/M waiver rates of 10% assumed for pre-1981 model year vehicles and 4%, for 1981 and newer vehicles	2. Coordinate Traffic Signal Systems
3. Oxygenate content and Reid Vapor Pressure (RVP) were based on actual fuel properties from surveys	3. Tougher Enforcement of Vehicle Registration and Emission Test Compliance
4. Vehicles participating in I/M test - 88%; not-participating - 12%	4. One Time Waiver from Vehicle Emissions Test
5. Expansion of Area A (S.B. 1427)	5. Develop Intelligent Transportation Systems
	6. Phased-in Emission Test Cutpoints
	7. Maricopa County Rule 348

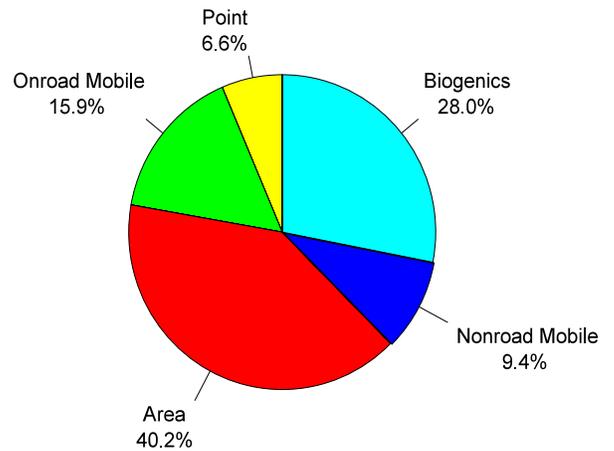
**TABLE ES-2  
1999 BASE CASE AND 2015 COMMITTED MAINTENANCE MEASURE VOC EMISSIONS  
IN THE ONE-HOUR OZONE NONATTAINMENT AREA**

<b>Tuesday, August 1999</b>		
Source Category	Metric Tons per Day	Percent
Point	15.3	4.3
Area	82.6	22.9
Biogenics	76.7	21.3
Nonroad Mobile	78.5	21.8
Onroad Mobile	106.9	29.7
<b>Total</b>	<b>360.0*</b>	<b>100.0*</b>



August 1999

<b>Tuesday, August 2015</b>		
Source Category	Metric Tons per Day	Percent
Point	20.2	6.6
Area	123.5	40.2
Biogenics	85.8	28.0
Nonroad Mobile	28.7	9.4
Onroad Mobile	48.7	15.9
<b>Total</b>	<b>306.9*</b>	<b>100.0*</b>



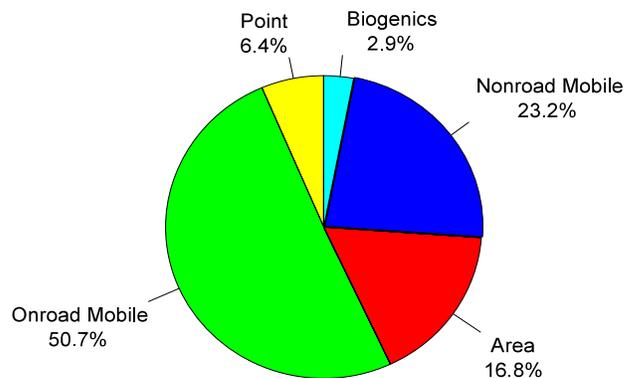
August 2015

\* Note that the sum of the source categories may not equal the total due to rounding.

- Point Sources - Industrial, Manufacturing, and Electrical Power Generation Facilities
- Area Sources - Residential Wood and Industrial Fuel Combustion, On-site Incineration, and Open Burning
- Biogenics - Natural Vegetation
- Nonroad Mobile - Utility, Lawn & Garden, Construction, Farm, and Recreational Equipment, Aircraft and Locomotives

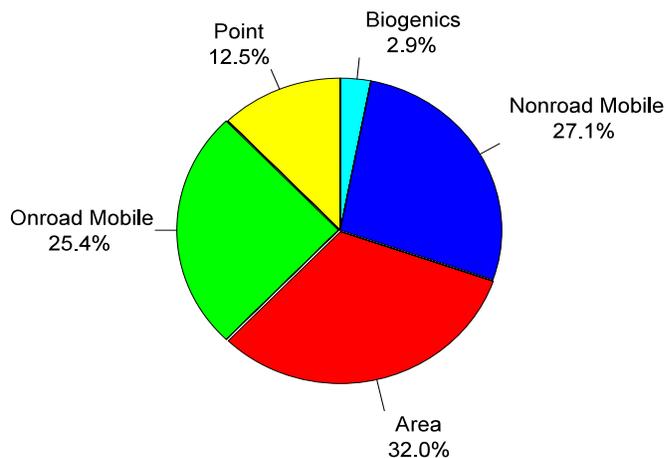
**TABLE ES-3  
1999 BASE CASE AND 2015 COMMITTED MAINTENANCE MEASURE NO<sub>x</sub> EMISSIONS  
IN THE ONE-HOUR OZONE NONATTAINMENT AREA**

<b>Tuesday, August 1999</b>		
Source Category	Metric Tons per Day	Percent
Point	16.5	6.4
Area	43.0	16.8
Biogenics	7.3	2.9
Nonroad Mobile	59.3	23.2
Onroad Mobile	129.8	50.7
<b>Total</b>	<b>255.9*</b>	<b>100.0*</b>



August 1999

<b>Tuesday, August 2015</b>		
Source Category	Metric Tons per Day	Percent
Point	26.3	12.5
Area	67.4	32.0
Biogenics	6.2	2.9
Nonroad Mobile	57.2	27.1
Onroad Mobile	53.6	25.4
<b>Total</b>	<b>210.7*</b>	<b>100.0*</b>

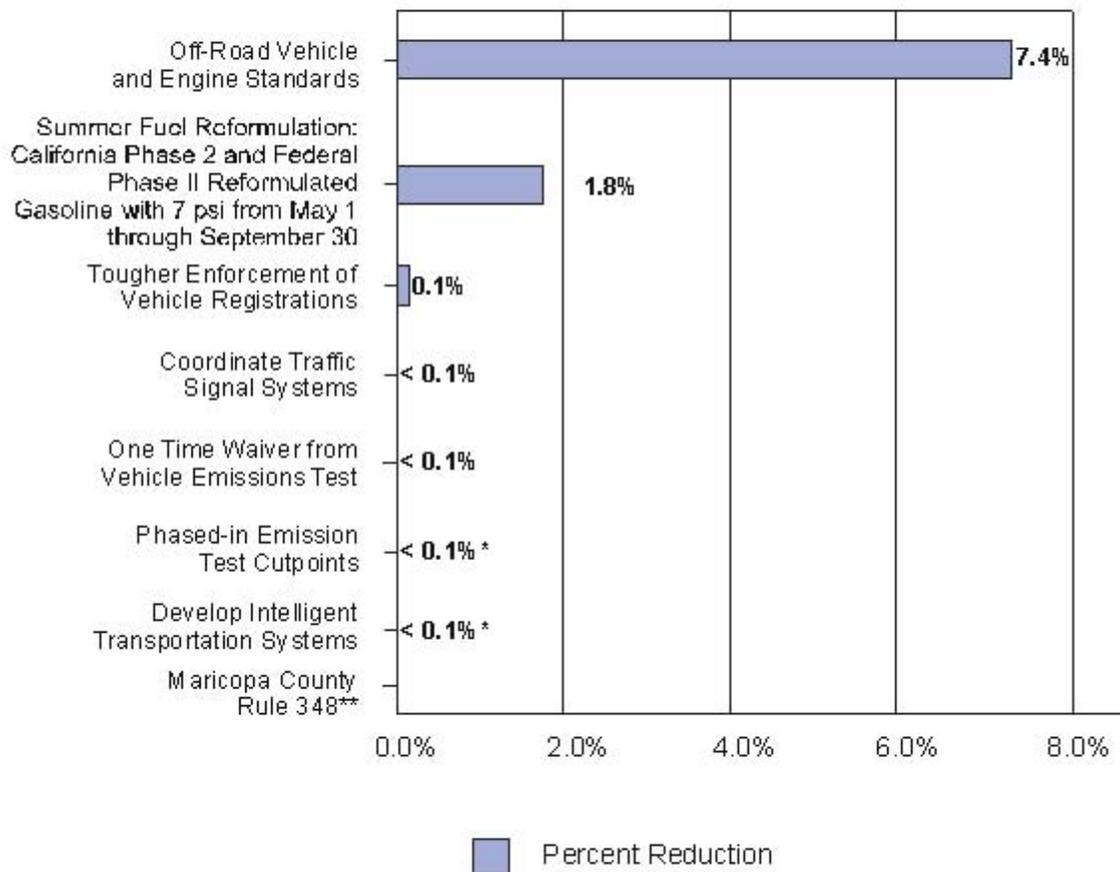


August 2015

\* Note that the sum of the source categories may not equal the total due to rounding.

- Point Sources - Industrial, Manufacturing, and Electrical Power Generation Facilities
- Area Sources - Residential Wood and Industrial Fuel Combustion, On-site Incineration, and Open Burning
- Biogenics - Natural Vegetation
- Nonroad Mobile - Utility, Lawn & Garden, Construction, Farm, and Recreational Equipment, Aircraft and Locomotives

**FIGURE ES-2**  
**2015 NO<sub>x</sub> EMISSION REDUCTIONS FROM**  
**INDIVIDUAL MAINTENANCE MEASURES**  
**IN THE ONE-HOUR OZONE NONATTAINMENT AREA**  
**(Percent Reduction in Total Emissions)**



NOTE: Individual impact of measures are not additive.

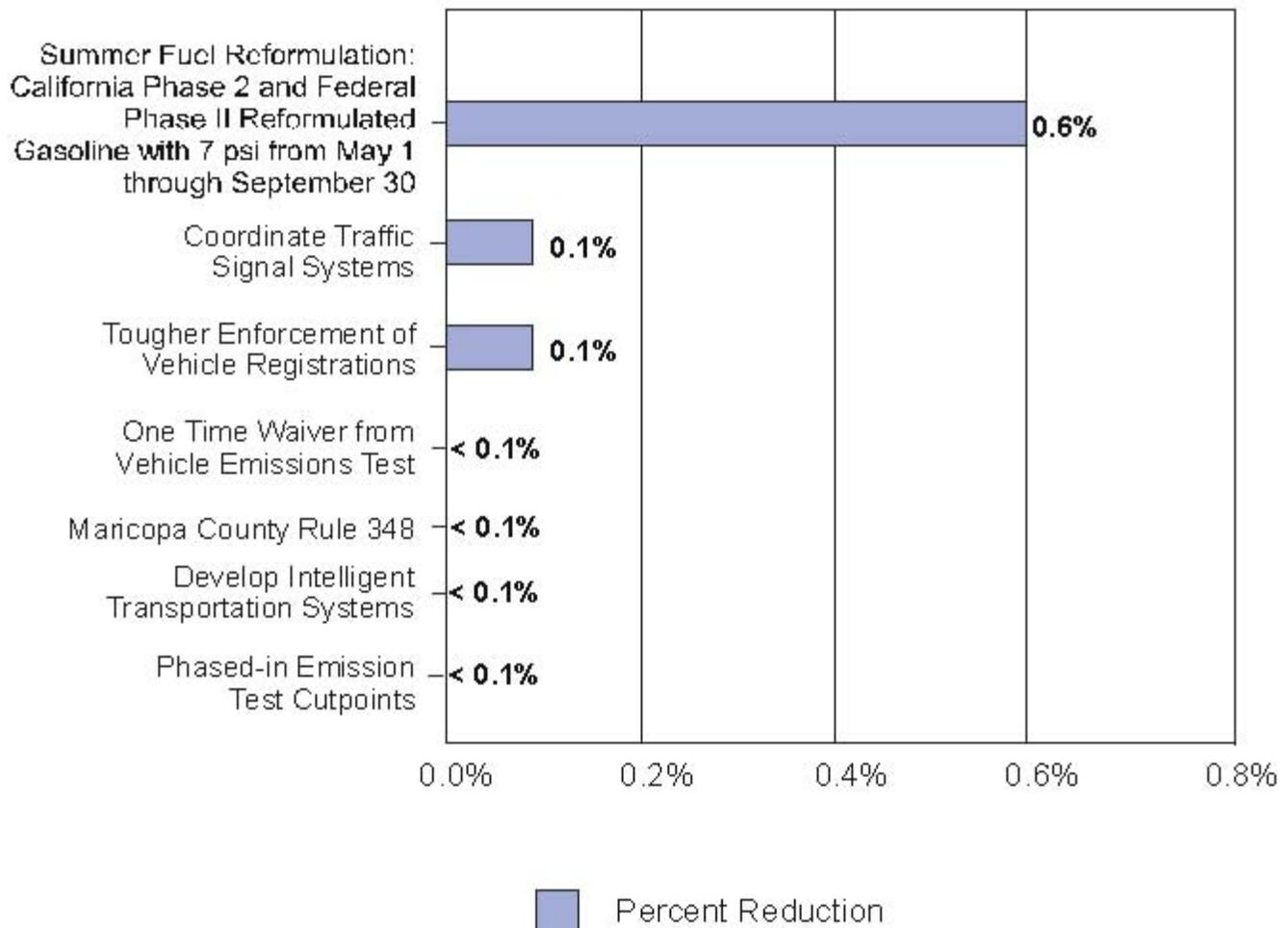
\* Slight increase in emissions

\*\*Does not reduce NO<sub>x</sub> Emissions

**FIGURE ES-3**

**2015 VOC EMISSION REDUCTIONS FROM  
INDIVIDUAL MAINTENANCE MEASURES  
IN THE ONE-HOUR OZONE NONATTAINMENT AREA<sup>a, b</sup>**

**(Percent Reduction in Total Emissions)**



a-Individual impact of measures is not additive.

b-Numeric credit for federal Offroad Vehicle and Engine Standards (40 CFR Parts 89 and 90) has also been taken.

per day of VOCs and 53.6 metric tons per day of NOx, represent the conformity budgets for ozone precursor emissions in 2015. In addition, the Maintenance Plan establishes interim conformity budgets of 71.9 metric tons per day for VOCs and 104.8 metric tons per day for NOx in 2006.

The Clean Air Act also requires that a maintenance plan also contain contingency provisions. The maintenance plan is not required to contain fully adopted contingency measures. Chapter Three identifies three contingency measures that were also contingency measures in the Revised MAG 1999 Serious Area Carbon Monoxide Plan. These measures have already been adopted and implemented in the nonattainment area. Early implementation of contingency measures is allowed by EPA. The contingency measures in this Maintenance Plan are: Expansion of Area A Boundaries, Gross Polluter Option for I/M Program Waivers, and Increased Waiver Repair Limit Options. Chapter Three describes the process and schedule to be followed if monitoring data indicate additional measures are needed in the future.

## **CHAPTER ONE**

### **INTRODUCTION**

The Maricopa Association of Governments (MAG) is requesting that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa County nonattainment area to attainment for the one-hour ozone National Ambient Air Quality Standard. The area was designated a nonattainment area for ozone in 1978, but has not violated the standard since 1996. Therefore, the area is now eligible for redesignation. Chapter Two contains the formal redesignation request and supporting documentation. Chapter Three provides the Maintenance Plan which demonstrates continued attainment of the one-hour ozone standard through the year 2015.

In 1978, the Governor of Arizona designated the Maricopa Association of Governments as the lead air quality planning agency for Maricopa County. Together with the State, MAG is responsible for determining which elements of the State Implementation Plan will be planned, implemented and enforced by State and local governments in Arizona. In 1992, the Arizona Legislature recertified MAG as the regional air quality planning agency. MAG coordinates with the Arizona Department of Environmental Quality, Arizona Department of Transportation and the Maricopa County Environmental Services Department in developing the plans necessary to attain and maintain the national standards.

This redesignation request and Maintenance Plan have been reviewed and approved by the MAG Air Quality Technical Advisory Committee, the MAG Management Committee and the MAG Regional Council. The MAG Air Quality Technical Advisory Committee was established in 1995 with representatives from State, county and local governments, private industry, environmental groups, and the public-at-large. The Air Quality Technical Advisory Committee makes recommendations to the MAG Management Committee on air quality plans, projects, funding and other pertinent issues.

The MAG Management Committee is comprised of managers from each of the MAG member agencies that include twenty-five cities and towns, the Salt River Pima-Maricopa and Gila River Indian Communities, Maricopa County, and the Arizona Department of Transportation. The MAG Management Committee makes recommendations to the MAG Regional Council. The Regional Council is the MAG decision-making body and is composed of elected officials from the MAG member agencies.

MAG has also conducted a public hearing on this redesignation request and maintenance plan in accordance with federal requirements. All public comments and responses are provided in Appendix C.

## NATIONAL AMBIENT AIR QUALITY STANDARD FOR OZONE

The federal one-hour ozone standard is 0.12 parts per million (ppm). For the one-hour standard, a violation occurs when the expected number of exceedances of the standard that are recorded at a monitoring site during a calendar year and then averaged over a three year period is greater than one. Four exceedances measured during a three year period at a single air monitoring station equal one violation of the ozone standard. An exceedance is considered as a monitored value of 0.125 ppm or greater.

The last exceedance of the one-hour ozone standard in the nonattainment area was recorded in 1996. There have been no exceedances of the one-hour ozone standard at any of the ozone monitors located in the nonattainment area in 1997, 1998, 1999, 2000, 2001, and 2002. There have been no violations of the one-hour ozone standard since 1996.

## CHARACTERISTICS AND HEALTH EFFECTS OF OZONE

Ozone is not directly emitted from a source, but is produced by the mixing of volatile organic compounds and nitrogen oxides in the presence of heat and sunlight. Most precursors to ozone, volatile organic compounds, and nitrogen oxides are emitted from onroad and nonroad engines. Other sources of ozone precursors are industrial, manufacturing and electrical power generation facilities; dry cleaners, service stations, architectural coatings, and consumer and commercial solvent use; and natural vegetation. Peak concentrations typically occur in the urban area from May through September when high temperatures are conducive for forming ozone. Also, due to prevailing afternoon winds, ozone and ozone precursors are transported to the mountainous areas east and north of the Maricopa County Nonattainment Area where elevated levels of ozone may occur.

