MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

APPENDICES

VOLUME THREE

FEBRUARY 2009

MARICOPA ASSOCIATION of GOVERNMENTS

MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

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FEBRUARY 2009

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FOR

OZONE MODELING IN SUPPORT OF THE EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

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FEBRUARY 2009

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Maintenance Measures

MAINTENANCE MEASURE #1

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

The “Summer Fuel Reformulation: California Phase 2 and Federal Phase II Reformulated Gasoline with 7 psi from May 1 through September 30" measure affects emissions from onroad vehicle gasoline-powered engines. With the implementation of this measure, a cleaner burning formulation of gasoline than would otherwise be used will be sold in the modeling area during the ozone season. The methodology used to estimate the benefit is described below. In this analysis, all onroad credit for committed measure package gasoline is applied using the MOBILE6 model.

To estimate the effect of the expected gasoline formulation on onroad emissions, the MOBILE6 model was used. MOBILE6 accepts as input data for the gasoline vapor pressure (RVP), oxygenate content, and sulfur content. The MOBILE6 model runs performed for this analysis in 2025 incorporate the committed maintenance measure package RVP value (7.0 psi). Additionally, in MOBILE6, a flag is available to indicate that reformulated gasoline is to be assumed in the analysis.

To estimate the effect of the cleaner burning gasoline, MOBILE6 was performed using both the committed measure package and the baseline (2005 conditions) formulations. The emissions estimated by the two runs were processed through the M6Link program independently and the difference in final emissions estimates was calculated. The reformulated gasoline was set to reflect the southern location of Arizona using the "S" option. The credit for this measure is applied to the entire modeling domain as it is assumed that the gasoline quality is consistent across the modeling domain due to the structure of the Arizona gasoline distribution system. Additional information about the options available to the user of MOBILE6 for the modeling of gasoline quality may be found on pages 148 through 167 of the User’s Guide to MOBILE6.1 and MOBILE6.2 Mobile Source Emission Factor Model, October 2002.

No specific credit was taken for reformulated gasoline on nonroad emissions as it is assumed that the very stringent nonroad engine standards include that the engines will use cleaner burning reformulated gasoline.

The baseline inventory reflected actual monitored gasoline formulation qualities from the summer season. The impact of this maintenance measure in 2025 is a 0.1% increase in anthropogenic NOx emissions and a 0.5% decrease in anthropogenic VOC emissions.

MAINTENANCE MEASURE #2

Phased-In Emission Test Cutpoints

The "Phased-In Emission Test Cutpoints" measure affects onroad emissions. With the implementation of this measure, vehicles which are subject to the enhanced I/M program are held to a stricter set of cutpoints than would otherwise be the case. The stricter cutpoints were implemented in January 2000. If a vehicle exceeds the emission levels set by the cutpoint for carbon monoxide, hydrocarbons, or NOx, the vehicle fails the test.

The Arizona Department of Environmental Quality (ADEQ) provided a table of emission testing cutpoints for each model year vehicle subject to the enhanced I/M program in the May 28, 2001 ADEQ memo Cutpoints for IM147 for MOBILE6. These cutpoints are entered into a data file in a format appropriate for input to the MOBILE6 model. The format for the table appropriate for input to MOBILE6 may be found in section 2.8.9.4.g of the User's Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model, EPA420-R-02-028, October 2002.

The composite cutpoints (I/M147 program) that reflect the enhanced program are indicated in the following table. The LDGV cutpoints were used in the MOBILE6 Block 1 cutpoint values. The LDGT1 cutpoints were used in Block 2. The LDGT2 cutpoints were used in Block 3.

Model Year	Vehicle Class	Hydrocarbons	CO	NOx
1981-1982	LDGV	3.00	25.00	3.50
1983-1985	LDGV	2.40	20.00	3.50
1986-1989	LDGV	1.60	15.00	2.50
1990-1993	LDGV	1.00	12.00	2.50
1994+	LDGV	0.80	12.00	2.00
1981-1985	LDGT1	4.00	40.00	5.50
1986-1989	LDGT1	3.00	25.00	4.50
1990-1993	LDGT1	2.00	20.00	4.00
1994+	LDGT1	1.60	20.00	3.00
1981-1985	LDGT2	4.40	48.00	7.00
1986-1987	LDGT2	4.00	40.00	5.50
1988-1989	LDGT2	3.00	25.00	5.50
1990-1993	LDGT2	3.00	25.00	5.00
1994+	LDGT2	2.40	25.00	4.00

While the previous table lists the cutpoints used for model years back to 1981, due to the structure of MOBILE6, only the cutpoints back to the model year 2001 are considered when performing a 2025 run. This is because the MOBILE6 model only considers the most recent 25 model years in any particular run. In 2025, the 25th model year included in the modeling

is a 2001 vehicle. The enhanced I/M program with the I/M cutpoints was removed as the base case.

The benefit from the enhanced I/M program with the cutpoints was estimated by running the M6Link model with the MOBILE6 outputs developed using the base case without the enhanced I/M program and then rerunning M6Link with the MOBILE6 outputs developed using the enhanced I/M program with the cutpoints. In both cases, MOBILE6 was run with a five year grace period from the I/M program for the newest model year vehicles.

The anthropogenic emission reductions attributable to this maintenance measure in 2025 are less than 0.1% for both NOx and VOC.

MAINTENANCE MEASURE #3

One Time Waiver from Vehicle Emissions Test

The “One Time Waiver from Vehicle Emissions Test” measure affects onroad emissions. With the implementation of this measure, vehicles are allowed no more than a single I/M waiver after January 1, 1997. The methodology used to estimate the emissions reduction is described below.

MOBILE6 uses as input the waiver rates for two age groups of vehicles. The first age group includes vehicles whose model year is older than 1981. The second age group includes vehicles whose model year is equal to or newer than 1981. It is assumed that the waiver rates for the first and second age groups without this control measure would be four percent and three percent, respectively. The base case waiver rates incorporate no set limit on the number of waivers which a given vehicle may receive. This measure sets a limit of one on the number of waivers which any vehicle may receive.

It has been estimated that the average remaining life span of a vehicle which has received a waiver is three years (page E-5 of Feasibility and Cost-Effective Study of New Air Pollution Control Measures Pertaining to Mobile Sources, Sierra Research, Inc., June 1993). The waiver rate, which was four percent for pre-81 model years and three percent for 1981 and later model years, was changed to 0.709 percent and 0.781 percent in the MOBILE6 input for the 2025 base case, respectively. The credit for this measure was applied exclusively to Area A (S.B. 1427).

The anthropogenic emission reductions attributable to this maintenance measure in 2025 are 0.1% for NOx and less than 0.1% for VOC.

MAINTENANCE MEASURE #4

Tougher Enforcement of Vehicle Registration and Emission Test Compliance

The "Tougher Enforcement of Vehicle Registration and Emission Test Compliance" measure affects onroad emissions. With the implementation of this measure, the number of vehicles which are expected to be registered in the nonattainment area and tested in the I/M program is increased, resulting in a cleaner onroad vehicle fleet. The methodology used to estimate the emissions reduction is described below.

Without this control measure, the weighting factors of I/M and non-I/M emission factors from MOBILE6 were assumed to be 89.6 percent and 10.4 percent, respectively. This measure was implemented by adjusting the weighting factors between I/M and non-I/M emission factors from MOBILE6 in the M6Link control file.

The Report of the Governor's Air Quality Strategies Task Force, December 2, 1996 estimated that an additional 41,000 vehicles would be emission tested as a result of this measure. This estimate was confirmed with the Arizona Department of Environmental Quality and the Arizona Department of Transportation as being a reasonable but conservative estimate of the number of vehicles registered as a result of this measure.