Ozone irritates the lungs and repeated exposure may cause permanent lung damage. Symptoms of ozone exposure may include wheezing, coughing, and pain when taking a deep breath. Children, persons with pre-existing respiratory conditions such as asthma, and others who are active outdoors when ozone levels are high are most affected by the adverse health effects of ozone. Even low levels of ozone may cause aggravated asthma, reduced lung capacity, and make persons more susceptible to respiratory illnesses like pneumonia and bronchitis.

## NONATTAINMENT AREA

The Maricopa County one-hour ozone nonattainment area encompasses 1,946 square miles in central Arizona. The northern boundary of the nonattainment area is located approximately six miles north of Carefree Highway and the southern boundary, generally along Hunt Highway. To the east, the area is bounded by the Pinal County Line and the Tonto National Forest; on the west, by Jackrabbit Trail and Beardsley Canal. The area contains portions of twenty-two cities and towns, the Fort McDowell, Gila River and Salt River Pima-Maricopa Indian Communities, and some unincorporated areas of Maricopa

County. According to the U.S. Census, the population of Maricopa County in 2000 was 3.1 million. Most of these residents live and work within the nonattainment area boundaries.

The nonattainment area is located in the Salt River Valley at 1,100 feet above mean sea level and is almost completely surrounded by mountains. The climate in the nonattainment area is arid continental, with temperatures ranging from a mean of 52 degrees Fahrenheit in January to 91 degrees, in July. The sun shines 86 percent of the time and the annual rainfall is about 7.44 inches. In general, the prevailing wind direction is from E/SE to W/SW, although the winds can shift in the afternoon to a more westerly direction.

## HISTORY

In accordance with the Clean Air Act, an urbanized portion of Maricopa County was formally designated as a nonattainment area for ozone in 1978. Under the 1990 Clean Air Act Amendments, the nonattainment area was classified as Moderate for ozone. In order to meet the Moderate area requirements, the MAG 1993 Ozone Plan for the Maricopa County Area was submitted to the Environmental Protection Agency by November 15, 1993. An Addendum to this Plan containing additional control measures was submitted to EPA in March 1994.

On April 13, 1994, EPA issued a incompleteness finding on the 1993 Ozone Plan and Addendum because the plan failed to include, in fully adopted and enforceable form, all of the measures relied upon in the 15 percent demonstration. This action started a two year FIP clock under CAA Section 110(c) for EPA to promulgate a 15 percent Rate of Progress Federal Implementation Plan. In November 1994 the modeling attainment demonstration for the 1993 Ozone Plan and Addendum was submitted to EPA with a revision to the modeling attainment demonstration following in April 1995. The MAG 1993 Ozone Plan and Addendum, as well as the attainment demonstration, was found complete by EPA on May 12, 1995.

Modeling contained in the Revision to the Modeling Attainment Demonstration for the MAG 1993 Ozone Plan for the Maricopa County Area and Addendum concluded that reductions in NOx would increase ozone concentrations and therefore not contribute to attainment of the ozone standard. EPA finalized approval of a NOx exemption petition for the Maricopa County Nonattainment Area on April 19, 1995. Section 182 of the CAA allows for an exemption when reductions of oxides of nitrogen (NOx) would not contribute to ozone attainment.

On November 6, 1997, the nonattainment area was reclassified to Serious due to failure to attain the ozone standard by November 15, 1996. The Serious Area reclassification was effective on February 13, 1998. Following the outcome of a lawsuit filed to require that EPA enforce the Federal Implementation Plan provisions in Section 110(c), EPA promulgated a Federal Implementation Plan for the 15 Percent Rate of Progress requirement on May 27, 1998.

On December 14, 2000, the Serious Area Ozone State Implementation Plan for Maricopa County was submitted to EPA by the Arizona Department of Environmental Quality. In accordance with Section 110, a completeness finding on the Serious Area Ozone State Implementation Plan was deemed by operation of law since a determination was not made by EPA within six months of receipt of the Plan.

While this latest SIP has not been approved under section 110(k), it is anticipated that EPA approval will occur before this request for redesignation is submitted. If not, approval action on SIP elements of the Serious Area Ozone State Implementation Plan for Maricopa County and the redesignation request may occur simultaneously.

On May 30, 2001, EPA determined that the serious ozone nonattainment area had attained the one-hour ozone standard. The attainment determination was effective June 29, 2001. EPA also determined that the serious area requirements for reasonable further progress, attainment determinations, and contingency measures for the one-hour standard would not apply as long as the area continued to attain the standard.

#### REQUIRED COMPONENTS OF A REDESIGNATION REQUEST

Sections 107(d)(3)(D) and (E) of the Clean Air Act define the criteria that must be met before an area can be redesignated to attainment. With the submittal of this redesignation request and maintenance plan, the Maricopa County nonattainment area meets the five required criteria, summarized below:

1. Attainment of the Standard

Chapter Two shows that the area has attained the national one-hour ozone standard. Effective June 29, 2001, EPA determined that the serious ozone nonattainment area had attained the one-hour ozone standard.

2. State Implementation Plan Approval

On December 14, 2000, the Arizona Department of Environmental Quality submitted the Serious Area Ozone State Implementation Plan for Maricopa County to EPA. In accordance with Section 110, a completeness finding was deemed by operation of law. EPA approval of the plan may be forthcoming.

3. Improvement in Air Quality Due to Permanent and Enforceable Emission Reductions

Chapter Two discusses the evidence that the improvement in air quality leading to attainment and maintenance of the standards has been due to permanent and enforceable emissions reductions.

#### 4. Clean Air Act Section 110 and Part D Requirements

Chapter Two discusses how requirements of Clean Air Act Section 110 (for SIPs) and Part D (for nonattainment areas) are satisfied by the Final Serious Area Ozone State Implementation Plan for Maricopa County and the One-Hour Maintenance Plan provided in Chapter Three of this document. In addition, some of these requirements are satisfied by the Revised MAG 1999 Serious Area Carbon Monoxide Plan and MAG Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area, which were submitted to EPA on April 18, 2001 and June 16, 2003 respectively. Several of the carbon monoxide measures also reduce ozone and have therefore been included in the Ozone Maintenance Plan.

#### 5. Maintenance Plan

Chapter Three contains the Maintenance Plan for the Maricopa County one-hour ozone nonattainment area. The Maintenance Plan demonstrates that the area will continue to maintain the one-hour ozone standard through 2015, a period of at least ten years following redesignation to attainment by EPA. The Maintenance Plan also contains contingency measures that have been implemented and describes the process and schedule that will be used to consider additional measures, if needed. Contingency provisions will be triggered when the three-year average of the fourth highest daily maximum hourly measurement exceeds 0.120 ppm at any ozone monitor.

## CHAPTER TWO

### REDESIGNATION REQUEST

The Maricopa Association of Governments (MAG) requests that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa County nonattainment area to attainment for the one-hour ozone National Ambient Air Quality Standard. The area was designated a one-hour ozone nonattainment area in 1978, but has not violated the standard since 1996. Therefore, the area is eligible for redesignation.

#### REQUIRED COMPONENTS OF A REDESIGNATION REQUEST

The EPA Administrator may not redesignate an area to attainment, unless the following requirements of Section 107(d)(3)(E) of the Clean Air Act (CAA) are met. These four requirements for redesignation are discussed in this chapter.

1. The Administrator determines that the area has attained the national ambient air quality standards.
2. The Administrator has fully approved the applicable implementation plan under Section 110(k).
3. The Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements under Section 110 and Part D.

A fifth requirement for redesignation to attainment is that:

5. The EPA Administrator approve a maintenance plan for the area that meets the provisions of Section 175A.

Chapter Three contains the maintenance plan that is being submitted to EPA to fulfill this fifth and final requirement.

#### ATTAINMENT OF THE ONE-HOUR OZONE STANDARD

On May 30, 2001, the Environmental Protection Agency determined that the Maricopa serious ozone nonattainment area had attained the one-hour standard. The attainment determination was effective June 29, 2001.

Attainment of the one-hour ozone National Ambient Air Quality Standard is demonstrated when three consecutive years of monitoring data for each site average no more than one exceedance per year. The following information demonstrates, as required by Section 107(d)(3)(E) of the Clean Air Act, that the Maricopa County nonattainment area has

attained the one-hour ozone national air quality standard. This is based on quality assured monitoring data representing all monitoring locations in the nonattainment area.

### Historical Perspective

A review of one-hour ozone monitoring data since 1994 reveals that in 1994 through 1996, there were a total of 18 exceedance days, six in 1994, eleven in 1995, and one in 1996. Data from the regional monitoring network indicates that the Maricopa County nonattainment area last exceeded the one-hour ozone standard in 1996. There were no exceedances of the standard at any site during the period 1997-2002.

The Maricopa County nonattainment area typically experiences hot conditions during the summer months between May and September with daytime temperatures exceeding 90 degrees Fahrenheit. Although seasonal rainfall may occur during this period, dry conditions usually persist with clear skies making the region conducive to ozone formation. Wind speeds during the summer are frequently less than five miles per hour. The differences in topography between the mountainous areas and valley floor create uneven heating and cooling which influence air flow patterns. The wind patterns generally exhibit an easterly direction in the morning and shift to a westerly direction in the afternoon. These wind patterns generally tend to disperse precursor emissions to the east and north of the urban area. A detailed description of the climate conditions and local wind patterns is included in the Final Serious Area Ozone State Implementation Plan for Maricopa County on pages 1-1 through 1-3.

### Ozone Monitoring Network

The ambient air monitoring network for ozone in the Maricopa County nonattainment area consists of four National Air Monitoring Stations (NAMS), 14 State and Local Air Monitoring Stations (SLAMS), and three Special Purpose Monitors (SPM) operated by the Maricopa County Environmental Services Department and the Arizona Department of Environmental Quality. The ozone monitoring sites are identified, along with summary data from 2000 through 2002, in Tables 2-1 through 2-3. Figure 2-1 shows the geographical distribution of the regional monitoring network.

### Monitoring Results and Attainment of the Standard

The monitoring data presented in Tables 2-1 through 2-3 verify that the Maricopa County nonattainment area has been in attainment for the national one-hour ozone standard since 1997, as well as for the most recent three-year period (2000-2002), in accordance with the federal requirements of 40 CFR 50.9. Data recovery rates for most monitors within the monitoring network exceed the 75 percent completeness requirements for the three-year period. In addition, all state and federal quality assurance procedures have been followed. Figure 2-2 illustrates the downward trend for monitors in the nonattainment area with the fourth-highest one-hour ozone concentrations.

**TABLE 2-1**

**2000 OZONE MONITORING DATA SUMMARY FOR  
THE MARICOPA COUNTY NONATTAINMENT AREA  
1-HOUR STANDARD: .12 PPM\***

<b>Site</b>	<b>Max Value (PPM)</b>	<b>2<sup>nd</sup> High (PPM)</b>	<b>3<sup>rd</sup> High (PPM)</b>	<b>4<sup>th</sup> High (PPM)</b>
Blue Point, Userly Pass & Bush Hwy	.108	.107	.101	.101
Central Phoenix, 1845 E. Roosevelt	.094	.092	.091	.091
Emergency Mgt., 2035 N. 52nd St. <sup>S</sup>	.088	.085	.084	.083
Falcon Field, 4530 E. McKellips,	.097	.093	.092	.090
Fountain Hills, 16426 E. Palisades	.117	.106	.101	.097
Glendale, 6000 W. Olive <sup>S</sup>	.100	.094	.090	.089
Humboldt Mt., Top of Humboldt Mt. <sup>S</sup>	.093	.093	.092	.091
# JLG Supersite, 4530 N. 17th Ave.	.104	.090	.089	.085
Lake Pleasant, 41402 N. 17th Ave. <sup>S</sup>	.097	.092	.091	.091
Maryvale, 6180 W. Encanto <sup>S</sup>	.100	.096	.093	.092
Mesa, 370 S. Brooks	.102	.090	.087	.083
Mount Ord, Mazatzal Mountains	.111	.109	.106	.105
North Phoenix, 601 E. Butler	.107	.107	.098	.096
Palo Verde, 36248 W. Elliot Rd.	.103	.091	.087	.085
Pinnacle Peak, 25000 N. Windy Walk	.117	.104	.100	.097
Rio Verde, 25608 N. Forest Rd. <sup>S</sup>	.117	.108	.107	.105
South Phoenix, 33 W. Tamarisk	.102	.094	.093	.092
South Scottsdale, 2857 N. Miller	.099	.097	.097	.096
# Tempe, Apache Blvd. & College Ave.	.099	.094	.090	.090
# West Chandler, 163 S Price <sup>S</sup>	.083	.083	.082	.079
# West Chandler, Frye Rd. & Ellis <sup>S</sup>	.100	.099	.091	.090
West Phoenix, 3847 W. Earll	.099	.098	.097	.092

\* Due to mathematical rounding, values  $\geq$  .125 ppm are necessary to exceed the standard.

# Indicates < 75% data available.

<sup>S</sup> Seasonal monitor operating from April 1 to November 1.

**TABLE 2-2**

**2001 OZONE MONITORING DATA SUMMARY FOR  
THE MARICOPA COUNTY NONATTAINMENT AREA  
1-HOUR STANDARD: .12 PPM\***

<b>Site</b>	<b>Max Value (PPM)</b>	<b>2<sup>nd</sup> High (PPM)</b>	<b>3<sup>rd</sup> High (PPM)</b>	<b>4<sup>th</sup> High (PPM)</b>
Blue Point, Utery Pass & Bush Hwy	.111	.104	.093	.093
# Cave Creek, 37109 N. Lava Lane <sup>S</sup>	.112	.100	.096	.092
Central Phoenix, 1845 E. Roosevelt	.091	.091	.090	.090
# Emergency Mgt., 2035 N. 52nd St. <sup>S</sup>	.073	.072	.072	.072
Falcon Field, 4530 E. McKellips,	.111	.100	.097	.095
Fountain Hills, 16426 E. Palisades	.110	.106	.098	.097
Glendale, 6000 W. Olive <sup>S</sup>	.116	.099	.098	.098
Humboldt Mt., Top of Humboldt Mt. <sup>S</sup>	.098	.096	.096	.096
JLG Supersite, 4530 N. 17th Ave.	.101	.095	.094	.093
# Lake Pleasant, 41402 N. 87th Ave. <sup>S</sup>	.085	.083	.082	.080
Maryvale, 6180 W. Encanto <sup>S</sup>	.097	.091	.089	.088
Mesa, 370 S. Brooks	.093	.092	.088	.084
Mount Ord, Mazatzal Mountains <sup>S</sup>	.102	.089	.089	.089
North Phoenix, 601 E. Butler	.110	.101	.098	.097
Palo Verde, 36248 W. Elliot Rd. <sup>S</sup>	.085	.085	.083	.081
Pinnacle Peak, 25000 N. Windy Walk	.107	.103	.102	.100
Rio Verde, 25608 N. Forest Rd. <sup>S</sup>	.102	.100	.099	.096
South Phoenix, 33 W. Tamarisk	.098	.094	.092	.086
South Scottsdale, 2857 N. Miller	.102	.101	.094	.092
# Surprise, 18600 N. Reems	.093	.088	.087	.083
Tempe, Apache Blvd. & College Ave.	.099	.099	.096	.093
West Chandler, Frye Rd. & Ellis <sup>S</sup>	.105	.100	.096	.092
West Phoenix, 3847 W. Earll	.099	.094	.094	.089

\* Due to mathematical rounding, values  $\geq .125$  ppm are necessary to exceed the standard.

# Indicates < 75% data available.

<sup>S</sup> Seasonal monitor operating from April 1 to November 1.

**TABLE 2-3**

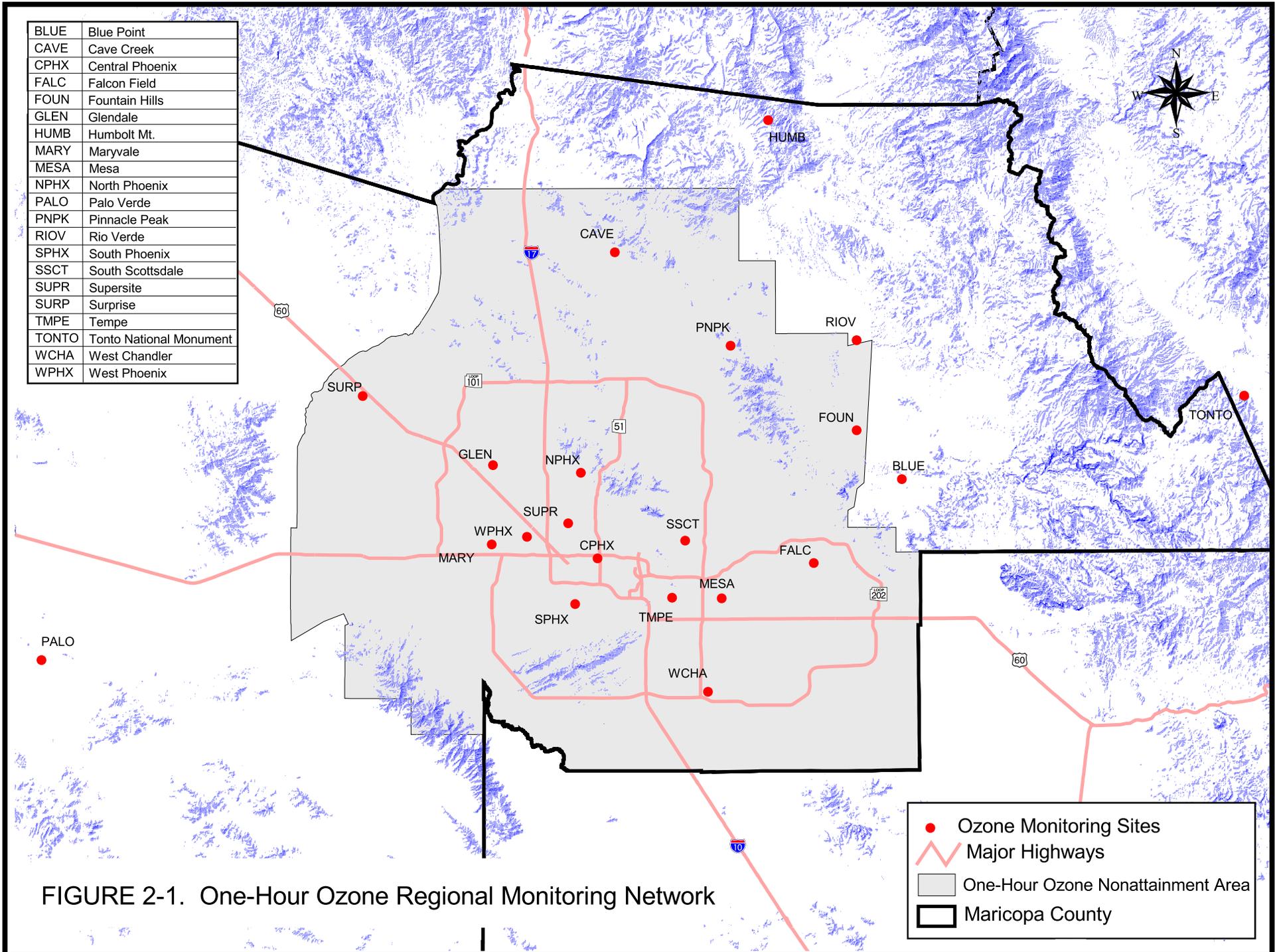
**2002 OZONE MONITORING DATA SUMMARY FOR  
THE MARICOPA COUNTY NONATTAINMENT AREA  
1-HOUR STANDARD: .12 PPM\***

<b>Site</b>	<b>Max Value (PPM)</b>	<b>2<sup>nd</sup> High (PPM)</b>	<b>3<sup>rd</sup> High (PPM)</b>	<b>4<sup>th</sup> High (PPM)</b>
Blue Point, Utery Pass & Bush Hwy	.110	.104	.102	.098
Cave Creek, 37109 N. Lava Lane <sup>S</sup>	.102	.100	.099	.096
Central Phoenix, 1845 E. Roosevelt	.123	.098	.089	.089
Falcon Field, 4530 E. McKellips,	.113	.111	.101	.098
Fountain Hills, 16426 E. Palisades	.114	.107	.105	.101
Glendale, 6000 W. Olive <sup>S</sup>	.101	.099	.097	.090
Humboldt Mt., Top of Humboldt Mt. <sup>S</sup>	.124	.099	.098	.096
JLG Supersite, 4530 N. 17th Ave.	.117	.110	.094	.088
Maryvale, 6180 W. Encanto <sup>S</sup>	.119	.111	.108	.094
Mesa, 370 S. Brooks	.097	.091	.083	.083
North Phoenix, 601 E. Butler	.111	.104	.104	.100
Palo Verde, 36248 W. Elliot Rd. <sup>S</sup>	.092	.090	.085	.085
Pinnacle Peak, 25000 N. Windy Walk	.115	.102	.101	.101
Rio Verde, 25608 N. Forest Rd. <sup>S</sup>	.101	.100	.099	.099
South Phoenix, 33 W. Tamarisk	.104	.104	.091	.089
South Scottsdale, 2857 N. Miller	.102	.094	.093	.092
Surprise, 18600 N. Reems	.098	.091	.086	.086
Tempe, Apache Blvd. & College Ave.	.100	.097	.096	.096
# Tonto National Monument, Maintenance Station <sup>S</sup>	.111	.107	.102	.097
West Chandler, Frye Rd. & Ellis <sup>S</sup>	.110	.101	.097	.096
West Phoenix, 3847 W. Earll	.123	.116	.097	.095

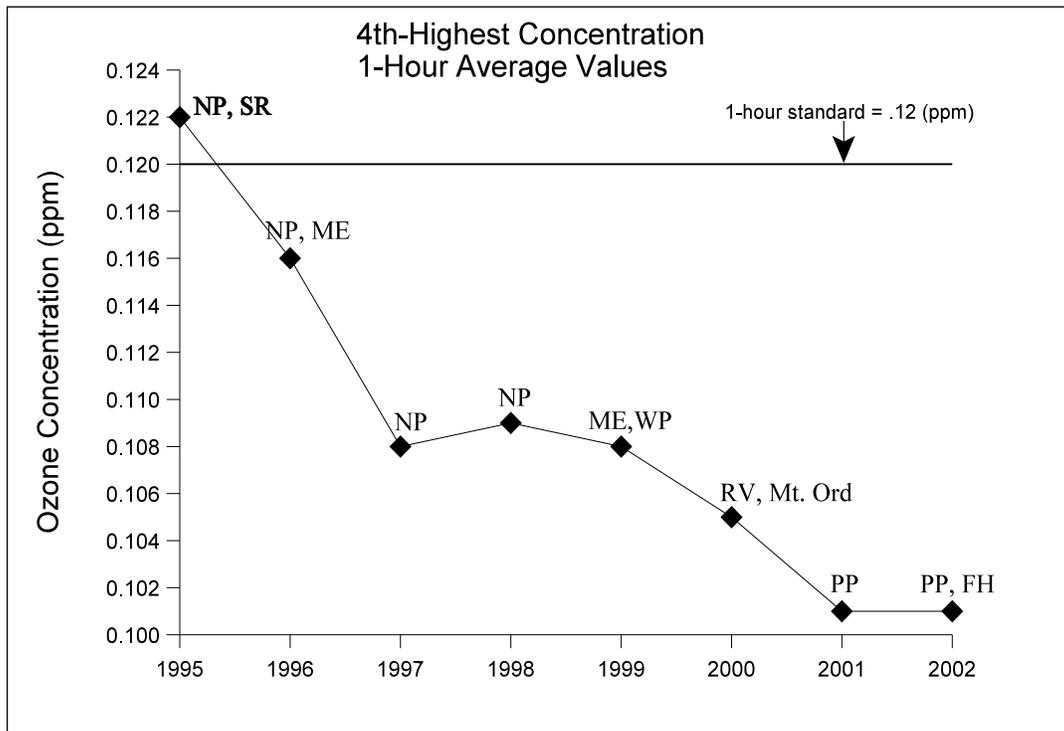
\* Due to mathematical rounding, values  $\geq$  .125 ppm are necessary to exceed the standard.

# Indicates < 75% data available.

<sup>S</sup> Seasonal monitor operating from April 1 to November 1.



**FIGURE 2-2  
ONE-HOUR OZONE TRENDS  
(1995-2002)**



Monitor Where 4th-Highest Reading Occurred

- (NP) North Phoenix
- (SR) Salt River-Pima Indian Reservation
- (ME) Mesa
- (WP) West Phoenix
- (PP) Pinnacle Peak
- (RV) Rio Verde
- (FH) Fountain Hills

## Quality Assurance Program

One-hour ozone data for the Maricopa County area has been collected and quality-assured in accordance with 40 CFR, Part 58, Appendix A, EPA's "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II; Ambient Air Specific Methods", the Maricopa County Ambient Air Monitoring Program QA/QC Procedures, and the Arizona Department of Environmental Quality (ADEQ) Quality Assurance Project Plan. The data are recorded in the EPA Aerometric Information Retrieval System (AIRS) and are also available for public review in air quality monitoring reports produced annually by the Maricopa County Environmental Services Department and the Arizona Department of Environmental Quality.

## APPROVAL OF THE OZONE NONATTAINMENT SIP ELEMENT FOR THE MARICOPA COUNTY AREA

In accordance with the 1990 Clean Air Act Amendments, the Maricopa County nonattainment area was initially classified as Moderate for ozone. In order to meet the Moderate area requirements, the MAG 1993 Ozone Plan was submitted to the Environmental Protection Agency by November 15, 1993. An Addendum to this Plan was submitted in March 1994. On November 6, 1997, the nonattainment area was reclassified to Serious due to failure to attain the one-hour ozone standard by November 15, 1996. The Serious Area reclassification was effective on February 13, 1998.

On December 14, 2000, the Arizona Department of Environmental Quality submitted the Final Serious Area Ozone State Implementation Plan for Maricopa County to EPA. In accordance with Section 110, a completeness finding on the Final Serious Area Ozone State Implementation Plan was deemed by operation of law since a determination was not made by EPA within six months of receipt of the Plan.

While this latest SIP has not been approved under Section 110(k), it is anticipated that EPA may approve the Final Serious Area Ozone Plan before this request for redesignation is submitted. If not, approval action on SIP elements of the Revised Serious Area Ozone Plan and the redesignation request can occur simultaneously.

## IMPROVEMENT IN AIR QUALITY DUE TO PERMANENT AND ENFORCEABLE EMISSION REDUCTIONS

This section is intended to demonstrate that the improved air quality in the Maricopa County nonattainment area has occurred as a result of permanent and enforceable emissions reductions. The monitoring data clearly indicate that ozone concentrations have declined steadily since 1994. This continuous decline in emissions and concentrations has occurred during a period when the area has experienced more than a 25 percent increase in population, employment, and vehicle miles of travel.

According to the EPA memorandum, Procedures for Processing Requests to Redesignate Areas to Attainment, September 4, 1992, "The state must be able to reasonably attribute

the improvement in air quality to emission reductions which are permanent and enforceable.” As Figure 2-2 illustrates, there has been a continuous downward trend in ozone concentrations at all monitors in the nonattainment area. The fourth-highest ozone levels decreased by 17 percent between 1995 and 2002, at the same time population, employment and vehicle travel in the nonattainment area increased by about 30 percent.

Over time, several control measures have been implemented in the Maricopa County nonattainment area which have resulted in the decline in ozone concentrations. For example, the Environmental Protection Agency published a final rule on May 27, 1998 determining that the Maricopa nonattainment area has in place sufficient control measures to meet the 15 percent rate of progress requirement in the Clean Air Act. The Final Serious Area Ozone State Implementation Plan submitted in December 2000 also included Reasonably Available Control Technology (RACT) requirements for sources subject to RACT under the Clean Air Act.

In addition, the Revised MAG 1999 Serious Area Carbon Monoxide Plan and MAG Carbon Monoxide Redesignation Request and Maintenance Plan include measures which also reduce ozone. Many of these measures have been included in this Ozone Maintenance Plan.

The Maintenance Plan described in the next chapter models the year 2015. Table VI-2 in the One-Hour Maintenance Plan Technical Support Document summarizes the emission reductions attributable to control measures in 2015. The next section describes the control measures for which numeric emission reduction credit was assumed in order to maintain the one-hour ozone standard through 2015.

## ATTAINMENT AND MAINTENANCE CONTROL MEASURES

Generally, the overall approach taken in preparing the One-Hour Ozone Maintenance Plan is to demonstrate maintenance of the one-hour ozone standard in 2015 with the committed measures in the Revised MAG 1999 Serious Area Carbon Monoxide Plan and Carbon Monoxide Redesignation Request and Maintenance Plan, since most of those measures also reduce ozone. Therefore, the Ozone Maintenance Plan relies heavily upon the Revised MAG Serious Area Carbon Monoxide Plan and its supporting documents, including the commitments to implement control measures. The Ozone Maintenance Plan also relies upon the Final Serious Area Ozone State Implementation Plan for Maricopa County and the modified Arizona Cleaner Burning Gasoline Program.

Detailed descriptions of the measures are contained in Chapter Eight of the Revised Serious Area Carbon Monoxide Plan, (fifty-five measures) Chapters Two and Three of the Carbon Monoxide Maintenance Plan, and Chapter Two of the Final Serious Area Ozone SIP for Maricopa County. The committed measures used for numeric emission reduction credit in the Ozone Maintenance Plan for 2015 are described below. These measures, which are permanent and enforceable, are anticipated to be in place through the maintenance year of 2015. Continued implementation of these measures, as well as the

other measures in the aforementioned plans, will ensure continuing reductions in emissions through 2015 and beyond.

1. Summer Fuel Reformulation: California Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May 1 through September 30

The Arizona Legislature passed H.B. 2307 in 1997 which contains requirements for the sale of gasoline from and after May 1, 1999 in Area A, subject to an appropriate waiver granted under Section 211 (c) (4) of the Clean Air Act, that meets the following fuel reformulation options:

- California Phase 2 Reformulated Gasoline, including alternative formulations allowed by the predictive model, as adopted by the California Air Resources Board pursuant to the California Code of Regulations, Title 13, Sections 2261 through 2262.7 and 2265, in effect on January 1, 1997, that meets the maximum 7.0 psi summertime vapor pressure requirements in A.R.S. Section 41-2083, Subsections D and F.
- Gasoline that meets the standards for Federal Phase II Reformulated Gasoline, as provided in 40 CFR Section 80.41, paragraphs (a) through (h), in effect on January 1, 1997, that meets the maximum 7.0 psi summertime vapor pressure requirement in A.R.S. Section 41-2083 Subsections D and F.

On February 10, 1998, the Environmental Protection Agency approved Arizona's cleaner burning gasoline (CBG) program into the State Implementation Plan. The program was implemented in two stages - from June to September 1998, gasoline sold in the area had to meet the standards similar to Federal Phase I Reformulated Gasoline or California's Phase 2 Reformulated Gasoline. Then, beginning May 1, 1999, all gas sold in the area had to meet standards similar to Federal Phase II or California's Phase 2 Reformulated Gasoline.

Arizona's CBG Program was included in the 1998 metropolitan Phoenix Ozone 15 Percent Rate of Progress Federal Implementation Plan as a committed control measure for emissions reduction credit. On July 6, 1999, EPA finalized a rule revising the federal plan as it related to the CBG Program.

On April 28, 2000, Senate Bill 1504 was signed into law by the Governor of Arizona. The law revised A.R.S. Section 41-2124 by eliminating the maximum oxygenate requirement for summertime gasoline in Maricopa County. Because of the cost and difficulty of blending ethanol in CBG and meeting the 7.0 psi Reid Vapor Pressure standard, MTBE has been the primary oxygenate used in Arizona's summertime CBG.

On September 29, 2003, the Environmental Protection Agency published a notice proposing to approve revisions to the Arizona Clean Burning Gasoline Program currently approved in the State Implementation Plan. The revisions replace Arizona's interim CBG

program with a permanent program, amend the wintertime CBG program to limit the types of gasoline that may be supplied, and remove the minimum oxygen requirement for summertime gasoline. On January 26, 2004, the EPA Administrator signed the final approval notice for the revisions to the Arizona Clean Burning Gasoline Program. The final notice was published in the Federal Register on March 4, 2004, effective on April 5, 2004.

This measure is a committed measure in the State Implementation Plan for ozone and a committed maintenance measure in the Ozone Maintenance Plan. This measure accounts for a 1.8 percent reduction in NO<sub>x</sub> emissions and 0.6 percent reduction in VOC emissions in 2015. Additional information on this measure can be found in the One-Hour Ozone Maintenance Plan Technical Support Document on page VI-6.

## 2. Phased-In Emission Test Cutpoints

The Arizona Vehicle Inspection Maintenance Program was established in 1976 to promote the clean operation of motor vehicles by controlling vehicle exhaust emissions. The program is operated by the Arizona Department of Environmental Quality and contains the provisions listed in Section 182(c)(3) of the Clean Air Act for an Enhanced Vehicle Inspection and Maintenance Program.

The Vehicle Emissions Inspection Maintenance Program was significantly enhanced and strengthened by the Arizona Legislature in 1993 (H.B. 2001). The Legislature established a biennial, transient loaded (I/M 240) emissions test for gasoline powered vehicles model year 1981 or newer with a gross vehicle weight of up to 8,500 pounds, beginning January 1, 1995.

In 1993, the Arizona Legislature passed H.B. 2001 which increased the repair threshold limits for gasoline powered vehicles in order to be eligible for a waiver through the Vehicle Emissions Inspection Maintenance Program. The repair limits were increased in the following manner: 1967-1974 from \$50 to \$100; 1975-1980 from \$200 to \$300; and 1981 and newer from \$300 to \$450. The bill also increased the repair threshold limits from \$300 to \$500 for diesel powered vehicles with tandem axles or a gross vehicle weight in excess of 26,000 pounds.

The Arizona Legislature passed H.B. 2237 in 1997 which contained an appropriation of \$120,000 from the State General Fund to the Arizona Department of Environmental Quality to develop and implement an alternative test protocol to reduce the false failure rates associated with the more stringent pass-fail standards for the Vehicle Emissions Testing Program (Section 19 of H.B. 2237).

In addition, the Arizona Department of Environmental Quality was to implement Interim Test Cutpoints for the Vehicle Emissions Inspection Program until issues were resolved with the final test cutpoints for the I/M 240 Program. The Interim Cutpoints were selected to achieve the following failure rates in three vehicle class categories (Light Duty Gasoline Vehicles, Light Duty Gasoline Trucks 1, and Light Duty Gasoline Trucks 2: 50 percent for Model Years 1981-85; 25 percent for 1986 to 1989 model years, and 10 percent for Model Years 1990-93).

In August 2002, EPA proposed approval of the Arizona I/M Program and signed the final approval notice on October 31, 2002. The final approval notice was published in the Federal Register on January 22, 2003. This measure is a committed attainment measure in the Revised Serious Area Carbon Monoxide Plan, a committed maintenance measure in the Carbon Monoxide Maintenance Plan, and a committed maintenance measure in the One-Hour Ozone Maintenance Plan. This measure is estimated to provide less than 0.1 percent increase in NO<sub>x</sub> emissions and less than a 0.1 percent reduction in VOC emissions, in 2015. Additional information on this measure can be found in the Revised Serious Area Carbon Monoxide Plan on page 8-5, Carbon Monoxide Maintenance Plan TSD on page VII-10, and the One-Hour Ozone Maintenance Plan Technical Support Document on page VI-11.