The number of vehicles registered in Maricopa County during the time of the Task Force estimate was approximately 1.83 million. The inspection of an additional 41,000 vehicles would be an additional 2.0 percent of the vehicles being emissions tested. It is assumed that the increase in the vehicles being emission tested, taken as a fraction, would remain constant or increase over time. In other words, the number of vehicles which will participate in the I/M program in 2025 would be increased by 2.0 percent compared with the case without this control measure. By implementing this control measure, the weighting factors were changed from 89.6 percent and 10.4 percent to 91.6 percent and 8.4 percent for I/M and non-I/M emission factors, respectively.

The anthropogenic emission reductions attributable to this maintenance measure in 2025 are 0.1% for NOx and less than 0.1% for VOC.

MAINTENANCE MEASURE #5

Federal Nonroad Equipment Standard

In 1998 EPA issued a final rule setting more stringent Tier 2 and Tier 3 emission standards for new diesel nonroad equipment (EPA, Federal Register, Vol. 63. No. 205, October 23, 1998, pp. 56967-57023). The Tier 2 program phased in more stringent standards for all equipment between 2001 and 2006 and Tier 3 imposed even more stringent standards for 50 to 750 hp engines beginning in 2006 through 2008.

In 2004 EPA issued the Clean Air Nonroad Diesel - Tier 4 Final Rule that requires manufacturers to produce nonroad engines with advanced emission-control technologies that will reduce emissions by more than 90 percent (EPA, Federal Register, Vol 69, No. 124, June 29, 2004, pp. 38958-39273). The Tier 4 standards apply to nonroad engines less than 25 hp, beginning in 2008. Larger engines must comply with the Tier 4 standards by 2011-2015.

This measure was modeled by running the EPA NONROAD model for 2005 using the 2025 equipment growth factors and comparing this with a 2025 run using the 2025 growth factors. The decrease in emissions between 2025 and 2005 represents the impact of the more stringent federal nonroad diesel equipment standards implemented between 2005 and 2025.

The impact of this measure in 2025 is a 7.9% decrease in anthropogenic VOC emissions and a 16.5% decrease in anthropogenic NOx emissions.

MAINTENANCE MEASURE #6

Expansion of Area A Boundary

Arizona Legislature passed H.B. 2538 in 2001 which expands the boundaries of Area A. Previously, the Area A boundaries followed the boundaries defined by S.B. 1427, which was passed by the Arizona Legislature in 1998. Specifically, H.B. 2538 expands the boundaries of Area A past those described in S.B. 1427 adding additional portions of Maricopa County west of Goodyear and Peoria and a small piece of land on the north side of Lake Pleasant. The implementation of air quality measures in the areas described in H.B. 2538 began on January 1, 2002, except for public sector alternative fuel requirements that are phased in over a seven year period.

"Area A" means the area delineated as follows:

(a) In Maricopa County:
Township 8 North, Range 2 East and Range 3 East
Township 7 North, Range 2 West Through Range 5 East
Township 6 North, Range 5 West Through Range 6 East
Township 5 North, Range 5 West Through Range 7 East
Township 4 North, Range 5 West Through Range 8 East
Township 3 North, Range 5 West Through Range 8 East
Township 2 North, Range 5 West Through Range 8 East
Township 1 North, Range 5 West Through Range 7 East
Township 1 South, Range 5 West Through Range 7 East
Township 2 South, Range 5 West Through Range 7 East
Township 3 South, Range 5 West Through Range 1 East
Township 4 South, Range 5 West Through Range 1 East

(b) In Pinal County:
Township 1 North, Range 8 East And Range 9 East
Township 1 South, Range 8 East And Range 9 East
Township 2 South, Range 8 East And Range 9 East
Township 3 South, Range 7 East Through Range 9 East

(c) In Yavapai County:
Township 7 North, Range 1 East And Range 1 West Through Range 2 West
Township 6 North, Range 1 East And Range 1 West

It is important to note that under A.R.S. 49-406 (A), MAG has statutory authority to conduct nonattainment area planning within Maricopa County. However, MAG does not have air quality planning authority for either Pinal or Yavapai Counties.

Under A.R.S. 49-406 (K), the Arizona Department of Environmental Quality has air quality planning authority to adopt SIP measures in those portions of Area A in Pinal and Yavapai Counties where MAG does not have authority. For ozone, the committed measures include the Vehicle Emissions Inspection Program, Clean Burning Gasoline Program, Stage II Vapor Recovery Program, Trip Reduction Program, Voluntary Vehicle Repair and Retrofit Program, and Traffic Signal Synchronization. For carbon monoxide, the committed measures include

the Vehicle Emissions Inspection Program, Clean Burning Gasoline Program, Trip Reduction Program, Clean Burning Fireplace Construction and Conversion Program, No Burn Days and Public Participation Programs, and Voluntary Vehicle Repair and Retrofit Program. MAG anticipates that ADEQ will also provide notice and public hearing on this plan, perhaps jointly with MAG, prior to ADEQ's adoption of the plan under A.R.S section 49-404 and ADEQ's subsequent submittal of the plan to EPA for approval. Emission reduction credit for this measure applies only to the area between the Area A boundary established by S.B. 1427 and the Area A boundary established by H.B. 2538.

This measure was modeled by running M6Link using the expanded GIS coverage files for Area A (S.B. 2538) and comparing with a run applying the previous GIS coverage files for Area A (S.B. 1427). The difference in emissions between these two runs represents the impact of the expansion of Area A boundaries implemented in 2025.

The impact of this measure in 2025 is a 0.1% decrease in anthropogenic NOx emissions and less than a 0.1% decrease in anthropogenic VOC emissions.

MAINTENANCE MEASURE #7

Ban Open Burning during Ozone Season

The measure was adopted by Senate Bill 1552 on June 20, 2007 along with the liquid leaker test rule. This measure prohibits open outdoor fires during May 1 through September 30 of each year during the ozone season. The rule also prohibits all indoor burning using fireplaces in commercial, non-residential establishments, such as hotels and restaurants, during Restricted-Burn Periods with the exception of those that use gaseous fuels.

The emission reductions attributable to this measure were estimated by ADEQ. The anthropogenic emission reductions in 2025 are less than 0.1% of VOC and NOx.

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Senate Bill 1552

Conference Engrossed

State of Arizona
Senate
Forty-eighth Legislature
First Regular Session
2007

SENATE BILL 1552

AN ACT

AMENDING SECTION 9-500.04, ARIZONA REVISED STATUTES; AMENDING TITLE 9, CHAPTER 4, ARTICLE 8, ARIZONA REVISED STATUTES, BY ADDING SECTION 9-500.27; AMENDING SECTIONS 11-871 AND 11-872, ARIZONA REVISED STATUTES; AMENDING TITLE 11, CHAPTER 6, ARTICLE 4, ARIZONA REVISED STATUTES, BY ADDING SECTION 11-877; AMENDING SECTIONS 28-1098 AND 28-6705, ARIZONA REVISED STATUTES; AMENDING SECTION 41-2083, ARIZONA REVISED STATUTES, AS AMENDED BY LAWS 2007, CHAPTER 145, SECTION 1; AMENDING SECTION 41-2083, ARIZONA REVISED STATUTES, AS AMENDED BY LAWS 2007, CHAPTER 145, SECTION 2; AMENDING TITLE 41, CHAPTER 15, ARTICLE 3, ARIZONA REVISED STATUTES, BY ADDING SECTION 41-2083.01; AMENDING SECTION 41-2121, ARIZONA REVISED STATUTES; AMENDING TITLE 41, CHAPTER 15, ARTICLE 6, ARIZONA REVISED STATUTES, BY ADDING SECTION 41-2124.01; AMENDING SECTION 41-2124.01, ARIZONA REVISED STATUTES, AS ADDED BY SECTION 12 OF THIS ACT; AMENDING SECTION 49-457, ARIZONA REVISED STATUTES; AMENDING TITLE 49, CHAPTER 3, ARTICLE 2, ARIZONA REVISED STATUTES, BY ADDING SECTIONS 49-457.01, 49-457.02, 49-457.03 AND 49-457.04; AMENDING SECTION 49-474.01, ARIZONA REVISED STATUTES; AMENDING TITLE 49, CHAPTER 3, ARTICLE 3, ARIZONA REVISED STATUTES, BY ADDING SECTIONS 49-474.05, 49-474.06 AND 49-474.07; AMENDING SECTION 49-501, ARIZONA REVISED STATUTES; AMENDING SECTION 49-542, ARIZONA REVISED STATUTES, AS AMENDED BY LAWS 2007, CHAPTER 171, SECTION 5; RELATING TO AIR QUALITY; PROVIDING FOR CONDITIONAL ENACTMENTS.

(TEXT OF BILL BEGINS ON NEXT PAGE)

Be it enacted by the Legislature of the State of Arizona:

Section 1. Section 9-500.04, Arizona Revised Statutes, is amended to read:

9-500.04. Air quality control; definitions

A. The governing body of a city or town in area A or AREA B as defined in section 49-541 shall:

1. If the city has a population exceeding fifty thousand persons according to the 1995 special census, adjust the work hours of at least eighty-five per cent of municipal employees each year beginning October 1 and ending April 1 in order to reduce the level of carbon monoxide, OZONE AND PARTICULATE MATTER concentrations caused by vehicular travel.

2. In area A, in consultation with the designated metropolitan planning organization, synchronize traffic control signals on all existing and new roadways, within and across jurisdictional boundaries, ~~which~~ THAT have ~~a traffic flow~~ AVERAGE DAILY TRIPS exceeding fifteen thousand motor vehicles per day.

3. In area A, beginning on January 1, ~~2000~~ 2008, develop and implement plans to stabilize targeted unpaved roads, alleys and unpaved shoulders on targeted arterials. The plans shall address the performance goals, the criteria for targeting the roads, alleys and shoulders, a schedule for implementation, funding options and reporting requirements. PRIORITY SHALL BE GIVEN TO THE FOLLOWING:

(a) UNPAVED ROADS WITH MORE THAN ONE HUNDRED AVERAGE DAILY TRIPS.

(b) UNPAVED SHOULDERS ON ARTERIAL ROADS AND OTHER ROAD SEGMENTS WHERE VEHICLE USE ON UNPAVED SHOULDERS IS EVIDENT OR ANTICIPATED DUE TO PROJECTED TRAFFIC VOLUME.

4. In area A, acquire or utilize vacuum systems or other dust removal technology to reduce the particulates attributable to conventional crack sealing operations as existing equipment is retired.

5. IN AREA A, IN ORDER TO REDUCE PARTICULATE MATTER IN AMBIENT AIR:

(a) BEGINNING MARCH 31, 2008, ON ANY HIGH POLLUTION ADVISORY DAY FORECAST BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY PROHIBIT EMPLOYEES OR CONTRACTORS OF THAT CITY OR TOWN FROM OPERATING LEAF BLOWERS EXCEPT WHILE IN VACUUM MODE AND PROHIBIT THOSE EMPLOYEES OR CONTRACTORS FROM BLOWING LANDSCAPE DEBRIS INTO PUBLIC ROADWAYS AT ANY TIME.

(b) NO LATER THAN MARCH 31, 2008, ADOPT, IMPLEMENT AND ENFORCE AN ORDINANCE THAT BANS THE BLOWING OF LANDSCAPE DEBRIS INTO PUBLIC ROADWAYS AT ANY TIME BY ANY PERSON.

6. IN AREA A, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AND, NO LATER THAN OCTOBER 1, 2008, COMMENCE ENFORCEMENT OF THOSE CODES OR ORDINANCES AS NECESSARY TO REQUIRE THAT PARKING, MANEUVERING, INGRESS AND EGRESS AREAS AT DEVELOPMENTS OTHER THAN RESIDENTIAL BUILDINGS WITH FOUR OR FEWER UNITS ARE MAINTAINED WITH ONE OR MORE OF THE FOLLOWING DUSTPROOF PAVING METHODS:

(a) ASPHALTIC CONCRETE.
(b) CEMENT CONCRETE.
(c) PENETRATION TREATMENT OF BITUMINOUS MATERIAL AND SEAL COAT OF BITUMINOUS BINDER AND A MINERAL AGGREGATE.
(d) A STABILIZATION METHOD APPROVED BY THE CITY OR TOWN.

7. IN AREA A, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AND, NO LATER THAN OCTOBER 1, 2009, COMMENCE ENFORCEMENT OF THOSE CODES OR ORDINANCES AS NECESSARY TO REQUIRE THAT PARKING, MANEUVERING, INGRESS AND EGRESS AREAS THAT ARE THREE THOUSAND SQUARE FEET OR MORE IN SIZE AT RESIDENTIAL BUILDINGS WITH FOUR OR FEWER UNITS ARE MAINTAINED WITH A PAVING OR STABILIZATION METHOD AUTHORIZED BY THE CITY OR TOWN BY CODE, ORDINANCE OR PERMIT.

8. IN AREA A, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AS NECESSARY TO RESTRICT VEHICLE PARKING AND USE ON UNPAVED OR UNSTABILIZED VACANT LOTS.

9. IN AREA A, NO LATER THAN MARCH 31, 2008, REQUIRE THAT NEW OR RENEWED CONTRACTS FOR STREET SWEEPING ON CITY STREETS MUST BE CONDUCTED WITH STREET SWEEPERS THAT MEET THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1186 STREET SWEEPER CERTIFICATION SPECIFICATIONS FOR PICK UP EFFICIENCY AND PM-10 EMISSIONS IN EFFECT ON JANUARY 1, 2007.

~~5.~~ 10. In area B, synchronize traffic control signals on all roadways ~~which~~ THAT have ~~a traffic flow~~ AVERAGE DAILY TRIPS exceeding fifteen thousand motor vehicles per day.

B. The governing body of a city or town in area B as defined in section 49-541 may make and enforce ordinances to reduce or encourage the reduction of the commuter use of motor vehicles by employees of the city or town and employees whose place of employment is within the city or town.

C. Except as provided in subsection F of this section, the governing body of a city or town in area A as defined in section 49-541 in a county with a population of more than one million two hundred thousand persons according to the most recent United States decennial census shall develop and implement a vehicle fleet plan for the purpose of encouraging and progressively increasing the use of alternative fuels and clean burning fuels in city or town owned vehicles. The plan shall include a timetable for increasing the use of alternative fuels and clean burning fuels in fleet vehicles either through purchase or conversion.

D. The timetable shall reflect the following schedule and percentage of vehicles ~~which~~ THAT operate on alternative fuels and clean burning fuels:

1. At least eighteen per cent of the total fleet by December 31, 1995.
2. At least twenty-five per cent of the total fleet by December 31, 1996.
3. At least fifty per cent of the total fleet by December 31, 1998.
4. At least seventy-five per cent of the total fleet by December 31, 2000 and each year thereafter.

E. The requirements of subsections C and D of this section may be waived on receipt of evidence acceptable to the city or town council that the city or town is unable to acquire or be provided equipment or refueling facilities necessary to operate vehicles using alternative fuels or clean burning fuels at a projected cost that is reasonably expected to result in net costs of no greater than ten per cent more than the net costs associated with the continued use of conventional gasoline or diesel fuels measured over the expected useful life of the equipment or facilities supplied. Applications for waivers shall be filed with the department of environmental quality pursuant to section 49-412. An entity that receives a waiver pursuant to this section shall retrofit fleet heavy-duty diesel vehicles with a gross vehicle weight of eight thousand five hundred pounds or more, that were manufactured in or before model year 1993 and that are the subject of the waiver with a technology that is effective at reducing particulate MATTER emissions at least twenty-five per cent or more and that has been approved by the United States environmental protection agency pursuant to the urban bus engine retrofit/rebuild program. The entity shall comply with the implementation schedule pursuant to section 49-555.