### 3. One-Time Waiver from Vehicle Emissions Test

The Arizona Legislature passed S.B. 1002 in 1996 which limits the issuance of a waiver for failure to comply with the emission testing requirements to one-time only beginning January 1, 1997 (A.R.S. 49-542 D). This measure is a committed attainment measure in the Revised Serious Area Carbon Monoxide Plan, a committed maintenance measure in the Carbon Monoxide Maintenance Plan, and a committed measure in the One-Hour Ozone Maintenance Plan. This measure is estimated to provide a less than 0.1 percent reduction in NO<sub>x</sub> emissions and less than a 0.1 percent reduction in VOC emissions, in 2015. Additional information on this measure can be found in the Revised Serious Area Carbon Monoxide Plan on page 8-10, Carbon Monoxide Maintenance Plan Technical Support Document on page VII-11, and the One-Hour Ozone Maintenance Plan Technical Support Document on page VI-12.

### 4. Coordinate Traffic Signal Systems

The Arizona Legislature passed H.B. 2001 in 1993 which required that Maricopa County and the cities and towns in the vehicle emissions control area (Maricopa County nonattainment area) synchronize traffic control signals on all roadways, within and across jurisdictional boundaries, which have a traffic flow exceeding 15,000 motor vehicles per day.

The synchronization of existing signals, as well as the enhancement of coordination among signal systems that are already synchronized, has been identified by many jurisdictions through a number of programs. Enhancement efforts range from large scale programs covering broad geographic areas to incremental additions of a few synchronized signals to the network. This includes both individual city projects and regional programs, such as AZTech, also mentioned below.

This measure is a committed attainment measure in the Revised Serious Area Carbon Monoxide Plan, a committed maintenance measure in the Carbon Monoxide Maintenance Plan, and a committed maintenance measure in the One-Hour Ozone Maintenance Plan. This measure is estimated to provide less than 0.1 percent reduction in NO<sub>x</sub> emissions and a 0.1 percent reduction in VOC emissions, in 2015. Additional information on this measure can be found in the Revised Serious Area Carbon Monoxide Plan on page 8-88, Carbon

Monoxide Maintenance Plan TSD, on page VII-13, and the One-Hour Ozone Maintenance Plan Technical Support Document on page VI-13.

## 5. Develop Intelligent Transportation Systems

Many local jurisdictions have begun planning and implementing advanced technology based solutions to address complex traffic management issues on the regional transportation network. These technologies involve the application of electronics, telecommunications and sensor technologies and are collectively referred to as Intelligent Transportation Systems (ITS).

A key component of the regional Intelligent Transportation Infrastructure is the Freeway Management System (FMS) operated by the Arizona Department of Transportation (ADOT). The FMS currently covers 42 miles of the freeway system and provides services such as traveler advisories and incident management. The other major regional ITS initiative is the AZTech project. This project was selected and funded by USDOT to serve as one of four ITS Model Deployment Initiatives in the nation. Key elements of the AZTech project are the interconnection of 13 local traffic management centers and the instrumentation of eight “smart” corridors that cover nearly 150 miles of arterial streets.

This measure is a committed attainment measure in the Revised Carbon Monoxide Serious Area Carbon Monoxide Plan, a committed maintenance measure in the Carbon Monoxide Maintenance Plan, and a committed measure in the One-Hour Ozone Maintenance Plan. This measure accounts for a less than 0.1 percent increase in NO<sub>x</sub> emissions and less than 0.1 percent reduction in VOC emissions, in 2015. Additional information on this measure can be found in the Revised Serious Area Carbon Monoxide Plan on page 8-31, Carbon Monoxide Maintenance Plan TSD on page VII-14, and One-Hour Ozone Maintenance Plan Technical Support Document on page VI-14.

## 6. Tougher Enforcement of Vehicle Registration and Emissions Test Compliance

The Motor Vehicle Division (MVD) of the Arizona Department of Transportation (ADOT) has instituted a comprehensive vehicle registration enforcement program. Three key elements of the new program are a Registration Enforcement Team, a Registration Enforcement Tracking System, and a New Resident Tracking Program. Through public participation, consistent policy and procedure application, and new tracking methods, MVD will enforce the Arizona registration laws to ensure vehicles in question are registered properly. This will be an ongoing effort.

Another phase of the Program is an initiative to coordinate ADOT efforts with other law enforcement agencies to assist MVD personnel in enforcing registration compliance. Other initiatives include a system user agreement between MVD and the City Courts to utilize information in conjunction with registration compliance and discussions with U.S. West (now known as Qwest) for obtaining information relating to new connect customers.

The Arizona Legislature passed S.B. 1427 in 1998 which requires school districts and special districts in Area A to prohibit parking in employee parking lots by employees who

have not complied with emissions testing requirements. Cities, towns, and counties in Area A and Area B are currently subject to this provision (A.R.S. 49-552).

In 1999, the Arizona Legislature passed H.B. 2254 which requires each vehicle that is owned by the United States government and that is domiciled in this state for more than ninety consecutive days and each vehicle that is owned by a state or political subdivision of this state to comply with A.R.S. 49-542.

Collectively, the provisions in H.B. 2254 that apply to Tougher Enforcement of Vehicle Registration and Emissions Test Compliance include A.R.S. 49-557 and 49-541.01 D. and E.

This measure is a committed contingency measure in the Revised Serious Area Carbon Monoxide Plan, a committed maintenance measure in the Carbon Monoxide Maintenance Plan and a committed measure in the One-Hour Ozone Maintenance Plan. This measure accounts for a 0.1 percent reduction in NO<sub>x</sub> emissions and a 0.1 percent reduction in VOC emissions in 2015. Additional information on this measure can be found in the Revised Serious Area Carbon Monoxide Plan on page 8-13, Carbon Monoxide Maintenance Plan Technical Support Document on page VII-15, and One-Hour Maintenance Plan Technical Support Document on page VI-16.

#### 7. Maricopa County Rule 348: Aerospace Manufacturing and Rework Operations

Maricopa County adopted Rule 348 on April 4, 1999 to implement reasonably available control technology (RACT) for aerospace manufacturing and rework operations. The rule was approved into the State Implementation Plan effective November 19, 1999 (see 64 FR 50759). The purpose of the rule is to limit the emissions of volatile organic compounds from the manufacture and rework of aerospace vehicles and their components. Some of the vehicles included in Rule 348 are airplanes, helicopters, missiles, rockets and space vehicles.

The SIP approved measure is a RACT measure in the Final Serious Area Ozone State Implementation Plan for Maricopa County and a RACT and committed measure in the One-Hour Ozone Maintenance Plan. Rule 348 has a control efficiency of 3 percent and a rule effectiveness of 80 percent for SCC codes 31399999, 39999999, 40200701, 40100901, 40203001, 40299999, 40400213, and 40799999. This measure accounts for a less than 0.1 percent reduction in VOC emissions. There is no expected effect on NO<sub>x</sub> emissions. Additional information on this measure can be found in the Final Serious Area Ozone SIP on page 2-4 and the One-Hour Ozone Maintenance Plan Technical Support Document on page VI-17.

#### CLEAN AIR ACT SECTION 110 AND PART D REQUIREMENTS

Before an area can be redesignated to attainment, it must meet the requirements of Section 110 and Part D of the Clean Air Act. The provisions of Section 110(a)(2) and Part D are required as part of the State Implementation Plan to bring the Maricopa County nonattainment area into attainment, and have been addressed in plan submissions

currently under review by EPA. EPA has indicated that they expect to approve the Revised MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area in 2003, which includes several of the same measures relied upon for the One-Hour Ozone Maintenance Plan. It is also anticipated that EPA will approve the Carbon Monoxide Redesignation Request and Maintenance Plan and the Final Serious Area Ozone State Implementation Plan for Maricopa County in the near future. Upon approval of the plans, EPA will have determined that all applicable provisions of Section 110 and Part D have been met. The following section lists the applicable requirements of Section 110 and Part D and provides references from the Revised Serious Area Carbon Monoxide Plan, Carbon Monoxide Maintenance Plan, and Final Serious Area Ozone Plan that address those requirements.

Section 110(a)(2) addresses general requirements for State Implementation Plans. The following discussion indicates how each of these requirements is addressed in the Revised Serious Area Carbon Monoxide Plan and other plans as appropriate. The numbers in parentheses indicate the subsection of the following narrative in which each of the Section 110(a)(2) requirements is addressed below.

- (A) Include enforceable measures and schedules necessary to show compliance. (1)
  - 2. Monitor and compile data on ambient air quality. (2)
  - 3. Provide a program to enforce measures in (A) and regulate stationary sources. (1),(4)
  - (D) Prohibit sources from emitting pollutants that would contribute significantly to nonattainment, interfere with maintenance of the standard, or interfere with Prevention of Significant Deterioration (PSD) or visibility in other states. (3)
  - 5. Provide assurances that there are adequate resources to implement the plan, nothing in the SIP is otherwise prohibited by law, and the State has responsibility for ensuring adequate implementation. (1)
  - 6. Stationary source emissions monitoring and reporting. (4)
  - 7. Provide for emergency powers authority. (5)
  - 8. Provide for the revisions to the plan. (6)
  - 9. Meet the applicable requirements of Part D for nonattainment areas. (10)
  - 10. Meet the requirements of Section 121 (consultation). (9);Section 127 (public notification);(7) and part C (PSD and visibility). (3),(4)
  - 11. Perform air quality modeling. (8)
  - 12. Permitting fees for major stationary sources. (4)
  - 13. Consultation and participation by local political subdivisions affected by the SIP. (9)
- (1) Enforcement, Adequate Resources, and Responsibility for Adequate Implementation

Sections 110(a)(2)(A), (C) and (E) concerning plan enforcement and implementation requirements are addressed in Chapter Eight (page 8-146) and Chapter Eleven (page 11-1) of the Revised Serious Area Carbon Monoxide Plan. In order to comply with these sections, a State law was passed in 1992 which provides an approach for assurances that

State and local committed measures will be adequately implemented (A.R.S. Section 49-406 I. and J.).

Regarding committed measures, A.R.S. Section 49-406 G. (passed by the Legislature in 1992) requires that each agency which commits to implement any control measure contained in the State Implementation Plan must describe the commitment in a resolution. The resolution must be adopted by the appropriate governing body of the agency. State law also requires the entity to specify the following information in the resolutions: (1) its authority for implementing the limitation or measure as provided in statute, ordinance, or rule; (2) a program for the enforcement of the limitation or measure; and (3) the level of personnel and funding allocated to the implementation of the measure.

Chapter Eleven of the Revised Serious Area Carbon Monoxide Plan includes resolutions from the MAG member agencies and other implementing entities. The resolutions indicate specific commitments to implement various control strategies. Generally, the authorities of cities and towns to implement the types of measures that they have committed to in their respective resolutions are provided under A.R.S. § 9-240 Powers of Common Council. The general authorities of the County to implement the measures in the commitments are provided under A.R.S. § 11-251 and A.R.S. § 49-478. Copies of these local and county government authorities are included in Chapter Eleven of the Revised Serious Area Carbon Monoxide Plan.

If any person (includes State, County, local governments, regional agencies, and other entities) fails to implement a committed measure, the County would file an action in Superior Court to have the Court order that the measure be implemented. Likewise, the Director of the Arizona Department of Environmental Quality will backstop the County if it fails to implement a committed measure or if the County fails to backstop the local governments and regional agencies (see Appendix C, Exhibit 2, Revised Serious Area Carbon Monoxide Plan).

## (2) Monitoring and Compiling of Data on Ambient Air Quality

Section 110(a)(2)(B) establishes the requirement to monitor, compile, and analyze ambient air quality data. Appendix A, Exhibit 2 of the Revised 1999 Serious Area Carbon Monoxide Plan contains the 1992 Memorandum of Agreement for Air Quality Planning. This agreement identifies Maricopa County and the Arizona Department of Environmental Quality as having the primary roles for air quality monitoring, including special purpose air quality and meteorological monitoring for plan development.

Chapter Four of the Revised Serious Area Carbon Monoxide Plan (page 4-5) provides additional evidence that the monitoring requirements for the region are being met through the efforts of the Maricopa County Environmental Services Department and the Arizona Department of Environmental Quality. Arizona Statutes 49-406. Nonattainment area plan and 49-424. Duties of Department provide the regulatory basis for air quality monitoring in the State and any nonattainment areas. Additional information on the current ambient air

quality monitoring network operated in the Maricopa nonattainment area is detailed earlier in this chapter.

### (3) Provisions to Prohibit Sources from Impacting Air Quality in Other States

Section 110(a)(2)(D) requires that a SIP contain adequate provisions prohibiting any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard; or interfere with measures required to be included in the applicable implementation plan for any other State under Part C to prevent significant deterioration of air quality or to protect visibility.

Visibility, as defined in Part C of the Clean Air Act, is currently addressed through a Federal Implementation Plan for the State of Arizona. The lack of proximity to another state makes it unlikely that ozone emissions are transported from the nonattainment area to another state.

### 4. Preconstruction Review for All New and Modified Stationary Sources; Stationary Source Emissions Monitoring; and Permitting Fees for Major Stationary Sources

The requirements of Sections 110(a)(2)(C), (F), and (L) concerning preconstruction review, emissions monitoring, and permitting fees for stationary sources are addressed by the State in Title 49, Article 2, State Air Pollution Control, and Article 3, County Air Pollution Control, of the Arizona Revised Statutes. Compliance with this requirement is the responsibility of the Arizona Department of Environmental Quality or applicable county agency. Appendix A, Exhibit 2 of the Revised Plan contains the 1992 Memorandum of Agreement for Air Quality Planning. This agreement identifies Maricopa County as having the lead role for stationary source emissions control.

Following adoption by the State, Maricopa County adopted new source review regulations designed to prevent significant deterioration of air quality, patterned after the State regulations. The Maricopa County Regulations contain requirements for obtaining installation permits for new major sources located in nonattainment, attainment, or unclassifiable areas. Both the State and Maricopa County new source review regulations are currently in effect.

The Maricopa County Air Pollution Control Regulations contain the regulations that constitute the legal basis for control of air pollution sources in Maricopa County, Arizona. They are adopted to implement the policy set forth in Title 49 of the Arizona Revised Statutes and to fulfill the State's responsibilities under the Federal Clean Air Act and its amendments to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards.

Applicable Maricopa County Air Pollution Control Regulations include; Rule 240 - Permits for New Major Sources and Major Modifications to Existing Major Sources, Rule 241 -

Permits for New Sources and Modifications to Existing Major Sources, and Rule 245 - Continuous Source Emission Monitoring.

(5) Provide for Authority Comparable to that in Section 303 for Emergency Powers

Section 110(a)(2)(G) addresses the authority for emergency powers. Under Section 303 of the Clean Air Act, upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment, the EPA Administrator may bring suit on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary. If it is not practicable to assure prompt protection of public health or welfare or the environment by commencement of such a civil action, the Administrator may issue such orders as may be necessary to protect public health or welfare or the environment.

Emergency powers for the State of Arizona are addressed under A.R.S. 49-465. Imminent and substantial endangerment, 49-462.07 Violation; injunctive relief, and 49-465 Air Pollution Emergency.

(6) Provide for Plan Revisions to Account for Changes to the NAAQS or When a Plan is Found Substantially Inadequate to Attain a Standard

Section 110(a)(2)(H) requires a plan revision to take account of revisions of such national primary or secondary ambient air quality standard, or the availability of improved or more expeditious methods of attaining such standard, and whenever the Administrator finds that the plan is substantially inadequate to attain the national ambient air quality standard.

A.R.S. 49-404 State Implementation Plan and 49-406 Nonattainment Area Plan provisions provide for State, county, and local agencies to revise the SIP to account for changes to air quality standards or if a plan is found to be inadequate. The applicable documentation for making plan revisions can be found in the Revised 1999 Serious Area Carbon Monoxide Plan, Appendix A, Exhibit 2, 1992 Memorandum of Agreement for Air Quality Planning.

(7) Meet the Applicable Requirements of Section 127 (Relating to Public Notification)

Section 110(a)(2)(J) requires a plan revision to meet the applicable requirements of Section 127 relating to Public Notification. Public notification procedures followed for the Revised Serious Area Carbon Monoxide Plan are documented in the section, Public Participation in the Preparation of the MAG 1999 Serious Area Carbon Monoxide Plan and MAG 1999 Serious Area PM-10 Plan, in Chapter Ten (page 10-3).

## (8) Air Quality Modeling

Section 110(a)(2)(K) provides for the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and the submission, upon request, of data related to such air quality modeling to the Administrator.

As documented in Chapter 2 of the Final Serious Area Ozone SIP for Maricopa County, the MAG 1993 Ozone Plan for the Maricopa County Area was submitted to EPA on November 15, 1993, followed by an Addendum in April 1994. The 1993 Ozone Plan was designed to meet the Moderate Area ozone requirements. The Modeling Attainment Demonstration for the 1993 Plan was submitted in November 1994, and in April 1995, the revisions to the Modeling Attainment Demonstration were submitted. EPA determined the submissions to be complete on May 12, 1995.

Effective June 26, 1998, the Environmental Protection Agency then promulgated a Federal Implementation Plan which demonstrated the 15 Percent Rate of Progress goal would be met by April 1, 1999 (see 63 FR 28898, May 27, 1998). On July 6, 1999, EPA finalized a rule to make minor changes to the FIP (see 64 FR 36243).

On May 30, 2001, EPA published a final determination that the Phoenix metropolitan Serious ozone nonattainment area had attained the one-hour ozone standard by the required Clean Air Act deadline of November 15, 1999. Based upon that determination, EPA also determined that the Clean Air Act's requirements for reasonable further progress and attainment demonstrations for the one-hour standard are not applicable for so long as the Phoenix metropolitan area continues to attain the one-hour ozone standard.

In this One-Hour Ozone Redesignation Request and Maintenance Plan, Chapter Three describes the air quality modeling for the maintenance demonstration. The air quality modeling is described in detail in the Technical Support Document (TSD) Ozone Modeling in Support of the One-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area. Chapter VI includes several key elements of the ozone modeling, including identification of future years, committed control measures, future year emission inventories, and maintenance demonstration.