F. The plan prescribed by subsection C of this section shall include provisions for the use of alternative fuels and clean burning fuels in the bus fleet operated by that city or town or a regional public transportation authority, except that all newly purchased buses shall use alternative fuel or clean burning fuel. The bus fleet shall comply with the timetable prescribed by subsection D of this section, except that the requirements of subsections C and D of this section may be waived on receipt of certification supported by evidence acceptable to the department of environmental quality that the city or town is unable to acquire or be provided equipment or refueling facilities necessary to operate vehicles using alternative fuels or clean burning fuels at a projected cost that is reasonably expected to result in net costs of no greater than twenty per cent more than the net costs associated with the continued use of conventional gasoline or diesel fuels measured over the expected useful life of the equipment or facilities supplied.

G. If the requirements of subsections C, D and F of this section are met by the use of clean burning fuel, vehicle equivalents under those requirements shall be calculated as follows:

1. One vehicle equivalent for every four hundred fifty gallons of neat biodiesel or two thousand two hundred fifty gallons of a diesel fuel substitute prescribed in section 1-215, paragraph 7, subdivision (b).

2. One vehicle equivalent for every five hundred thirty gallons of the fuel prescribed in section 1-215, paragraph 7, subdivision (d).

H. SUBSECTION A, PARAGRAPHS 5 THROUGH 8 OF THIS SECTION DO NOT APPLY TO ANY SITE THAT HAS A PERMIT ISSUED BY A CONTROL OFFICER AS DEFINED IN SECTION 49-471 FOR THE CONTROL OF FUGITIVE DUST FROM DUST GENERATING OPERATIONS.

~~H.~~ I. For the purposes of this section, "alternative fuel" and "clean burning fuel" have the same meanings prescribed in section 1-215.

Sec. 2. Title 9, chapter 4, article 8, Arizona Revised Statutes, is amended by adding section 9-500.27, to read:

9-500.27. Off-road vehicle ordinance; applicability; violation; classification

A. NO LATER THAN MARCH 31, 2008, IN AREA A, AS DEFINED IN SECTION 49-541, A CITY OR TOWN SHALL ADOPT, IMPLEMENT AND ENFORCE AN ORDINANCE THAT PROHIBITS THE OPERATION OF ANY VEHICLE, INCLUDING AN OFF-HIGHWAY VEHICLE, AN ALL-TERRAIN VEHICLE OR AN OFF-ROAD RECREATIONAL MOTOR VEHICLE, ON AN UNPAVED SURFACE THAT IS NOT A PUBLIC OR PRIVATE ROAD, STREET OR LAWFUL EASEMENT AND THAT IS CLOSED BY THE LANDOWNER BY RULE OR REGULATION OF A FEDERAL AGENCY, THIS STATE, A COUNTY OR A MUNICIPALITY OR BY PROPER POSTING IF THE LAND IS PRIVATE LAND.

B. THIS SECTION DOES NOT APPLY TO THE OPERATION OF VEHICLES USED IN THE NORMAL COURSE OF BUSINESS OR THE NORMAL COURSE OF GOVERNMENT OPERATIONS.

C. THIS SECTION DOES NOT PROHIBIT OR PREEMPT THE ENFORCEMENT OF ANY SIMILAR ORDINANCE THAT IS ADOPTED BY A CITY OR TOWN IN AREA A, AS DEFINED IN SECTION 49-541, BEFORE MARCH 31, 2008 FOR PURPOSES OF DUST ABATEMENT.

D. A PERSON WHO VIOLATES AN ORDINANCE ADOPTED PURSUANT TO SUBSECTION A OF THIS SECTION IS GUILTY OF A CLASS 3 MISDEMEANOR.

E. IN ADDITION TO OR IN LIEU OF A FINE PURSUANT TO THIS SECTION, A JUDGE MAY ORDER THE PERSON TO PERFORM AT LEAST EIGHT BUT NOT MORE THAN TWENTY-FOUR HOURS OF COMMUNITY RESTITUTION OR TO COMPLETE AN APPROVED SAFETY COURSE RELATED TO THE OFF-HIGHWAY OPERATION OF MOTOR VEHICLES, OR BOTH.

Sec. 3. Section 11-871, Arizona Revised Statutes, is amended to read:

11-871. Emissions control; no burn; exemptions; penalty

A. A county that contains any part of area A, as defined in section 49-541, shall~~, by September 1, 1999,~~ develop, implement and enforce in area A, as defined in section 49-541, an ordinance relating to residential wood burning restrictions, including a no burn restriction when monitoring or forecasting ~~indicates~~ BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY PREDICTS the carbon monoxide standard is likely to be exceeded.

B. ON OR BEFORE OCTOBER 31, 2007, A COUNTY THAT CONTAINS ANY PART OF AREA A, AS DEFINED IN SECTION 49-541, SHALL AMEND THE ORDINANCE PRESCRIBED BY SUBSECTION A OF THIS SECTION TO INCLUDE A NO BURN RESTRICTION FOR ANY HIGH POLLUTION ADVISORY DAY FORECAST BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY FOR PARTICULATE MATTER.

~~B.~~ C. The ordinance shall provide an exemption for the use of residential wood stoves, wood fireplaces or gas fired fireplaces that comply with any of the following:

1. Provides the sole or primary source of heat or fuel for cooking for a residence.

2. Meets performance standards for new residential wood heaters manufactured on or after July 1, 1990 or sold at retail on or after July 1, 1992 as prescribed by 40 Code of Federal Regulations part 60, subpart AAA.

3. Burns gaseous fuels, including gas logs.

4. Meets rules adopted by the board of supervisors as prescribed in section 49-479 for burning wood in approved appliances.

~~C.~~ D. The ordinance shall provide that a person who violates an ordinance adopted pursuant to this section is subject to:

1. A warning for the first violation.

2. The imposition of a civil penalty of fifty dollars for the second violation.

3. The imposition of a civil penalty of one hundred dollars for ~~a~~ THE third ~~or any subsequent~~ violation.

4. THE IMPOSITION OF A CIVIL PENALTY OF TWO HUNDRED FIFTY DOLLARS FOR THE FOURTH OR ANY SUBSEQUENT VIOLATION.

~~D.~~ E. For violations of ordinances adopted pursuant to this section, the control officer shall use a uniform civil ticket and complaint substantially similar to a uniform traffic ticket and complaint prescribed by the rules of procedure in civil traffic cases adopted by the supreme court. The control officer may issue citations to persons in violation of ordinances adopted pursuant to this section.

Sec. 4. Section 11-872, Arizona Revised Statutes, is amended to read:

11-872. Control techniques; rules; schedule for adoption

A. If the administrator of the United States environmental protection agency makes a finding relating to area A, as defined in section 49-541, pursuant to the clean air act amendments of 1990 (P.L. 101-549), section 172, the county shall adopt by rule the necessary emission limitations or other standards reflecting control techniques guidelines issued by the United States environmental protection agency pursuant to the clean air act amendments of 1990, section 183 in order to achieve emissions reductions sufficient to respond to the finding.