## (9) Consultation and Participation by Local Political Subdivisions Affected by the SIP

Evidence for consultation and participation by local political subdivisions affected by the SIP can be found in Chapter Ten, Public Participation in the Revised MAG 1999 Serious Carbon Monoxide Plan (page 10-1). The decision-making structure of the Maricopa Association of Governments includes twenty-five cities and towns, the Salt River Pima-Maricopa and Gila River Indian Communities, Maricopa County and the Arizona Department of Transportation.

Appendix A, Exhibit 2 -1992 Memorandum of Agreement for Air Quality Planning from the Revised MAG 1999 Serious Area Carbon Monoxide Plan, and Chapter One of this

document detail the consultation and participation process for development of the local air quality plans.

(10) Meet the Applicable Requirements of Part D

The requirement for Nonattainment Plan Provisions are established in Part D, Subpart 1, Section 172(c), and in Subpart 2, Section 182. Section 172 lists general nonattainment plan provisions, and Subpart 2, Section 182 lists additional provisions for ozone nonattainment areas. In those instances where an area is subject to both the general nonattainment provisions in subpart 1 as well as one of the pollutant-specific subparts, the general provisions may be subsumed within, or superseded by, the more specific requirements of Subpart 2.

Subpart 1, Section 172(c), Nonattainment Plan Provisions

1. Implement all reasonably available control measures as expeditiously as practicable

The fifty-five control measures in Chapter Eight of the Revised Serious Area Carbon Monoxide Plan (page 8-5) have been implemented. Many of these measures reduce ozone as well as carbon monoxide and go well beyond reasonably available control measures. The effective implementation of the measures in the adopted plan was an important element in achieving attainment before the required date of December 31, 2000 for carbon monoxide and November 15, 1999 for ozone. Effective and expeditious implementation of the control measures resulted in meeting the standard before the attainment date and will also assist in the continued maintenance of that standard. The Final Serious Area Ozone SIP also contains reasonably available control technologies which reduce volatile organic compounds (Chapter 2 on page 2-2 and Appendix A).

In addition, the Maricopa County Environmental Services Department reviews the implementation status of the various measures contained in the air quality plans on an annual basis. In order to accurately monitor or track plan implementation, the Maricopa County Environmental Services Department requests that the implementing agencies and jurisdictions complete an annual progress report form. The Environmental Services Department reviews and summarizes this information, preparing an implementation status report, and then presents the report to the MAG Air Quality Technical Advisory Committee. The most recent progress report at the time of the Revised 1999 Serious Area Carbon Monoxide Plan was the MAG Air Quality Plan 1996 Annual Progress Report (July 1998) that was provided in Appendix B, Exhibit 2 (see also Chapter 8 Tracking Plan Implementation, page 8-146).

2. Plans shall require reasonable further progress

In Part D of the Clean Air Act, Section 171 indicates that the term "Reasonable Further Progress" means such "annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonable be required by the Administrator

for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date.”

On May 30, 2001, the Environmental Protection Agency published a final Determination of Attainment of the One-Hour Ozone Standard for the Phoenix Metropolitan Area, effective June 29, 2001. EPA indicated that because the area has monitored attainment of the standard based on existing controls, additional measures or demonstrations to show attainment would not be necessary. Also, EPA indicated that further emission reductions to meet the Reasonable Further Progress/Rate of Progress provisions of sections 172(c)(2) or 182(c)(2)(B) for Serious Areas have already been fulfilled (see 66 FR 29233, May 30, 2001). In the May 10, 1995 EPA memorandum regarding “Reasonable Further Progress, Attainment Demonstration and Relaxed Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standards,” EPA indicates that the requirements relating to the attainment demonstration and reasonable further progress demonstration are not required as long as the area continues to meet the standard.

However, in order to track the progress of the maintenance plan, periodic emission inventories will be prepared every three years in accordance with Section 182(a)(3) of the Clean Air Act. Maricopa County will coordinate and compile the inventory with input and assistance from the Arizona Department of Environmental Quality, Arizona Department of Transportation, and Maricopa Association of Governments, as described in the 1992 Air Quality Memorandum of Agreement. Changes in the inventory will be reviewed and evaluated through the regional air quality planning process to determine if additional measures should be considered.

3. Plans shall include a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in the area and periodic revisions

The Clean Air Act requires a comprehensive, accurate, and current inventory of actual emissions from all sources. On April 1, 1993, the 1990 base year emission inventory for the Maricopa County ozone nonattainment area was submitted to EPA. Full approval of the inventory became effective on June 26, 1998 (see 63 FR 28898, May 27, 1998). The 1996 base year (July through September 1996) ozone inventory was submitted as part of the Final Serious Area Ozone SIP, Appendix E.

The 1999 Periodic Ozone Emissions Inventory for the Maricopa County Nonattainment Area is included in this One-Hour Ozone Redesignation Request and Maintenance Plan in Appendix A, Exhibit 1. The document includes a complete description of the sources and methodology used to calculate ozone emissions. The 1999 inventory was submitted to EPA in August 2002.

The sources of emissions are grouped into five major categories: area, nonroad mobile, onroad mobile, biogenic, and point. Collectively these five sources contributed a total of 266 metric tons of NO<sub>x</sub> and 307 metric tons of volatile organic compounds per day in 1999

(see Table III-7 on page III-34 in the Technical Support Document for the One-Hour Ozone Redesignation Request and Maintenance Plan).

In addition, the One-Hour Ozone Redesignation Request and Maintenance Plan contains a description of the base year 1998 and 1999, the interim year 2006, and the maintenance year 2015 ozone precursor emission inventories for use in the Urban Airshed Model simulations (see Chapter Three of the One-Hour Ozone Maintenance Plan and Section III of the Technical Support Document for the One-Hour Ozone Maintenance Plan).

The Maricopa County Environmental Services Department has commenced work on the 2002 periodic emissions inventory. It is anticipated that the inventory will be completed by the second quarter of 2004.

4. The plan provisions shall identify and quantify the emissions of any pollutant allowed from the construction and operation of major new or modified stationary sources in the area

Chapter Three of the One-Hour Ozone Redesignation Request and Maintenance Plan describes stationary source emissions, including major new or modified sources. Section III in the Technical Support Document for the One-Hour Ozone Redesignation Request and Maintenance Plan documents the impacts from major stationary sources. The 1992 Memorandum of Agreement for Air Quality Planning found in Appendix A, Exhibit 2, of the Revised MAG 1999 Serious Area Carbon Monoxide Plan provides the distribution of responsibilities for local air quality planning. The Maricopa County Environmental Services Department regulates stationary sources in Maricopa County through the Maricopa County Air Pollution Control Regulations, including Regulation II - Permit and Fees, and Rule 240 - Permit Requirements for New Major Sources and Major Modifications to Existing Major Sources.

Section 172(c)(4) requires an area, in developing its plan for attainment, to identify expected emissions increases that will result from new or modified major sources in a "zone to which economic development should be targeted" according to Section 173(a)(1)(B). These provisions effectively allow the State to provide a "growth allowance" for sources in such an area in lieu of the offset requirements under Section 173(a)(1)(A). Since this is an optional alternative to requiring the acquisition of offsets under Section 173(a)(1)(A), it is not a prerequisite to redesignation. Moreover, once the area is redesignated attainment, these provisions will not apply since the Prevention of Significant Deterioration (PSD) requirements of Part C will become effective.

5. The plan provisions shall require permits for the construction and operation of new or modified major stationary sources anywhere in the nonattainment area

Generally, the requirements of the Part D New Source Review (NSR) permitting nonattainment program will be replaced by the Prevention of Significant Deterioration (PSD) program once an area is redesignated to attainment. However, to ensure that the PSD program can become fully effective immediately upon redesignation, EPA will require

an area to make any needed NSR corrections to their Part C NSR programs prior to redesignation.

Maricopa County received SIP approval of its major and minor source NSR program in 1988 (see 53 FR 30220, 53 FR30224, and 53 FR 30238, August 10, 1988). Effective November 22, 1993, EPA delegated Prevention of Significant Deterioration (PSD) authority to Maricopa County via a PSD Delegation Agreement. On August 15, 1994, ADEQ submitted a SIP revision containing portions of the State permitting program that are applicable to major sources, major source modifications, and minor sources. Part of the SIP revision, under a separate cover, included applicable Maricopa County rules, pertinent to the NSR/PSD program. The amendments to Maricopa County Rules 100, 200, 210, 220, 240, and Appendix B were submitted as a revision to the NSR/PSD program. The submittal also requested approval of synthetic minor provisions under Section 112 (l) of the CAA. On September 1, 1994, EPA deemed both the ADEQ and Maricopa County SIP revision complete and each is currently awaiting full approval. To assure adequate SIP revisions required by Section 110(a)(2)(E) of the CAA, the Director of ADEQ is authorized under ARS §§ 49-402B to assert jurisdiction over major NSR/PSD and minor NSR sources, excluding those located on Indian Reservations. ADEQ received SIP approval of its NSR/PSD program effective May 3, 1983 and delegation of PSD authority for PM-10 effective March 12, 1999.

The EPA guidance memorandum, Part D New Source Review (Part D NSR) Requirements for Areas Requesting Redesignation to Attainment, October 14, 1994, states that “nonattainment areas may be redesignated to attainment notwithstanding the lack of a fully-approved Part D NSR program, provided the program is not relied upon for maintenance.” In addition, the EPA guidance indicates that Part D NSR rules do not need to be placed in the contingency portion of the maintenance plan. It is important to note that the One-Hour Ozone Maintenance Plan for the Maricopa County nonattainment area does not rely on credit for the NSR program to demonstrate maintenance.

6. Include enforceable emission limitations and other control measures, means, or techniques, as well as schedules and timetable for compliance to provide for attainment of such standard

Since attainment has been achieved, no additional measures are needed to provide for attainment. The need for additional measures to ensure that maintenance continues is addressed under the requirements for maintenance plans. Areas should consider the need for offsets under the Part C program to ensure that new sources do not "cause or contribute" to an increase in pollutant levels that would take the area out of compliance.

7. Plans shall meet the applicable requirements of Section 110(a)(2)

In the requests for SIP redesignation, States must show that their plans satisfy the requirements under Section 110. These requirements specify that the plans must contain enforceable emission limits, monitoring requirements, procedures to prevent interstate pollution problems, adequate resources to carry out the control programs, and other

provisions related to the development and administration of effective air pollution control programs.

The Arizona Revised Statutes Title 49-401 through 470 contain the requirements for the State Air Pollution Control Program administered by the Arizona Department of Environmental Quality. Also, the Arizona Revised Statutes Title 49-471 through 516 contain the requirements for the County Air Pollution Control Program. The Maricopa County Environmental Services Department is the local air pollution control department for Maricopa County. In addition, the State and local government commitments to implement specific air quality measures address the actual implementation and resources necessary for a wide variety of measures. The Commitments documents which accompany the Revised MAG 1999 Serious Area Carbon Monoxide Plan include the State legislation and local government commitments for measure implementation.

The Final Serious Area Ozone SIP for Maricopa County also includes the Reasonably Available Control Technology Rules designed to control VOC emissions. A list of Maricopa County Ozone Nonattainment Area Control Measures is provided in Appendix A of the document.

The Arizona SIP already includes the provisions required by Section 110(a)(2) and Part D of the Clean Air Act. In approving the Revised MAG 1999 Serious Area Carbon Monoxide Plan, Carbon Monoxide Redesignation Request and Maintenance Plan, and Final Serious Area Ozone SIP EPA will be determining that the State has met the requirements of Section 110(a)(2) and Part D of the Clean Air Act.

8. States may use equivalent techniques for modeling, emission inventories, planning procedures unless they are less effective than the methods specified by the Administrator

The provisions of Section 172(c)(8) allow the State to use equivalent techniques for modeling, inventorying, or other planning activities unless EPA determines that the techniques are less effective. This allowance will continue to apply with respect to the requirements of the maintenance plan.

9. Provide for specific contingency measures to be undertaken if the area fails to make reasonable further progress, or to attain the NAAQS by the applicable attainment date

The Section 172(c)(9) requirements for contingency measures are directed at ensuring reasonable further progress and attainment by the applicable date. These requirements no longer apply when an area has attained the standard and is eligible for redesignation. In the Determination of Attainment of the One-Hour Ozone Standard for the Phoenix Metropolitan Area, effective June 29, 2001, EPA also determined that the Clean Air Act requirements for contingency measures are not applicable to the area for so long as the Phoenix metropolitan area continues to attain the one-hour ozone standard (see 66 FR 29230, May 30, 2001).

Section 175 (A) for maintenance plans provides specific requirements for contingency measures that effectively supersede the requirements of Section 172(c)(a) for these areas. The One-Hour Ozone Redesignation Request and Maintenance Plan includes contingency provisions and measures. The three contingency measures are: Area A Expansion, Gross Polluter Option for I/M Program Waivers, and Increased Waiver Repair Limit Options. Emissions reduction credit for these contingency measures was not taken in the maintenance demonstration. These contingency measures and other contingency provisions are described in Chapter Three of the One-Hour Ozone Redesignation Request and Maintenance Plan and Section VI of the Technical Support Document for the One-Hour Ozone Maintenance Plan.

Subpart 2, Section 182(b), Plan Submissions and Requirements, Serious Area Requirements

1. Meet requirements for Moderate nonattainment areas
  1. Emissions Inventory

The State is required to submit a comprehensive, accurate, and current emission inventory of all sources as described in Section 182(a)(1). This requirement was also addressed earlier in paragraph 3 of the requirements for Subpart 1, Section 172(c)(3), Nonattainment Plan Provisions. On May 27, 1998, the EPA approved the 1990 base year emission inventory submitted in the MAG 1993 Ozone Plan for the Maricopa County Area.

- b. Periodic Emissions Inventory, no later than every three years until attainment of the standard

This requirement was addressed earlier in this section under requirements for Section 172, Nonattainment Plan Provisions. Appendix E of the Final Serious Area Ozone State Implementation Plan for Maricopa County contains the 1996 periodic emission inventory completed by the Maricopa County Environmental Services Department for three ozone precursors: volatile organic compounds, carbon monoxide, and nitrogen oxides. In addition, the Maricopa County Environmental Services Department has completed a periodic emissions inventory for 1999, the latest version of which was submitted to EPA in August, 2002. The 1999 Periodic Ozone Emissions Inventory is included in Appendix A, Exhibit 1 of the One-Hour Ozone Redesignation Request and Maintenance Plan.

- c. Submission of the 15 Percent Rate of Progress Plan for volatile organic compounds

The State is required to submit a revision to the applicable implementation plan to provide for volatile organic compound emission reductions of 15 percent from baseline emissions and shall provide for such specific annual reductions in emissions of VOCs and NO<sub>x</sub> as necessary to attain the standard. In order to meet the Moderate area requirements, the MAG 1993 Ozone Plan for the Maricopa County Area was submitted to EPA by November 15, 1993. An Addendum to this Plan which contained additional control measures was

submitted to EPA in March 1994. In accordance with Section 182(f), a NO<sub>x</sub> exemption petition was approved by EPA for the Maricopa County Nonattainment Area on April 19, 1995. The MAG 1993 Ozone Plan and Addendum, as well as an attainment demonstration was found complete by EPA on May 12, 1995.

Effective June 26, 1998, the Environmental Protection Agency promulgated a Federal Implementation Plan which demonstrated that the 15 Percent Rate of Progress (ROP) goal would be met by April 1, 1999 (see 63 FR 28898, May 27, 1998). On July 6, 1999, EPA finalized a rule to make minor changes to the FIP which did not alter the conclusion that the 15 Percent ROP requirement had been met (see 64 FR 36243).

d. Reasonably Available Control Technology

In accordance with Section 182(a)(2)(A), the state is required to submit a revision that includes provisions to correct requirements in (or add requirements to) the plan concerning reasonably available control technology as required under Section 172(b) in effect before the 1990 amendments to the Clean Air Act. The source categories subject to the Reasonably Available Control Technology corrections may be found in Chapter 2 of the Final Serious Area Ozone State Implementation Plan for Maricopa County. The source categories are summarized below.

- Architectural Coatings. EPA approved Maricopa County Rule 335 as a SIP revision effective on March 6, 1992.
- Surface Coating Operations. EPA approved Maricopa County Rule 336 as a SIP revision effective on November 19, 1999.
- Solvent Cleaning. EPA finalized a limited approval and limited disapproval of revisions to Maricopa County Rule 331 as a SIP revision effective on May 16, 2003.
- Petroleum Solvent Dry Cleaning. EPA approved revisions to Maricopa County Rule 333 as a SIP revision effective on March 11, 1998.
- Cutback and Emulsified Asphalt. EPA approved Maricopa County Rule 340 as a SIP revision effective on March 4, 1996.
- Storage of Organic Liquids at Bulk Plants. EPA approved Maricopa County Rule 350 as a SIP revision effective on October 5, 1995.
- Loading Organic Liquids. EPA approved Maricopa County Rule 351 as a SIP revision effective October 5, 1995.
- Transfer of Gasoline into Stationary Dispensing Tanks. EPA approved Maricopa County Rule 353 as a SIP revision effective March 4, 1996.
- Gasoline Delivery Vessel Testing and Use. EPA approved Maricopa County Rule 352 as a SIP revision effective October 5, 1995.
- Graphic Arts. EPA approved revisions to Maricopa County Rule 337 as a SIP revision effective March 11, 1998.

Under Section 182(b)(2)(A), the state is to implement reasonably available control technology for VOC sources in the area covered by a control techniques guideline document issued by EPA between the Clean Air Act Amendment enactment date and the date of attainment. The source categories subject to this requirement may be found in

Chapter 2 of the Final Serious Area Ozone State Implementation Plan for Maricopa County. A negative declaration was submitted in March 2000 for two source categories which are not present in the Maricopa County nonattainment area, Ship Building and Repair and Distillation Operations Process. A copy of this declaration may be found in Appendix B of the Serious Area Ozone Plan. The source categories meeting this requirement are summarized below.

- Coating Wood Furniture and Fixtures. EPA approved Maricopa County Rule 342 as a SIP revision effective March 11, 1998.
- Aerospace Manufacturing and Rework Operations. EPA approved Maricopa County Rule 348 as a SIP revision effective November 19, 1999.