B. The county shall begin to develop rules ~~which~~ THAT incorporate the provisions of the control techniques guidelines being developed by the United States environmental protection agency. The rule making process shall parallel as closely as possible the United States environmental protection agency process and incorporate adequate public notice and comment. The county shall make every practical effort to assure the rules are consistent with the concepts and provisions embodied in the United States environmental protection agency process. Within sixty days ~~of~~ AFTER the formal adoption of the United States environmental protection agency control techniques guidelines for an industry sector, the county shall adopt rules, emission limitations or other standards reflecting such guidelines. If the guidelines are required pursuant to subsection A of this section prior to formal adoption by the administrator of the guidelines, the county rules shall become effective within sixty days ~~of~~ AFTER the United States environmental

protection agency finding. The county shall determine which industry sector shall be subject to the requirements of this section.

C. If the director of the department of environmental quality determines that emissions inventory data, monitoring information and modeling or projections indicate it is likely that reasonable further progress or attainment will not be achieved in order to comply with the clean air act amendments of 1990 OR ACHIEVE OR MAINTAIN NATIONAL AMBIENT AIR QUALITY STANDARDS OR OTHER AIR QUALITY STANDARDS APPLICABLE TO OZONE PRECURSORS, the county shall adopt rules necessary to achieve emissions reductions to achieve reasonable further progress or attainment. The rules shall be based on technically feasible controls to reduce the emissions of volatile organic compounds from industry sectors that the United States environmental protection agency is considering for control technique guidelines.

D. All emissions reductions required pursuant to this section shall be achieved FOR PURPOSES OF THE ONE-HOUR OZONE STANDARD no later than June 1, 1996 AND FOR PURPOSES OF THE EIGHT-HOUR AVERAGED OZONE STANDARD NO LATER THAN DECEMBER 31, 2008.

Sec. 5. Title 11, chapter 6, article 4, Arizona Revised Statutes, is amended by adding section 11-877, to read:

11-877. Air quality control measures

A. IN ORDER TO REDUCE PARTICULATE MATTER IN AMBIENT AIR, THE BOARD OF SUPERVISORS OF ANY COUNTY THAT CONTAINS ANY PORTION OF AREA A, AS DEFINED IN SECTION 49-541, SHALL DEVELOP, IMPLEMENT AND ENFORCE IN AREA A THE FOLLOWING AIR QUALITY CONTROL MEASURES:

1. BEGINNING ON THE EFFECTIVE DATE OF THIS SECTION, PROHIBIT EMPLOYEES OR CONTRACTORS OF THAT COUNTY FROM OPERATING LEAF BLOWERS ON ANY HIGH POLLUTION ADVISORY DAY FORECAST BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY EXCEPT WHILE IN VACUUM MODE AND PROHIBIT THOSE EMPLOYEES OR CONTRACTORS FROM BLOWING LANDSCAPE DEBRIS INTO PUBLIC ROADWAYS AT ANY TIME.

2. NO LATER THAN MARCH 31, 2008, ADOPT, IMPLEMENT AND ENFORCE AN ORDINANCE THAT BANS THE BLOWING OF LANDSCAPE DEBRIS INTO PUBLIC ROADWAYS AT ANY TIME BY ANY PERSON.

3. NO LATER THAN MARCH 31, 2008, ADOPT, IMPLEMENT AND ENFORCE AN ORDINANCE THAT PROHIBITS THE OPERATION OF LEAF BLOWERS EXCEPT ON SURFACES THAT HAVE BEEN STABILIZED WITH ASPHALTIC CONCRETE, CEMENT CONCRETE, HARDSCAPE, PENETRATION TREATMENT OF BITUMINOUS MATERIAL AND SEAL COAT OF BITUMINOUS BINDER AND A MINERAL AGGREGATE, DECOMPOSED GRANITE COVER, CRUSHED GRANITE COVER, AGGREGATE COVER, GRAVEL COVER, OR GRASS OR OTHER CONTINUOUS VEGETATIVE COVER, OR ANY COMBINATION OF THOSE STABILIZERS.

B. THIS SECTION DOES NOT APPLY TO ANY SITE THAT HAS A PERMIT ISSUED BY A CONTROL OFFICER AS DEFINED IN SECTION 49-471 FOR THE CONTROL OF FUGITIVE DUST FROM DUST GENERATING OPERATIONS.

Sec. 6. Section 28-1098, Arizona Revised Statutes, is amended to read:

28-1098. Vehicle loads; restrictions; civil penalties

A. FOR THE PURPOSE OF HIGHWAY SAFETY OR AIR POLLUTION PREVENTION, a person shall not drive or move a vehicle on a highway unless the vehicle is constructed or loaded in a manner to prevent any of its load from dropping, sifting, leaking or otherwise escaping from the vehicle, except ~~that either~~ THE FOLLOWING ARE PERMITTED:

1. SUFFICIENT sand may be dropped for the purpose of securing traction.

2. Water or another substance may be sprinkled on a roadway in cleaning or maintaining the roadway.

3. MINOR PIECES OF AGRICULTURAL MATERIALS SUCH AS LEAVES AND STEMS FROM AGRICULTURAL LOADS.

B. A person shall not operate a vehicle on a highway with a load unless the load and any covering on the load are securely fastened in a manner to prevent the covering or load from becoming loose, detached or in any manner a hazard to other users of the highway.

C. If a person is found in violation of this section and the violation:

1. Does not cause any damage or injury and is the person's:

(a) First violation in a sixty month period, the person is subject to a civil penalty of ~~up to~~ NOT MORE THAN two hundred fifty dollars.

(b) Second or subsequent violation in a sixty month period, the person is subject to a civil penalty of ~~up to~~ NOT MORE THAN three hundred fifty dollars.

2. Results in an accident causing serious physical injury as defined in section 13-105 to another person, the person is subject to a civil penalty of ~~up to~~ NOT MORE THAN five hundred dollars.

3. Results in an accident causing the death of another person, the person is subject to a civil penalty of ~~up to~~ NOT MORE THAN one thousand dollars.

Sec. 7. Section 28-6705, Arizona Revised Statutes, is amended to read:

28-6705. Public road and street maintenance

A. The board of supervisors may spend public monies for maintenance of public roads and streets other than legally designated state and county highways located without the limits of an incorporated city or town. Before spending public monies under this section, the roads or streets shall be both:

1. Laid out, opened and constructed without cost to the county.

2. Completed pursuant to a plat approved pursuant to sections 11-802 and 11-806.01 and in accordance with standard engineering road specifications adopted by the board of supervisors to ensure uniform compliance.

B. The board of supervisors may spend public monies for maintenance of public roads and streets laid out, constructed and opened before June 13,

1975 even if the roads and streets were not constructed in accordance with subsection A of this section.

C. Maintenance of a public road or street does not include purchasing or laying cement. To reduce long-term maintenance costs for maintenance authorized by this section, the board of supervisors may spend monies to add rock products, gravel and processed materials to the base of the roads and streets. Petroleum based or nonpetroleum based products may be used in the maintenance and repair of unpaved roads, alleys and shoulders identified pursuant to section 9-500.04 or ~~section~~ 49-474.01 OR UNPAVED ROADS, ALLEYS AND SHOULDERS IN ANY COUNTY WHERE THE CONTROL OFFICER AS DEFINED IN SECTION 49-471 CERTIFIES TO THE BOARD OF SUPERVISORS THAT EMISSIONS FROM SUCH ROADS, ALLEYS OR SHOULDERS MAY ENDANGER COMPLIANCE WITH THE NATIONAL AMBIENT AIR QUALITY STANDARD AS DEFINED IN SECTION 49-401.01.

Sec. 8. Section 41-2083, Arizona Revised Statutes, as amended by Laws 2007, chapter 145, section 1, is amended to read:

41-2083. Standards for motor fuel; exceptions

A. Except as provided in SECTION 41-2083.01 AND subsections C, D, E, F, G, K, L, M and N of this section, a retail seller or fleet owner shall not store, sell or expose or offer for sale any motor fuel, kerosene, oil or other liquid or gaseous fuel or lubricating oil, lubricant, mixtures of lubricants or other similar products if the product fails to meet the standards specified in this section and in the rules adopted by the director.

B. A person shall not misrepresent the nature, origination, quality, grade or identity of any product specified in subsection A of this section or represent the nature, origination, quality, grade or identity of such product in any manner calculated or tending to mislead or in any way deceive.

C. After consultation with the director of the department of environmental quality, the standards and test methods for motor fuels shall be established by the director of the department of weights and measures by rule.

D. Maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in a county with a population of one million two hundred thousand or more persons and any portion of a county contained in area A as defined in section 49-541 shall be 9.0 pounds per square inch from and after September 30 through March 31 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

E. From and after September 30 through March 31 of each year a person shall not supply or sell gasoline that exceeds the ASTM D4814 class A vapor pressure/distillation class ten volume per cent evaporated distillation temperature.

F. Maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in a county with a population of one million two hundred thousand

persons or more and any portion of a county contained in area A as defined in section 49-541 shall be 7.0 pounds per square inch from and after May 31 through September 30 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

G. Exclusively for the purposes of transportation conformity and only if the administrator of the United States environmental protection agency fails to approve the applicable plan required pursuant to section 49-406, maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in area B as defined in section 49-541 shall be ten pounds per square inch from and after September 30 through March 31 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

H. Notwithstanding subsections D, F and G of this section, the director of the department of weights and measures in consultation with the director of the department of environmental quality shall approve alternate fuel control measures that are submitted by manufacturers or suppliers of gasoline and that the directors determine will result in either of the following:

1. Motor vehicle carbon monoxide emissions that are equal to or less than emissions that result under compliance with subsection D of this section and section 41-2123. In making this determination, the director of the department of weights and measures and the director of the department of environmental quality shall compare the emissions of the alternate fuel control measure with the emissions of a fuel with a maximum vapor pressure standard as prescribed by this section and with the minimum oxygen content or percentage by volume of ethanol as prescribed by section 41-2123.

2. Motor vehicle non-methane hydrocarbon emissions that are equal to or less than the emissions that result under compliance with subsection F of this section. In making this determination, the director of the department of weights and measures and the director of the department of environmental quality shall compare the motor vehicle non-methane hydrocarbon emissions of the alternate fuel control measure with the motor vehicle non-methane hydrocarbon emissions of a fuel that complies with the maximum vapor pressure standard as prescribed by subsection F of this section.

I. Any alternate fuel control measures that are approved shall not increase emissions of non-methane hydrocarbons, particulates, carbon monoxide or oxides of nitrogen. Alternate fuel control measures approved pursuant to subsection H of this section and this subsection may be used by any manufacturer or supplier of gasoline unless the approval is rescinded more than one hundred eighty days before the first day of a gasoline control period. Manufacturers and suppliers who use an approved alternate fuel control measure shall annually submit a compliance plan to the director of

the department of weights and measures no later than sixty days before the first day of a gasoline control period.

J. A person shall not sell or offer or expose for sale diesel fuel grade 1, 2 or 4 as defined in ASTM D975 that contains sulfur in excess of:

1. For low sulfur diesel fuel, five hundred parts per million by weight for use in area A as defined in section 49-541.

2. For ultra low sulfur diesel fuel, the amount that conforms with 40 Code of Federal Regulations section 80.520(a)(1).

K. A person shall not sell or offer or expose for sale biodiesel that is not tested or does not meet the specifications established by ASTM D6751 or any blend of biodiesel and diesel fuel that is not tested or does not meet the specifications established by ASTM D975 and that contains sulfur in excess of five hundred parts per million for use in area A as defined in section 49-541.

L. A person that blends biodiesel that is intended as a final product for the fueling of motor vehicles shall report to the director by the fifteenth day of each month the quantity and quality of biodiesel shipped to or produced in this state during the preceding month. A person who supplies biodiesel subject to this subsection shall report the following by batch:

1. The percentage of biodiesel in a final blend.

2. The volume of the finished product.

3. For neat biodiesel, the results of analysis for those parameters established by ASTM D6751.

4. For biodiesel blended with any diesel fuel, the results of the analysis of the following motor fuel parameters as established by ASTM D975:

(a) Sulfur content.

(b) Aromatic hydrocarbon content.

(c) Cetane number.

(d) Specific gravity.

(e) American petroleum institute gravity.

(f) The temperatures at which ten per cent, fifty per cent and ninety per cent of the diesel fuel boiled off during distillation.

M. The report required by subsection L of this section shall be on a form prescribed by the director and shall contain a certification of truthfulness and accuracy of the data submitted and a statement of the supplier's consent permitting the department or its authorized agent to collect samples and access records as provided in rules adopted by the department. A corporate officer who is responsible for operations at the facility that produces or ships the final product shall sign the report.

N. A person shall label dispensers at which biodiesel is dispensed in such a manner as to notify other persons of the volume percentage of biodiesel in the finished product and that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

O. A person shall label each dispenser at which ultra low sulfur diesel fuel is dispensed in a manner that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

P. A person shall label each dispenser at which low sulfur diesel fuel is dispensed in a manner that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

Q. If any person transfers custody or title of a diesel fuel or distillate, except if the diesel fuel is dispensed into a motor vehicle or nonroad, locomotive or marine equipment, the transferor shall provide to the transferee product transfer documents that conform with 40 Code of Federal Regulations section 80.590.

R. If the transfer of a motor fuel is from a terminal, storage facility, or transmix facility, the product transfer documents shall contain the information prescribed in subsection Q of this section as well as the name and address of the final destination for the shipment, as prescribed by department rule, and must accompany the shipment to its final destination.

Sec. 9. Section 41-2083, Arizona Revised Statutes, as amended by Laws 2007, chapter 145, section 2, is amended to read:

41-2083. Standards for motor fuel; exceptions

A. Except as provided in SECTION 41-2083.01 AND subsections C, D, E, F, G, K, L, M and N of this section, a retail seller or fleet owner shall not store, sell or expose or offer for sale any motor fuel, kerosene, oil or other liquid or gaseous fuel or lubricating oil, lubricant, mixtures of lubricants or other similar products if the product fails to meet the standards specified in this section and in the rules adopted by the director.

B. A person shall not misrepresent the nature, origination, quality, grade or identity of any product specified in subsection A of this section or represent the nature, origination, quality, grade or identity of such product in any manner calculated or tending to mislead or in any way deceive.

C. After consultation with the director of the department of environmental quality, the standards and test methods for motor fuels shall be established by the director of the department of weights and measures by rule.

D. Maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in a county with a population of one million two hundred thousand or more persons and any portion of a county contained in area A as defined in section 49-541 shall be 9.0 pounds per square inch from and after September 30 through January 31 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

E. From and after September 30 through March 31 of each year a person shall not supply or sell gasoline that exceeds the ASTM D4814 class A vapor

pressure/distillation class ten volume per cent evaporated distillation temperature.

F. Maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in a county with a population of one million two hundred thousand persons or more and any portion of a county contained in area A as defined in section 49-541 shall be 7.0 pounds per square inch from and after May 31 through September 30 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

G. Exclusively for the purposes of transportation conformity and only if the administrator of the United States environmental protection agency fails to approve the applicable plan required pursuant to section 49-406, maximum vapor pressure for gasoline that is supplied or sold by any person and that is intended as a final product for the fueling of motor vehicles in area B as defined in section 49-541 shall be ten pounds per square inch from and after September 30 through March 31 of each year. Fuel used in motor vehicles at a manufacturer's proving ground or a motor vehicle racing event as defined by section 41-2121 is exempt from this subsection.