Under Section 182(b)(2)(B), the state is to implement reasonably available control technology for VOC sources covered by any control techniques guideline before the Clean Air Act Amendment enactment date. There are no other source categories subject to this provision, other than the source categories subject to the correction requirements in Section 182(A) of the Clean Air Act. A negative declaration was submitted by the state in April 1993 for these source categories.

In addition, Section 182(b)(2)(C) requires the state to implement reasonably available control technology for all other major stationary sources of VOCs that are located in the area. Any stationary source or group of sources that emits or has the potential to emit at least 50 tons of volatile organic compounds meets the Clean Air Act definition of a “major source” and “major stationary source”. The source categories meeting this requirement are summarized below.

- Rubber Sports Ball Manufacturing. EPA approved revisions to Maricopa County Rule 334 as a SIP revision effective on March 11, 1998.
- Metal Casting. EPA approved Maricopa County Rule 341 as a SIP revision effective March 13, 1996.
- Commercial Bread Bakeries. EPA approved Maricopa County Rule 343 effective May 16, 1997.
- Semiconductor Manufacturing. EPA approved Maricopa County Rule 338 effective March 11, 1998.
- Vegetable Oil Extraction Processes. EPA approved Maricopa County Rule 339 effective March 11, 1998.
- Coating Wood Millwork. EPA approved Maricopa County Rule 346 effective March 11, 1998.
- Ferrous Sand Casting. EPA approved Maricopa County Rule 347 effective August 11, 2000.
- Vitamin Manufacturing. EPA approved Maricopa County Rule 349 effective August 7, 2001.

To fulfill the CAA sections § 182(a)(2)(A) and (b)(2), Maricopa County proposes to complete three outstanding processes to implement RACT. The processes include completing rule revisions to Rule 331 to address the May 16, 2003 limited approval and limited disapproval, development of new Rule 358, and issuance of a Title V permit to

impose source-specific RACT for another major source. Maricopa County's proposed commitment to complete these actions as expeditiously as practicable is in Appendix B, Exhibit 1 of this One-Hour Ozone Redesignation Request and Maintenance Plan. The proposed implementation schedule from that commitment follows:

Implementation Schedule:

Revise Rule 331 Solvent Cleaning:

November-December 2003	Conduct workshops and stakeholder meetings.
February-March 2004	Publish Notice of Proposed Rulemaking and conduct Oral Proceeding.
April-May 2004	Board consideration and action on Draft Notice of Final Rulemaking.
May-June 2004	Rule becomes effective 30 days after Board action as the revisions are administrative.
July 2004	Submit rule to EPA.

New Rule 358 Polystyrene Foam Operations

November-December 2003	Publish Notice of Proposed Rulemaking and conduct Oral Proceeding.
February-March 2004*	Board consideration and action on Draft Notice of Final Rulemaking.
March-April 2004	Rule becomes effective 30 days after Board action as the revisions are administrative. Proposed implementation schedule requires installation of controls within 18 months of rule adoption.
April-June 2004	Submit rule to EPA.

\*Add two—three additional months if public comments require a substantive revision to the proposed rule

Source Specific RACT by Permit

October-December 2003	Notification of availability of draft Title V permit published. Comment period closes December 5, 2003.
-----------------------	---

1. No public comment or extension request:

December 2003	Submit to EPA for 45-day review and comment.
February 2003	Address comments and finalize permit.
February-March 2004	Publish notice of SIP revision and hold public hearing.
April 2004	Submit source-specific RACT provisions from permit to EPA.
February-May 2004	Complete design and award contracts for emission control system (ECS)
January 2005	Complete installation of ECS
March 2005	Complete performance testing on new ECS

2. Extension request without public comment adds 30 days to schedule in 1.
3. Public comment without a request for public hearing adds 15 additional days to 1 and 2.
4. Public Hearing request will add 90 additional days to schedule for 1 and 2. EPA may also find it necessary to request an extension of their comment period.
5. EPA objections will add another 90 days for Department response plus another 45 day EPA review period to schedule in 1.

In the Final Serious Area Ozone Plan another major source, a fiberglass boat manufacturer, was included in the County's commitment to impose source-specific RACT standards in a Title V permit. Sea Ray Boats, Inc. closed in December 2001 prior to issuance of its Title V permit. There are no other major sources in this category present in Maricopa County that would trigger the requirement to impose RACT. As required by the General Preamble, a negative declaration for this source category will be submitted to EPA with this plan (see Appendix B, Exhibit 2 of this One-Hour Ozone Redesignation Request and Maintenance Plan).

e. Gasoline Vapor Recovery

Under Section 182(b)(3), the State was required to submit a SIP revision to require all owners or operators of gasoline dispensing systems to install and operate a system for gasoline vapor recovery of emissions from the fueling of motor vehicles applying to facilities which sell more than 10,000 gallons of gasoline per month (50,000 gallons per month in the case of an independent small business marketer of gasoline as defined in Section 324). On May 27, 1994, ADEQ submitted to EPA Stage II vapor recovery rules that were adopted by the Arizona Department of Weights and Measures on August 27, 1993. Full approval for the program was granted by EPA effective January 3, 1995 (see

59 FR 54521, November 1, 1994). Subsequent legislative action (HB 2001, 1997) required the Arizona Department of Weights and Measures to adopt rules to enhance the program. Since then, a quality assurance and quality control program has been implemented by the Department.

f. Motor Vehicle Emission Control Inspection and Maintenance Program

The State Vehicle Inspection Maintenance Program established in 1976 is designed to promote the clean operation of motor vehicles by controlling vehicle exhaust emissions. The program is operated by the Arizona Department of Environmental Quality and contains the provisions listed in Section 182(a)(2)(B) of the Clean Air Act for a Vehicle Inspection and Maintenance (I/M) Program.

The Vehicle Emissions Inspection Maintenance Program was significantly enhanced and strengthened by the Arizona Legislature in 1993 (H.B. 2001). The Legislature established a biennial, transient loaded (I/M 240) emissions test for gasoline powered vehicles model year 1981 or newer with a gross vehicle weight of up to 8,500 pounds, beginning January 1, 1995.

H.B. 2001 also increased the repair threshold limits for gasoline powered vehicles in order to be eligible for a waiver through the Vehicle Emissions Inspection Maintenance Program. The repair limits were increased in the following manner: 1967-1974 from \$50 to \$100; 1975-1980 from \$200 to \$300; and 1981 and newer from \$300 to \$450. The bill also increased the repair threshold limits from \$300 to \$500 for diesel powered vehicles with tandem axles or a gross vehicle weight in excess of 26,000 pounds.

The Arizona Legislature passed S.B. 1002 in 1996 which limits the issuance of a waiver for failure to comply with the emission testing requirements to one-time only beginning January 1, 1997 (A.R.S. 49-542 D.). This measure is documented in the Revised 1999 MAG Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area as "One-Time Waiver from Vehicle Emissions Test," on page 8-10; and in the Technical Support Document, beginning on page V-14.

The Arizona Legislature passed H.B. 2237 in 1997 which contains an appropriation of \$120,000 from the State General Fund to the Arizona Department of Environmental Quality to develop and implement an alternative test protocol to reduce the false failure rates associated with the more stringent pass-fail standards for the Vehicle Emissions Testing Program (Section 19 of H.B. 2237). This measure is documented in the Revised Serious Area Carbon Monoxide Plan as "Phased-In Emission Test Cutpoints," beginning on page 8-5; and in the Technical Support Document, beginning on page V-8.

2. Meet requirements for Serious nonattainment areas

g. Enhanced Monitoring

Following the promulgation of EPA rules relating to enhanced monitoring for ozone, oxides of nitrogen, and volatile organic compounds, Section 182(c)(1) requires the State to

improve monitoring for ambient concentrations of ozone, oxides of nitrogen, and volatile organic compounds and to improve monitoring of emissions of oxides of nitrogen and volatile organic compounds. To meet the requirements in Section 182, EPA revised 40 CFR Part 58 which calls for the establishment of a Photochemical Assessment Monitoring Stations (PAMS) network. The Final Serious Area Ozone State Implementation Plan for Maricopa County indicates that the ADEQ is phasing in the PAMS network consistent with 40 CFR Part 58 requirements and other relevant EPA guidance. The PAMS network measures ozone, NO<sub>x</sub>, and various VOCs, and surface and upper air meteorology.

h. Attainment Demonstration and Reasonable Further Progress Demonstration

Under Section 182(c)(2), the State is to submit a SIP revision demonstrating that the Plan will provide for attainment of the one-hour ozone NAAQS by the applicable attainment date. The attainment demonstration must be based on photochemical grid modeling or any other analytical method as determined by EPA. The serious area attainment date for the Maricopa County area was November 15, 1999. In addition, a SIP revision is required from the State demonstrating reasonable further progress that would result in emission reductions of ozone precursors of at least three percent of baseline emissions between 1996 and 1999 (9 Percent Rate of Progress Plan).

In the Determination of Attainment of the 1-Hour Ozone Standard for the Phoenix Metropolitan Area, effective June 29, 2001, EPA indicated that because the area has monitored attainment of the standard based on existing controls, contingency measures and demonstrations to show attainment would not be necessary (see 66 FR 29230 May 30, 2001). EPA also indicated that further emission reductions to meet the RFP/ROP provisions of sections 172(c)(2) or 182(c)(2)(B) for serious areas have already been fulfilled. In the May 10, 1995 EPA memorandum regarding "Reasonable Further Progress, Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standards", EPA believes that the requirements relating to the attainment demonstration and reasonable further progress demonstration are not required as long as the area continues to meet the standard.

i. Enhanced Vehicle Inspection and Maintenance Program

An enhanced vehicle emissions inspection and maintenance program is operated in Area A of Maricopa and Pinal Counties by the Arizona Department of Environmental Quality. The program contains the provisions in Section 182(c)(3) of the Clean Air Act for an Enhanced Vehicle Inspection and Maintenance Program. The State's complete inspection and maintenance program is documented in the Final Arizona State Implementation Plan Revision, Basic and Enhanced Vehicle Emissions Inspection/Maintenance Programs, Volumes 1 and 2, Air Quality Division, Arizona Department of Environmental Quality, June 2001. EPA proposed approval of the Arizona I/M program in August 2002 and signed the final approval notice on October 31, 2002. The final approval notice was published in the Federal Register on January 22, 2003.

#### j. Clean-Fuel Vehicle Programs

Under Section 182(c)(4), the state, except to the extent that substitute provisions have been approved by EPA, will submit a SIP revision for each area described under part C of Title II to include such measures necessary to ensure the effectiveness of the applicable provisions of the clean-fuel vehicle program, including all measures necessary to make the use of clean alternative fuels in clean fuel vehicles (as defined in part C of Title II) economic from the standpoint of vehicle owners. ADEQ submitted a SIP revision to EPA on December 7, 1998 requesting that a portion of the emissions reductions attributable to the Cleaner Burning Gasoline program be approved as a substitute provision for the Clean-Fuel Vehicle Program requirements. The SIP revision is awaiting approval from EPA.

#### j. Transportation Control

Section 182(c)(5) requires the state to submit a demonstration as to whether current aggregate vehicle mileage, aggregate vehicle emissions, congestion levels, and other relevant parameters are consistent with those used for the area's attainment demonstration. Where such parameters exceed the levels projected in the attainment demonstration, the state will submit a SIP revision to include transportation control measures from Section 108(f) to reduce emissions levels consistent with the attainment demonstration. EPA believes that the requirements relating to the attainment demonstration and reasonable further progress demonstration, including, transportation control requirements, are not required as long as the area continues to meet the standard. This EPA policy is provided for in the May 10, 1995 EPA memorandum regarding "Reasonable Further Progress, Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standards".

#### i. New Source Review Provisions

The new source review (NSR) provisions required under the Clean Air Act Section 182(c)(6), (7), and (8) may be found in Chapter 2 of the Final Serious Area Ozone State Implementation Plan for Maricopa County. These provisions describe the applicability of permit requirements under the Clean Air Act for increased emissions of volatile organic compounds resulting from any physical change in, or change in the method of operation of a stationary source. Arizona Revised Statutes Section 49-402(A) and (B) describes the provisions for new source review and prevention of significant deterioration (PSD) required under the Clean Air Act for the state. A state implementation plan revision for portions of the major source permitting and modifications, and minor sources was submitted to EPA on August 15, 1994. Maricopa County also submitted Rules 100, 200, 210, 220, 240, and Appendix B as a revision to the NSR/PSD program. These revisions were found to be complete by EPA on September 1, 1994. EPA approval may be forthcoming.

#### Conformity Requirements

In addition to the above requirements, the State Implementation Plan must demonstrate that its provisions are consistent with Section 176(c)(4) conformity requirements. These provisions ensure that federally funded or approved projects and actions and other regionally significant projects conform to the State Implementation Plan prior to the projects or actions being implemented.

State rules for transportation conformity were adopted on April 12, 1995, by the Arizona Department of Environmental Quality, in response to requirements in Section 176(c)(4)(C) of the Clean Air Act as amended in 1990. These rules became effective upon their certification by the Arizona Attorney General on June 15, 1995 and, as required by the federal conformity rule, were submitted to EPA as a revision to the State transportation conformity SIP.

To date, a State transportation conformity SIP has not received approval by EPA. Section 51.390(b) of the federal conformity rule states: "Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable implementation plan, conformity determinations would be governed by the approved (or approved portion of the) State criteria and procedures." The federal transportation conformity rule therefore still governs, as a transportation conformity SIP has not yet been approved for this area.

The State rule specifies that Metropolitan Planning Organizations (i.e., MAG, for this region) must develop specific conformity guidance and consultation procedures and processes. MAG has developed and adopted two conformity guidance documents to meet State requirements. MAG developed the "Transportation Conformity Guidance and Procedures" document, which was adopted initially on September 27, 1995 by the MAG Regional Council. The document was revised by the MAG Regional Council on March 27, 1996. This guidance document addresses both the determination of "regional significance" status for individual transportation projects, and the process by which regionally significant projects may be approved.

MAG also developed the "Conformity Consultation Processes" document, which was adopted on February 28, 1996 by the MAG Regional Council. This guidance document details the public and interagency consultation processes to be used in the development of regional transportation plans, programs, and projects within the Maricopa County nonattainment area. Adherence to the above rules, guidance, procedures, and processes ensure that the SIP provisions are consistent with conformity requirements.

## CHAPTER THREE

### MAINTENANCE PLAN

Section 107(d)(3)(E) of the Clean Air Act stipulates that for a nonattainment area to be redesignated to attainment, Environmental Protection Agency (EPA) must fully approve a maintenance plan which meets the requirements of the Clean Air Act Section 175A. The maintenance plan is a State Implementation Plan (SIP) revision and must provide for maintenance of the relevant National Ambient Air Quality Standards (NAAQS) in the area for at least ten years after redesignation by EPA.

In determining the amount of lead time to allow, EPA indicated that 18 months, as granted in section 107(d)(3)(D) of the Clean Air Act, should be assumed for EPA to approve a redesignation request. Due to uncertainties regarding the time that the area will be redesignated to attainment, the year 2015 was modeled to assure that the one-hour ozone NAAQS is maintained at least ten years past an official notice of redesignation to attainment by EPA.

The EPA has established the core elements listed below as necessary for approval of maintenance plans.

1. Description of the control measures for the maintenance period
2. Emission inventories for base and future years
3. Maintenance demonstration
4. Mobile source emissions budget
5. Approved monitoring network
6. Verification of continued attainment
7. Contingency plan
8. Subsequent maintenance plan revisions

#### MAINTENANCE PLAN CONTROL MEASURES

Generally, the overall approach taken in preparing the One-Hour Ozone Maintenance Plan is to demonstrate maintenance of the one-hour ozone standard in 2015 with the committed measures in the Revised MAG 1999 Serious Area Carbon Monoxide Plan and Carbon Monoxide Redesignation Request and Maintenance Plan, since most of those measures also reduce ozone. Therefore, the Ozone Maintenance Plan relies heavily upon the Revised MAG Serious Area Carbon Monoxide Plan and its supporting documents, including the commitments to implement control measures. The Ozone Maintenance Plan also relies upon the Final Serious Area Ozone State Implementation Plan for Maricopa County and the modified Arizona Cleaner Burning Gasoline Program.

Descriptions of the committed control measures in the maintenance plan are organized in three groups below. The first group of measures includes those for which numeric credit is assumed in the maintenance demonstration. The combined emission reduction impact

of this class of measures, described as maintenance measures, is reflected in the 2015 modeling inventory described in Section VI-3 of the Technical Support Document (TSD). The control measures that are included in this analysis as maintenance measures include Summer Fuel Reformulation: California Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May 1 through September 30, Phased-In Emission Test Cutpoints, One-time Waiver from Vehicle Emissions Test, Coordinate Traffic Signal Systems, Develop Intelligent Transportation Systems, Tougher Enforcement of Vehicle Registration and Emission Test Compliance, and Maricopa County Rule 348: Aerospace Manufacturing and Rework Operations. The maintenance measures are listed in Table 3-1.

The second group of measures includes the committed measures that are part of the contingency plan described in Section VI-5 of TSD. For these measures, no credit was taken in the maintenance demonstration. The impact of these measures is not reflected in the 2015 modeling inventory in Section VI-3 of TSD. The control measures that are included in this analysis as contingency measures include Expansion of Area A Boundaries, Gross Polluter Option for I/M Program Waivers, and Increased Waiver Repair Limit Options. Descriptions of the contingency measures are summarized in Section VI of TSD, with more detailed descriptions provided in Appendix VI of TSD.

The third group of measures includes additional measures for which commitments were received, but numeric emission reduction credit was not taken. The impacts of these measures are not readily quantifiable. However, these measures represent additional legally-enforceable commitments to reduce emissions and improve air quality in the region.

A summary of the committed maintenance and contingency measures is provided in Table 3-1. The general approaches used to model the emission reductions from the individual measures are similar to those used in the Carbon Monoxide Maintenance Plan, although exceptions are necessary due to seasonal differences. Figures 3-1 and 3-2 illustrates the emission reduction impact of the individual maintenance measures in 2015 for NO<sub>x</sub> and VOC, respectively. Table 3-2 quantifies the emission reductions from the committed maintenance measures in metric tons per day. The base total emissions in Table 3-2 were estimated by assuming that none of the maintenance measures, including the Federal Offroad Vehicle and Engine Standards, are implemented in 2015. The comparison of the base emissions with the maintenance measure package in 2015 is exhibited in Table IV-3 of the Technical Support Document.

#### Measures Used for Numeric Credit

The seven maintenance measures assumed in modeling maintenance of the one-hour ozone standard through 2015 are described in Chapter Two. Figures 3-1 and 3-2 identifies the emission reduction credit for each of the individual maintenance measures. These measures are described in detail in Section VI-2-1 of the Technical Support Document.

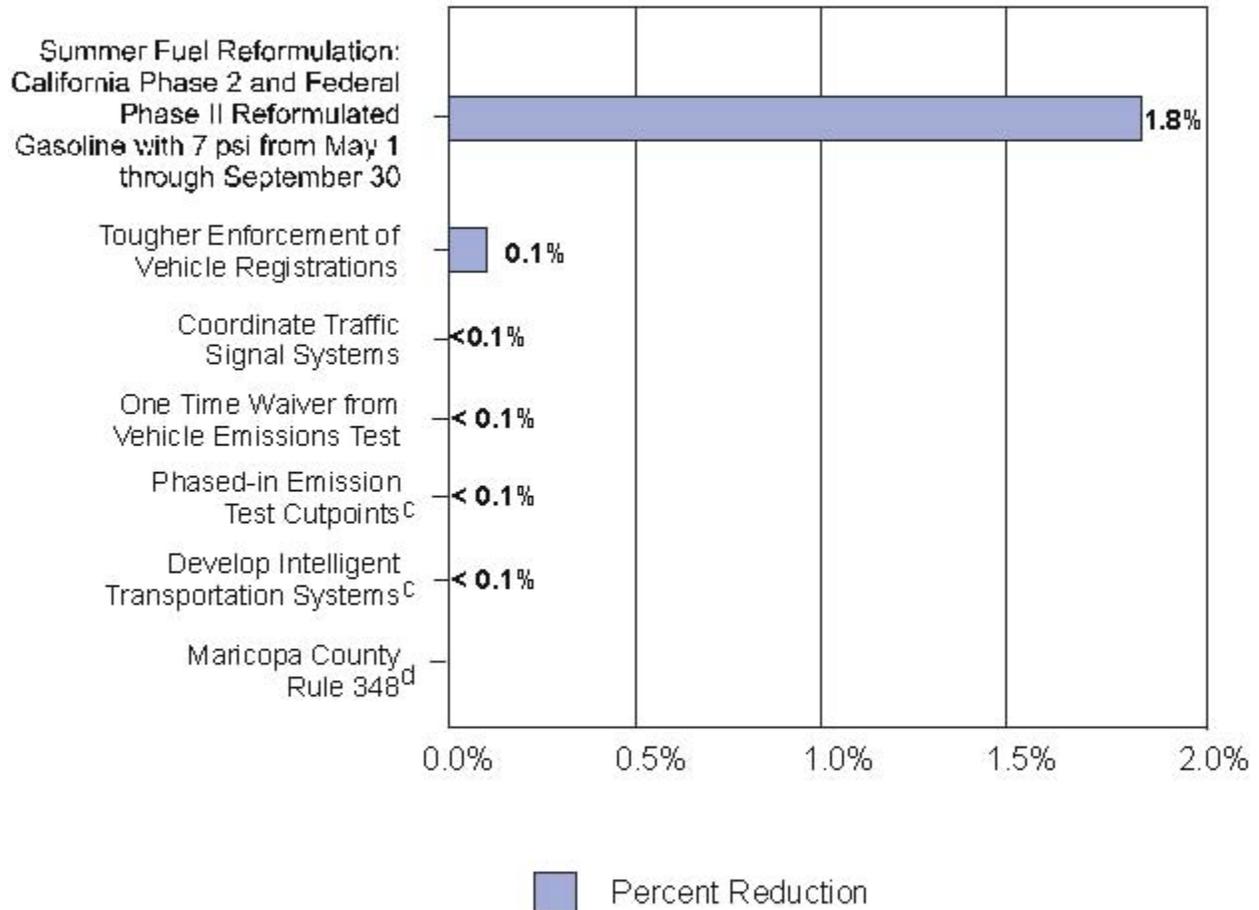
**TABLE 3-1**

**COMMITTED MAINTENANCE AND CONTINGENCY MEASURES  
IN THE ONE-HOUR OZONE MAINTENANCE PLAN**

<b>Maintenance Measures Used for Numeric Credit</b>	<b>Contingency Measures</b>
1. Summer Fuel Reformulation: California Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May 1 through September 30	1. Expansion of Area A Boundaries
2. Phased-In Emission Test Cutpoints	2. Gross Emitter Waiver Provision
3. One-time Waiver from Vehicle Emissions Test	3. Increased Waiver Repair Limit
4. Coordinate Traffic Signal Systems	
5. Develop Intelligent Transportation Systems	
6. Tougher Enforcement of Vehicle Registration and emission Test Compliance	
7. Maricopa County Rule 348: Aerospace Manufacturing and Rework Operations	

FIGURE 3-1

2015 NO<sub>x</sub> EMISSION REDUCTIONS FROM  
INDIVIDUAL MAINTENANCE MEASURES  
IN THE ONE-HOUR OZONE NONATTAINMENT AREA<sup>a,b</sup>  
(Percent Reduction in Total Emissions)



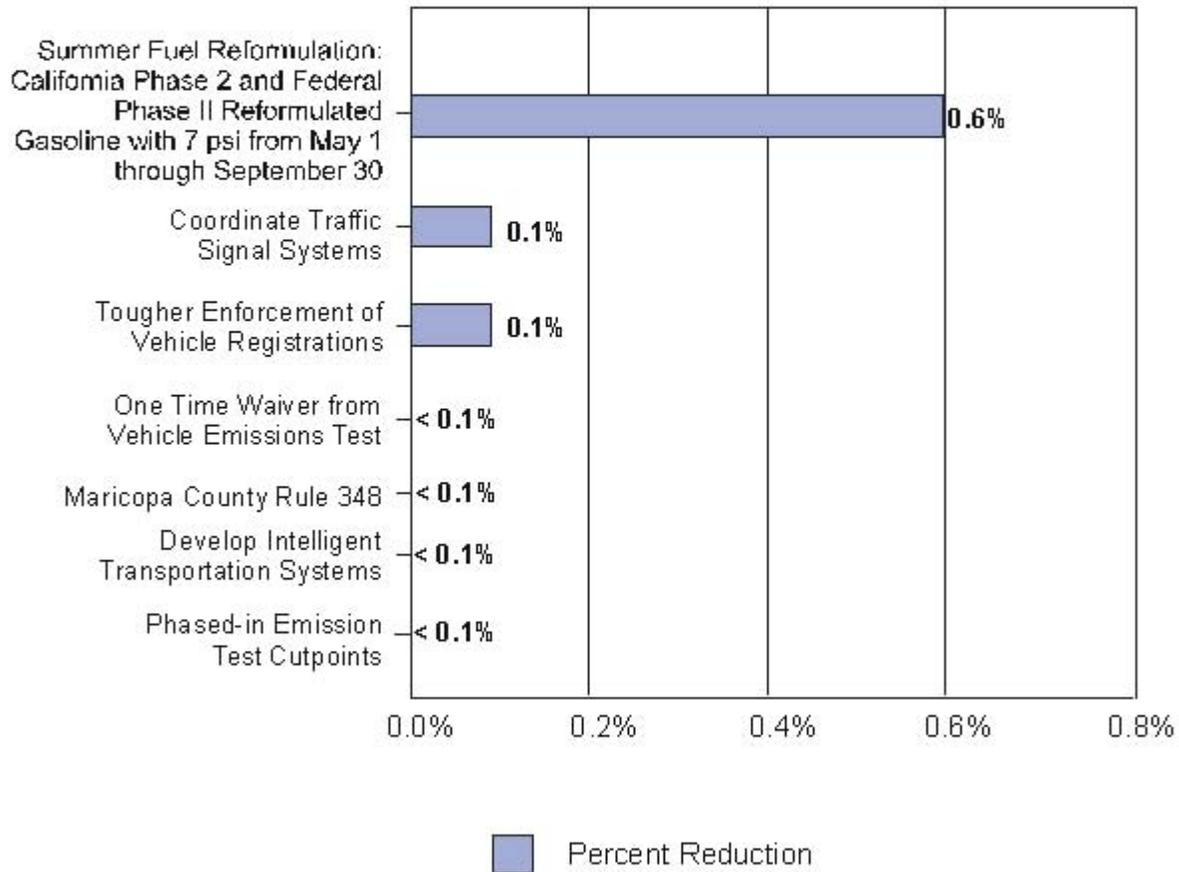
a-Individual impact of measures is not additive.

b-Numeric credit for Federal Offroad Vehicle and Engine Standards (40 CFR Parts 59 and 90) has also been taken.

c-Slight increase in emissions.

d-Does not reduce NO<sub>x</sub> emissions.

**FIGURE 3-2**  
**2015 VOC EMISSION REDUCTIONS FROM**  
**INDIVIDUAL MAINTENANCE MEASURES**  
**IN THE ONE-HOUR OZONE NONATTAINMENT AREA <sup>a,b</sup>**  
**(Percent Reduction in Total Emissions)**



a-Individual impact of measures is not additive.

b-Numeric credit for Federal Offroad Vehicle and Engine Standards (40 CFR Parts 89 and 90) has also been taken.

**TABLE 3-2**

**SUMMARY OF 2015 EMISSION REDUCTIONS IN NONATTAINMENT AREA FROM COMMITTED MAINTENANCE MEASURES USED FOR NUMERIC CREDIT<sup>a</sup>**

	NOx		VOC	
Base Total Emissions (metric tons/day)	232.7 <sup>b</sup>		413.9 <sup>b</sup>	
Maintenance Measure	Emission Reductions (metric tons/day)	Percent Reduction in Emissions	Emission Reductions (metric tons/day)	Percent Reduction in Emissions
Summer Fuel Reformulation: California Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May 1 through September 30	4.1	1.8%	1.9	0.6%
Phased-In Emission Test Cutpoints	< 0.1 (increase)	< 0.1% (increase)	0.1	<0.1%
One-time Waiver from Vehicle Emissions Test	0.1	<0.1%	0.1	<0.1%
Coordinate Traffic Signal Systems	0.1	<0.1%	0.3	0.1%
Develop Intelligent Transportation Systems	< 0.1 (increase)	< 0.1 (increase)	0.1	<0.1%
Tougher Enforcement of Vehicle Registration and Emission Test Compliance	0.2	0.1%	0.2	0.1%
Maricopa County Rule 348: Aerospace Manufacturing and Rework Operations	N/A	N/A	0.01	<0.1%

<sup>a</sup>-Individual impact of measures is not additive.

<sup>b</sup>-The total anthropogenic NOx and VOC emissions are 226.5 and 328.1 metric tons/day, respectively.

## **Measures Included in the Contingency Plan**

Expansion of Area A Boundaries, Gross Polluter Option for I/M Program Waivers, and Increased Waiver Repair Limit Options are contingency measures in both the Revised Serious Area Carbon Monoxide Plan and the Carbon Monoxide Maintenance Plan. These measures are described in Chapter VI of the Ozone Maintenance Plan TSD.

These three contingency measures have already been implemented in the nonattainment area. Early implementation of contingency measures is allowed by EPA and helps to ensure that the standard will be maintained through 2015. The Contingency Provisions later in this Chapter identify procedures that will be followed to consider and implement additional contingency measures, as needed.

The contingency measures are described in Section VI-2-2 of the Technical Support Document.

## **Measures Which Improve Air Quality, But Were Not Used for Numeric Credit**

The third group represents measures that were not quantified for emission reduction credit, but are committed measures in both the attainment and maintenance plans. These non-quantified measures are described in detail in Section VI-2-3 of the Technical Support Document.

## **EMISSION INVENTORIES**

This section summarizes the base year 1998 and 1999, the interim year 2006, and the maintenance year 2015 ozone emission inventories for use in the Urban Airshed Model (UAM) simulations. The emissions inventories include onroad mobile, nonroad mobile, point, area, and biogenic sources.

The 1998 inventory was developed for July 16-17 and the 1999 inventory was developed for August 23-24. Both base year inventories reflected control measures in place at that time. The future year emission inventories include projected emission reductions resulting from committed control measures that were implemented after 1998 and 1999. Sections III-1 and VI-3 of the Technical Support Document describe the technical details of the emission inventories for 1998, 1999, 2006 and 2015.

## **Demographic and Transportation Data**

Emissions for source types other than onroad mobile and biogenics were developed for a base year and then projected to 2006 and 2015 through the application of appropriate growth factors. The growth factors were based on the 2015 population projections approved by the MAG Regional Council in June 1997 and developed from the 1995

Special Census. The 2015 employment factors by SIC were extrapolated from projections prepared by the Arizona Department of Economic Security (DES) in August 1997.

On road mobile source emissions were increased by eight and twelve percent for 2006 and 2015, respectively. These increases were applied regardless of hour of the day or location in the modeling domain, because of an expected increase in population and employment projections for the County. The DES is in the process of developing new population projections for the State and counties based on the 2000 Census. These projections were not available from DES when this plan was completed. However, preliminary data indicate that the new vehicle travel estimates will be about eight and twelve percent higher, respectively, than previous 2006 and 2015 projections for the ozone nonattainment area.

### **Summary of the Emission Inventories**

The 1998 and 1999 base cases, 2006 interim year, and 2015 maintenance year emission inventories for NO<sub>x</sub> and VOC are summarized in Tables 3-3 through 3-6.

In the 1998 and 1999 base cases, the onroad mobile emissions contribute 28 to 30 percent of VOC emissions and 51 to 52 percent of NO<sub>x</sub> emissions and represent the largest emissions source among all categories for both NO<sub>x</sub> and VOC species. With the implementation of the committed maintenance measures and stricter Federal controls on vehicles and fuels, onroad mobile NO<sub>x</sub> emissions decrease by 19.3 percent between 1999 and 2006, and 58.7 percent between 1999 and 2015. Onroad mobile VOC emissions decrease by 32.7 percent between 1999 and 2006, and 54.4 percent between 1999 and 2015.

Due to anticipated growth in regional population, area sources become the largest source category for NO<sub>x</sub> and VOC emissions in 2015. Area source NO<sub>x</sub> emissions increase by 25.8 percent between 1999 and 2006, and 56.7 percent between 1999 and 2015. Area source VOC emissions increase by 22.8 percent between 1999 and 2006, and 49.5 percent between 1999 and 2015.

As a result of expected increases in power plant emissions, point source NO<sub>x</sub> emissions increase significantly from the base years to 2006 and 2015. Point source NO<sub>x</sub> emission increase by 48.5 percent between 1999 and 2006, and 59.4 percent between 1999 and 2015.

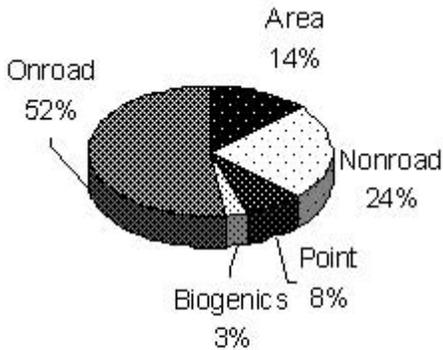
Point source VOC emissions increase by 13.7 percent between 1999 and 2006, and 32.0 percent between 1999 and 2015. With the implementation of the Federal Off-Road Vehicle and Engine Standards, nonroad mobile NO<sub>x</sub> emissions decrease by about 14 percent between 1999 and 2006, and about four percent between 1999 and 2015. Nonroad mobile VOC emissions decrease by about 23 percent between 1999 and 2006, and about 63 percent between 1999 and 2015.