H. Notwithstanding subsections D, F and G of this section, the director of the department of weights and measures in consultation with the director of the department of environmental quality shall approve alternate fuel control measures that are submitted by manufacturers or suppliers of gasoline and that the directors determine will result in either of the following:

1. Motor vehicle carbon monoxide emissions that are equal to or less than emissions that result under compliance with subsection D of this section and section 41-2123. In making this determination, the director of the department of weights and measures and the director of the department of environmental quality shall compare the emissions of the alternate fuel control measure with the emissions of a fuel with a maximum vapor pressure standard as prescribed by this section and with the minimum oxygen content or percentage by volume of ethanol as prescribed by section 41-2123.

2. Motor vehicle non-methane hydrocarbon emissions that are equal to or less than the emissions that result under compliance with subsection F of this section. In making this determination, the director of the department of weights and measures and the director of the department of environmental quality shall compare the motor vehicle non-methane hydrocarbon emissions of the alternate fuel control measure with the motor vehicle non-methane hydrocarbon emissions of a fuel that complies with the maximum vapor pressure standard as prescribed by subsection F of this section.

I. Any alternate fuel control measures that are approved shall not increase emissions of non-methane hydrocarbons, particulates, carbon monoxide or oxides of nitrogen. Alternate fuel control measures approved pursuant to subsection H of this section and this subsection may be used by any

manufacturer or supplier of gasoline unless the approval is rescinded more than one hundred eighty days before the first day of a gasoline control period. Manufacturers and suppliers who use an approved alternate fuel control measure shall annually submit a compliance plan to the director of the department of weights and measures no later than sixty days before the first day of a gasoline control period.

J. A person shall not sell or offer or expose for sale diesel fuel grade 1, 2 or 4 as defined in ASTM D975 that contains sulfur in excess of:

1. For low sulfur diesel fuel, five hundred parts per million by weight for use in area A as defined in section 49-541.

2. For ultra low sulfur diesel fuel, the amount that conforms with 40 Code of Federal Regulations section 80.520(a)(1).

K. A person shall not sell or offer or expose for sale biodiesel that is not tested or does not meet the specifications established by ASTM D6751 or any blend of biodiesel and diesel fuel that is not tested or does not meet the specifications established by ASTM D975 and that contains sulfur in excess of five hundred parts per million for use in area A as defined in section 49-541.

L. A person who blends biodiesel that is intended as a final product for the fueling of motor vehicles shall report to the director by the fifteenth day of each month the quantity and quality of biodiesel shipped to or produced in this state during the preceding month. A person who supplies biodiesel subject to this subsection shall report the following by batch:

1. The percentage of biodiesel in a final blend.

2. The volume of the finished product.

3. For neat biodiesel, the results of analysis for those parameters established by ASTM D6751.

4. For biodiesel blended with any diesel fuel, the results of the analysis of the following motor fuel parameters as established by ASTM D975:

(a) Sulfur content.

(b) Aromatic hydrocarbon content.

(c) Cetane number.

(d) Specific gravity.

(e) American petroleum institute gravity.

(f) The temperatures at which ten per cent, fifty per cent and ninety per cent of the diesel fuel boiled off during distillation.

M. The report required by subsection L of this section shall be on a form prescribed by the director and shall contain a certification of truthfulness and accuracy of the data submitted and a statement of the supplier's consent permitting the department or its authorized agent to collect samples and access records as provided in rules adopted by the department. A corporate officer who is responsible for operations at the facility that produces or ships the final product shall sign the report.

N. A person shall label dispensers at which biodiesel is dispensed in such a manner as to notify other persons of the volume percentage of

biodiesel in the finished product and that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

O. A person shall label each dispenser at which ultra low sulfur diesel fuel is dispensed in a manner that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

P. A person shall label each dispenser at which low sulfur diesel fuel is dispensed in a manner that conforms with 40 Code of Federal Regulations sections 80.570, 80.571, 80.572, 80.573 and 80.574 to inform the customer of the sulfur content of the diesel fuel being dispensed.

Q. If any person transfers custody or title of a diesel fuel or distillate, except if the diesel fuel is dispensed into a motor vehicle or nonroad, locomotive or marine equipment, the transferor shall provide to the transferee product transfer documents that conform with 40 Code of Federal Regulations section 80.590.

R. If the transfer of a motor fuel is from a terminal, storage facility, or transmix facility, the product transfer documents shall contain the information prescribed in subsection Q of this section as well as the name and address of the final destination for the shipment, as prescribed by department rule, and must accompany the shipment to its final destination.

Sec. 10. Title 41, chapter 15, article 3, Arizona Revised Statutes, is amended by adding section 41-2083.01, to read:

41-2083.01. Area C; standards for motor fuel; exceptions

A. EXCEPT AS PROVIDED IN SUBSECTIONS C AND D OF THIS SECTION, AFTER MAY 31, 2008, A RETAIL SELLER OR FLEET OWNER SHALL NOT STORE, SELL OR EXPOSE OR OFFER FOR SALE IN AREA C AS DEFINED IN SECTION 41-2121 ANY MOTOR FUEL, KEROSENE, OIL OR OTHER LIQUID OR GASEOUS FUEL OR LUBRICATING OIL, LUBRICANT, MIXTURES OF LUBRICANTS OR OTHER SIMILAR PRODUCTS IF THE PRODUCT FAILS TO MEET THE STANDARDS SPECIFIED IN THIS SECTION AND IN THE RULES ADOPTED BY THE DIRECTOR.

B. A PERSON SHALL NOT MISREPRESENT THE NATURE, ORIGINATION, QUALITY, GRADE OR IDENTITY OF ANY PRODUCT SPECIFIED IN SUBSECTION A OF THIS SECTION OR REPRESENT THE NATURE, ORIGINATION, QUALITY, GRADE OR IDENTITY OF SUCH PRODUCT IN ANY MANNER CALCULATED OR TENDING TO MISLEAD OR IN ANY WAY DECEIVE.

C. AFTER CONSULTATION WITH THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY, THE STANDARDS AND TEST METHODS FOR MOTOR FUELS SHALL BE ESTABLISHED BY THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES BY RULE.

D. MAXIMUM VAPOR PRESSURE FOR GASOLINE THAT IS SUPPLIED OR SOLD BY ANY PERSON AND THAT IS INTENDED AS A FINAL PRODUCT FOR THE FUELING OF MOTOR VEHICLES IN AREA C AS DEFINED IN SECTION 41-2121 SHALL BE 7.0 POUNDS PER SQUARE INCH FROM AND AFTER MAY 31 THROUGH SEPTEMBER 30 OF EACH YEAR. FUEL USED IN MOTOR VEHICLES AT A MANUFACTURER'S PROVING GROUND OR A MOTOR VEHICLE RACING EVENT AS DEFINED BY SECTION 41-2121 IS EXEMPT FROM THIS SUBSECTION.

E. THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES IN CONSULTATION WITH THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY SHALL APPROVE ALTERNATE FUEL CONTROL MEASURES THAT ARE SUBMITTED BY MANUFACTURERS OR SUPPLIERS OF GASOLINE AND THAT THE DIRECTORS DETERMINE WILL RESULT IN MOTOR VEHICLE NON-METHANE HYDROCARBON EMISSIONS THAT ARE EQUAL TO OR LESS THAN THE EMISSIONS THAT RESULT UNDER COMPLIANCE WITH SUBSECTION D OF THIS SECTION. IN MAKING THIS DETERMINATION, THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES AND THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY SHALL COMPARE THE MOTOR VEHICLE NON-METHANE HYDROCARBON EMISSIONS OF THE ALTERNATE FUEL CONTROL MEASURE WITH THE MOTOR VEHICLE NON-METHANE HYDROCARBON EMISSIONS OF A FUEL THAT COMPLIES WITH THE MAXIMUM VAPOR PRESSURE STANDARD AS PRESCRIBED BY SUBSECTION D OF THIS SECTION.