**TABLE 3-3**

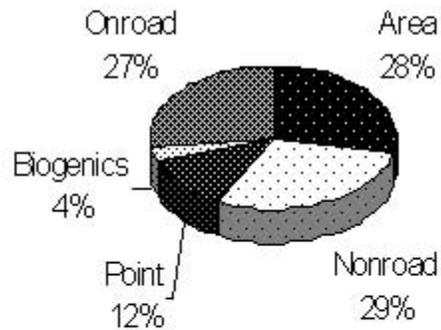
**SUMMARY OF NOX EMISSIONS FOR JULY EPISODE IN 1998 BASE CASE AND 2015 WITH COMMITTED MAINTENANCE MEASURES**

	Friday, July 17, 1998	Friday, July 2015	2015-1998 Difference
Source Category	Metric Tons per Day	Metric Tons per Day	Percent
Point	18.5	23.6	27.6
Area	33.2	53.6	61.4
Nonroad Mobile	57.4	55.8	-2.8
Onroad Mobile	126.2	51.6	-59.1
Biogenics	7.9	6.7	-15.2
Total	243.2	191.3	-21.3

**NOx for 1998, Day 198**  
**Total: 243.2 metric tons**



**NOx for 2015, Day 198**  
**Total: 191.3 metric tons**

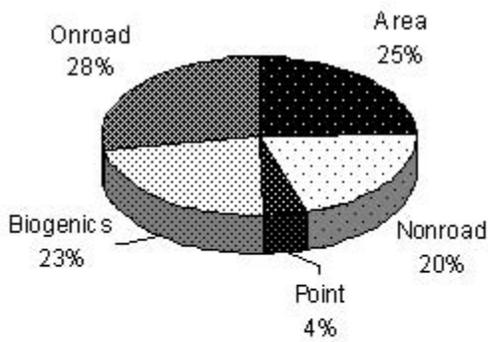


**TABLE 3-4**

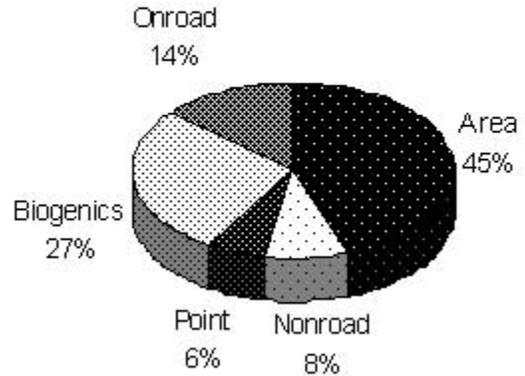
**SUMMARY OF VOC EMISSIONS FOR JULY EPISODE IN 1998 BASE CASE AND 2015 WITH COMMITTED MAINTENANCE MEASURES**

	Friday, July 17, 1998	Friday, July 2015	2015-1998 Difference
Source Category	Metric Tons per Day	Metric Tons per Day	Percent
Point	15.6	21.0	34.6
Area	91.9	152.1	65.5
Nonroad Mobile	76.2	27.9	-63.4
Onroad Mobile	103.5	46.3	-55.3
Biogenics	85.5	93.7	9.6
Total	372.7	341.0	-8.5

**VOCs for 1998, Day 198  
Total: 372.7 metric tons**



**VOCs for 2015, Day 198  
Total: 341.0 metric tons**

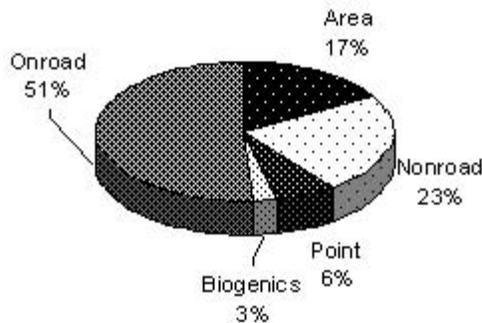


**TABLE 3-5**

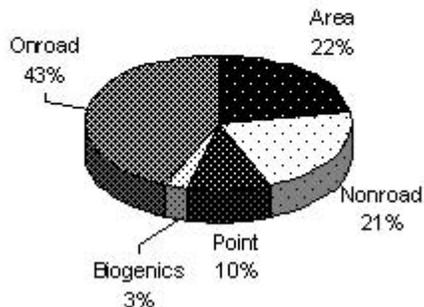
**SUMMARY OF NOX EMISSIONS FOR AUGUST EPISODE IN 1999 BASE CASE, AND 2006 AND 2015 WITH COMMITTED MAINTENANCE MEASURES**

	Tuesday, August 24, 1999	Tuesday, August 2006	Tuesday, August 2015	2006-1999 Difference	2015-1999 Difference
Source Category	Metric Tons per Day	Metric Tons per Day	Metric Tons per Day	Percent	Percent
Point	16.5	24.5	26.3	48.5	59.4
Area	43.0	54.1	67.4	25.8	56.7
Nonroad Mobile	59.3	50.9	57.2	-14.2	-3.5
Onroad Mobile	129.8	104.8	53.6	-19.3	-58.7
Biogenics	7.3	7.1	6.2	-2.7	-15.1
Total	255.9	241.4	210.7	-5.7	-17.7

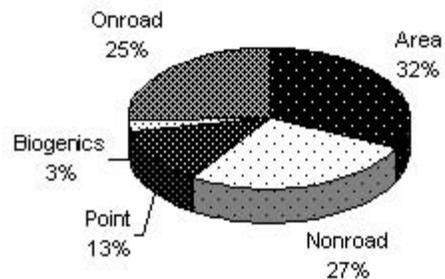
**NOx for 1999, Day 236  
Total: 255.9 metric tons**



**NOx for 2006, Day 236  
Total: 241.4 metric tons**



**NOx for 2015, Day 236  
Total: 210.7 metric tons**

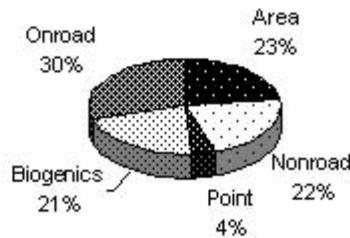


**TABLE 3-6**

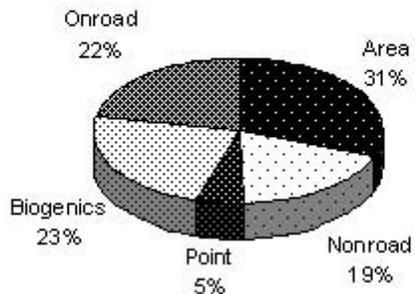
**SUMMARY OF VOC EMISSIONS FOR AUGUST EPISODE IN 1999 BASE CASE,  
AND 2006 AND 2015 WITH COMMITTED MAINTENANCE MEASURES**

	Tuesday, August 24, 1999	Tuesday, August 2006	Tuesday, August 2015	2006-1999 Difference	2015-1999 Difference
Source Category	Metric Tons per Day	Metric Tons per Day	Metric Tons per Day	%	%
Point	15.3	17.4	20.2	13.7	32.0
Area	82.6	101.4	123.5	22.8	49.5
Nonroad Mobile	78.5	61.0	28.7	-22.3	-63.4
Onroad Mobile	106.9	71.9	48.7	-32.7	-54.4
Biogenics	76.7	77.2	85.8	0.7	11.9
Total	360.0	328.9	306.9	-8.6	-14.8

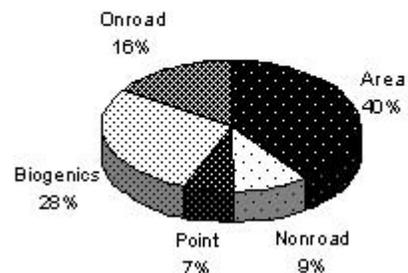
**VOCs for 1999, Day 236  
Total: 360.0 metric tons**



**VOCs for 2006, Day 236  
Total: 328.9 metric tons**



**VOCs for 2015, Day 236  
Total: 306.9 metric tons**



Next to the forest vegetation types, the “Residential” land use category has the highest emission factors for biogenic VOC emissions. On the other hand, the “Agriculture” land use type is the biggest contributor to biogenic NOx emissions. Since it is anticipated that residential area will continue to increase and agriculture area is expected to decline over time, biogenic VOC emissions increase by about 0.7 percent between 1999 and 2006, and about 12 percent between 1999 and 2015, while biogenic NOx emissions decrease by about 3 percent between 1999 and 2006, and about 15 percent between 1999 and 2015.

With implementation of the committed maintenance measures, total NOx emissions decrease by 5.7 percent between 1999 and 2006 and 17.7 percent between 1999 and 2015. Total VOC emissions decrease by 8.6 percent between 1999 and 2006 and 14.8 percent between 1999 and 2015.

### MAINTENANCE DEMONSTRATION

To demonstrate maintenance of the one-hour ozone NAAQS, the results from the urban airshed modeling analyses should not show predicted one-hour maximum ozone concentrations equivalent to or greater than 0.125 ppm anywhere in the modeling domain for the episode modeled. The maintenance demonstration follows the deterministic procedure prescribed in the EPA Guideline.

#### **UAM Analysis**

The purpose of future year simulations is to illustrate the effects of projected emission changes on simulated air quality for given episodes. Comparison of the base and future year emission totals, as shown in Tables 3-3 through 3-6, indicates that total NOx emissions for 2015 are 21 percent and 18 percent lower than the 1998 and 1999 emissions estimates, respectively. Total VOC emissions for 2015 are 9 percent and 15 percent lower than the 1998 and 1999 emissions estimates, respectively. The Base Case Input Preparation, Quality Assurance and Diagnostic Analyses, and Performance Evaluation for the UAM runs are documented in Sections III, VI, and V, respectively, of the Ozone Maintenance Plan Technical Support Document.

#### **UAM Results**

The 1998, 1999, 2006, and 2015 maximum simulated ozone one-hour concentrations and the grid cells where the maximum ozone concentrations occurred are provided in Table 3-7. As shown, the simulated one-hour ozone concentrations for both July and August episodes are below 125 ppb everywhere in the modeling domain for both 2006 and 2015. Therefore, the modeling results showed maintenance of the NAAQS for ozone in 2006 and 2015 for the Maricopa County nonattainment area.

### MOBILE SOURCE EMISSIONS BUDGETS FOR OZONE

In accordance with the 1990 Clean Air Act Amendments, conformity requirements are intended to ensure that transportation activities do not result in air quality degradation. Section 176 of the Amendments requires that transportation plans, programs, and projects conform to applicable air quality plans before the transportation action is approved by a Metropolitan Planning Organization (MPO). The designated MPO for the Maricopa County area is MAG.

**TABLE 3-7**

**THE 1998, 1999, 2006 AND 2015 MAXIMUM SIMULATED ONE-HOUR OZONE CONCENTRATIONS FOR BOTH THE JULY AND AUGUST EPISODES**

<b>Modeled Episode</b>	<b>Regional Maximum Simulated One-hour Concentration (ppb)</b>	<b>Location</b>
July 1998	119	(41,30)
August 1999	125	(53,28)
August 2006	124	(52,30)
July 2015	116	(45,35)
August 2015	120	(51,30)

Section 176(c) of CAAA provides the framework for ensuring that Federal actions conform to air quality plans under Section 110. Conformity to an implementation plan means that proposed activities must not (1) cause or contribute to any new violation of any standard in any area, (2) increase the frequency or severity of any existing violation of any standard in any area, or (3) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

EPA transportation conformity regulations establish criteria involving comparison of projected transportation plan emissions with the motor vehicle emissions assumed in applicable air quality plans. The regulations define the term “motor vehicle emissions budget” as meaning “the portion of the total allowable emissions defined in a revision of the applicable implementation plan (or in an implementation plan revision which was endorsed by the Governor or his or her designee) for a certain date for the purpose of meeting reasonable further progress milestones or attainment or maintenance demonstrations, for any criteria pollutant or its precursors, allocated by the applicable implementation plan to highway and transit vehicles.”

The transportation conformity budget for Volatile Organic Compounds (VOCs) was established in the EPA approved and promulgated Revised Rate of Progress Federal Implementation Plan (FIP), effective August 5, 1999. This FIP established a motor vehicle emissions budget for VOCs of 87.1 metric tons for an average summer (ozone) season day. This budget will be used in MAG transportation conformity analyses until the Maintenance Plan is approved or the maintenance budget is found to be adequate. At that time, new transportation conformity budgets for VOC and NO<sub>x</sub> will be established for 2006 and 2015 for use in subsequent conformity analyses.

Onroad mobile source emissions for 2006 and 2015 were developed by MAG using the EPA-approved MOBILE6 model and Highway Performance Monitoring System (HPMS) reconciliation methodology. Documentation of the HPMS reconciliation methodology and an EPA approval letter are contained in Appendix III-iv of TSD. After the new motor vehicle emissions budgets are approved by EPA for conformity purposes, MAG will apply MOBILE6 and the HPMS reconciliation procedure to estimate onroad mobile source emissions for all conformity horizon years.

The projections of the primary episode (a Tuesday in August) in this Maintenance Plan indicate that total NO<sub>x</sub> emissions in 2006 and 2015 would be 241.4 and 210.7 metric tons per day, respectively, with the committed maintenance measures. The onroad mobile source contribution for NO<sub>x</sub> is 104.8 metric tons per day in 2006 and 53.6 metric tons per day in 2015 (from Table 3-5). Table 3-6 shows that total VOC emissions in 2006 and 2015 would be 328.9 and 306.9 metric tons per day, respectively, with the committed maintenance measures, which includes an onroad mobile source contribution for VOCs of 71.9 metric tons per day in 2006 and 48.7 metric tons per day in 2015. The total onroad mobile source emissions of 53.6 metric tons per day for NO<sub>x</sub> and 48.7 metric tons per day for VOCs represent the conformity budgets for ozone precursors in 2015. Since 2006 was also modeled, the Maintenance Plan establishes interim conformity budgets of 104.8 metric tons per day for NO<sub>x</sub> and 71.9 metric tons per day for VOCs in 2006. The 2006 and

2015 emission inventories used to establish the mobile source emissions budgets are documented in Appendix VI of the Technical Support Document.

After EPA finds the maintenance budgets to be adequate or approves the Maintenance Plan, MAG will apply the provisions of the EPA transportation conformity regulations (August 15, 1997), 40 CFR Part 93 Section 93.118(b). This Maintenance Plan establishes motor vehicle emissions budgets for the maintenance year of 2015 and the interim year of 2006. In accordance with 40 CFR Part 93 Section 93.118(b), MAG will use the new interim 2006 mobile source VOC and NO<sub>x</sub> emissions budgets for the conformity horizon years of 2006 through 2014 and the new 2015 mobile source ozone precursor emissions budgets for conformity horizon years after 2014.

### MONITORING NETWORK / VERIFICATION OF CONTINUED ATTAINMENT

Air quality monitoring data in Maricopa County confirm that the attainment date of November 15, 1999, was met, since no violation of the one-hour ozone standard has occurred at any monitor since 1996. As a result, on May 30, 2001, EPA published a final rulemaking notice determining that the Phoenix metropolitan serious ozone nonattainment area has attained the one-hour ozone air quality standard by the Clean Air Act deadline of November 15, 1999.

Once the Maricopa County Nonattainment Area has been redesignated to attainment status by EPA, the Arizona Department of Environmental Quality (ADEQ) and the Maricopa County Environmental Services Department (MCESD) will continue to operate an appropriate air quality monitoring network of National Air Monitoring Stations (NAMS) and State and Local Air Monitoring Stations (SLAMS) monitors in accordance with 40 CFR Part 58 to verify the continued attainment of the ozone standard. If measured mobile source parameters (e.g., vehicle miles traveled, congestion, fleet mix, etc.) change significantly over time, ADEQ and MCESD will perform the appropriate studies to determine whether additional and/or re-sited monitors are necessary. Annual review of the NAMS/SLAMS air quality surveillance system will be conducted in accordance with 40 CFR 58.20(d) to determine whether the system continues to meet the monitoring objectives presented in Appendix D of 40 CFR Part 58.

In order to track the progress of the Maintenance Plan, periodic emission inventories will also be prepared every three years in accordance with Section 187(a)(5) of the Clean Air Act. Maricopa County will coordinate and compile the inventory with input and assistance from the Arizona Department of Environmental Quality, Arizona Department of Transportation, and Maricopa Association of Governments, as described in the 1992 Air Quality Memorandum of Agreement. Changes in the inventory will be reviewed and evaluated through the regional air quality planning process to determine if additional measures should be considered.

The final 1999 Periodic Ozone Emissions Inventory was prepared by the Maricopa County Environmental Services Department in August 2002 and is provided in the Appendices. Work has begun on the 2002 periodic ozone emissions inventory and the Maricopa County

Environmental Services Department expects to complete the inventory by the second quarter of 2004.

### CONTINGENCY PROVISIONS

Section 175A(d) of the Clean Air Act requires that maintenance plans contain contingency provisions. EPA guidance on the required content of the contingency plan is provided in the September 4, 1992 EPA memorandum. This memo indicates that the contingency plan is not required to contain fully adopted contingency measures. However, the plan should contain clearly identified contingency measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time limit for action by the State. In addition, specific indicators should be identified which will be used to determine when the contingency measures need to be implemented. The Maintenance Plan addresses each of these requirements for an approvable contingency plan.

Consistent with the August 13, 1993 EPA guidance memorandum titled, "Early Implementation of Contingency Measures for Ozone and Carbon Monoxide (CO) Nonattainment Areas," the contingency plan described in the maintenance plan is comprised of committed control measures that are expected to be implemented early. Early implementation of contingency measures in a maintenance plan has been approved by EPA in the redesignation of the Salt Lake City Carbon Monoxide Nonattainment Area to attainment (see page 3216 of the January 21, 1999 Federal Register). In that action, EPA noted that both contingency measures in the Salt Lake City Contingency Plan had already been partially implemented.

The three contingency measures in the Maintenance Plan are Area A Expansion, Gross Polluter Option for I/M Program Waivers, and Increased Waiver Repair Limit Options. Emissions reduction credit for these contingency measures was not taken in the maintenance demonstration.

A description of these individual measures is provided in Section VI of the Technical Support Document. Early implementation of these contingency measures provides additional confidence that the one-hour ozone standard will be maintained through 2015.

The success of an air quality program is measured by the concentrations recorded at the monitors. EPA regulations (see 40 CFR 50.9 and Appendix H to 40 CFR 50) define an exceedance of the one-hour ozone standard as a daily maximum hourly average ozone measurement greater than 0.12 ppm. Values from 0.121 ppm to 0.124 ppm are rounded down to 0.12 ppm and thus, an exceedance is a daily maximum hourly average that is equal to or greater than 0.125 ppm. A violation of the NAAQS for one-hour ozone occurs when the expected number of exceedances per calendar year at any ozone monitoring site, averaged over the past three calendar years, is greater than 1.0.

In order to ensure that violations of the one-hour ozone standard do not occur in the future, ambient air quality monitoring data will be examined to determine if additional contingency measures are needed. Contingency provisions will be triggered when the fourth highest

daily maximum hourly measurement over the past three years exceeds 0.120 ppm at any ozone monitor. If this occurs, additional measures will be considered, which may include the strengthening of existing contingency measures. This trigger is more stringent than the standard and will serve to prevent the occurrence of future violations. When activated, additional control measures would be considered on the following schedule: (A) verification of the monitoring data to be completed three months after activation of the trigger; (B) applicable measure to be considered for adoption six months after date established in A above; and (C) resultant committed measure to be implemented within six to twelve months, depending upon the time needed to put the measure in place.

#### SUBSEQUENT MAINTENANCE PLAN REVISIONS

It is required that a maintenance plan revision be submitted to the EPA eight years after the original redesignation request/maintenance plan is approved. The purpose of this revision is to provide for maintenance of the ozone NAAQS for an additional ten years following the first ten-year period. As the designated Regional Air Quality Planning Agency for the Maricopa County area, the Maricopa Association of Governments intends to prepare a revised maintenance plan eight years after redesignation to attainment, as required by the Clean Air Act and the Environmental Protection Agency.