F. ANY ALTERNATE FUEL CONTROL MEASURES THAT ARE APPROVED SHALL NOT INCREASE EMISSIONS OF NON-METHANE HYDROCARBONS, PARTICULATES, CARBON MONOXIDE OR OXIDES OF NITROGEN. ALTERNATE FUEL CONTROL MEASURES APPROVED PURSUANT TO SUBSECTION E OF THIS SECTION AND THIS SUBSECTION MAY BE USED BY ANY MANUFACTURER OR SUPPLIER OF GASOLINE UNLESS THE APPROVAL IS RESCINDED MORE THAN ONE HUNDRED EIGHTY DAYS BEFORE THE FIRST DAY OF A GASOLINE CONTROL PERIOD. MANUFACTURERS AND SUPPLIERS WHO USE AN APPROVED ALTERNATE FUEL CONTROL MEASURE SHALL ANNUALLY SUBMIT A COMPLIANCE PLAN TO THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES NO LATER THAN SIXTY DAYS BEFORE THE FIRST DAY OF A GASOLINE CONTROL PERIOD.

Sec. 11. Section 41-2121, Arizona Revised Statutes, is amended to read:

41-2121. Definitions

In this article, unless the context otherwise requires:

1. "Area A" has the same meaning prescribed in section 49-541.

2. "Area B" has the same meaning prescribed in section 49-541.

3. "AREA C" MEANS THAT PORTION OF PINAL COUNTY LYING WEST OF RANGE 11 EAST, EXCLUDING THAT PORTION OF THE COUNTY LYING WITHIN AREA A AS DEFINED IN SECTION 49-541 AND THAT PORTION OF THE COUNTY WITHIN THE JURISDICTION OF ANY INDIAN TRIBE, BAND, GROUP OR COMMUNITY THAT IS RECOGNIZED BY THE UNITED STATES SECRETARY OF THE INTERIOR AND THAT EXERCISES GOVERNMENTAL AUTHORITY WITHIN THE LIMITS OF ANY INDIAN RESERVATION UNDER THE JURISDICTION OF THE UNITED STATES GOVERNMENT, NOTWITHSTANDING THE ISSUANCE OF ANY PATENT AND INCLUDING RIGHTS-OF-WAY RUNNING THROUGH THE RESERVATION.

~~3.~~ 4. "Fleet owner" means a registered owner or lessee of at least twenty-five vehicles.

~~4.~~ 5. "Gasoline" means a volatile, highly flammable liquid mixture of hydrocarbons that does not contain more than five one-hundredths grams of lead for each United States gallon, that is produced, refined, manufactured, blended, distilled or compounded from petroleum, natural gas, oil, shale oils or coal and other flammable liquids free from undissolved water, sediment or suspended matter, with or without additives, and that is commonly used as a

fuel for spark ignition internal combustion engines. Gasoline does not include diesel fuel or the ethanol blend E85 as defined in ASTM D5798-99.

~~5.~~ 6. "Manufacturer's proving ground" means a facility whose sole purpose is to develop complete advanced vehicles for an automotive manufacturer.

~~6.~~ 7. "Motor vehicle racing event" means a race that uses unlicensed vehicles that are designed and manufactured specifically for racing purposes and that is conducted on a public or private racecourse for the entertainment of the general public. A motor vehicle racing event includes practice, qualifying and demonstration laps conducted as part of the activities related to a motor vehicle race.

~~7.~~ 8. "Oxygenate" means any oxygen-containing ashless, organic compound, including aliphatic alcohols and aliphatic ethers, that may be used as a fuel or as a gasoline blending component and that is approved as a blending agent under the provisions of a waiver issued by the United States environmental protection agency pursuant to 42 United States Code section 7545(f).

~~8.~~ 9. "Oxygenated fuel" means an unleaded motor fuel blend that consists primarily of gasoline and at least one and one-half per cent by weight of one or more oxygenates and that has been blended consistent with the provisions of a waiver issued by the United States environmental protection agency pursuant to 42 United States Code section 7545(f).

~~9.~~ 10. "Product transfer document" means any bill of lading, loading ticket, manifest, delivery receipt, invoice or other documentation used on any occasion when a person transfers custody or title of motor fuel other than when motor fuel is sold or dispensed at a service station or fleet vehicle fueling facility.

~~10.~~ 11. "Supplier" means any person who imports gasoline into a vehicle emissions control area by means of a pipeline or in truckload quantities for the person's own use within the vehicle emissions control area or any person who sells gasoline intended for ultimate consumption within a vehicle emissions control area, except that supplier does not mean a person with respect to gasoline supplied or sold by the person to another for resale to a retailer within a vehicle emissions control area or to a fleet owner for consumption within a vehicle emissions control area.

~~11.~~ 12. "Vehicle emissions control area" has the same meaning prescribed in section 49-541, except that such an area does not include a manufacturer's proving ground that is located in the vehicle emissions control area.

Sec. 12. Title 41, chapter 15, article 6, Arizona Revised Statutes, is amended by adding section 41-2124.01, to read:

41-2124.01. Area C; fuel reformulation; rules

A. FROM AND AFTER MAY 31, 2008 THROUGH SEPTEMBER 30, 2008 AND DURING THE PERIOD FROM AND AFTER MAY 31 THROUGH SEPTEMBER 30 OF EACH SUBSEQUENT YEAR, ALL GASOLINE PRODUCED AND SHIPPED TO OR WITHIN THIS STATE AND SOLD OR

OFFERED FOR SALE FOR USE IN MOTOR VEHICLES IN AREA C SHALL COMPLY WITH EITHER OF THE FOLLOWING FUEL REFORMULATION OPTIONS:

1. A GASOLINE THAT MEETS STANDARDS FOR FEDERAL PHASE II REFORMULATED GASOLINE, AS PROVIDED IN 40 CODE OF FEDERAL REGULATIONS SECTION 80.41, PARAGRAPHS (e) THROUGH (h), IN EFFECT ON JANUARY 1, 1999, EXCEPT THAT THE MINIMUM OXYGEN CONTENT STANDARD DOES NOT APPLY. THE GASOLINE SHALL ALSO MEET THE MAXIMUM VAPOR PRESSURE REQUIREMENTS IN SECTION 41-2083.01, SUBSECTION D.

2. CALIFORNIA PHASE 2 REFORMULATED GASOLINE, INCLUDING ALTERNATIVE FORMULATIONS ALLOWED BY THE PREDICTIVE MODEL, AS ADOPTED BY THE CALIFORNIA AIR RESOURCES BOARD PURSUANT TO CALIFORNIA CODE OF REGULATIONS TITLE 13, SECTIONS 2261 THROUGH 2262.7 AND 2265, IN EFFECT ON JANUARY 1, 1997, EXCEPT THAT THE MINIMUM OXYGEN CONTENT STANDARD DOES NOT APPLY. THE GASOLINE SHALL ALSO MEET THE MAXIMUM VAPOR PRESSURE REQUIREMENTS IN SECTION 41-2083.01, SUBSECTION D.

B. ANY REGISTERED SUPPLIER, AS DEFINED IN DEPARTMENT RULES, MAY PETITION THE DIRECTOR TO REQUEST THAT ALL REGISTERED SUPPLIERS BE ALLOWED TO SUPPLY GASOLINE IN AREA C THAT DOES NOT MEET THE STANDARDS IN SUBSECTION A OF THIS SECTION IF THE PETITIONER DEMONSTRATES THAT A SHORTAGE IN THE SUPPLY OF GASOLINE MEETING THE STANDARDS IN SUBSECTION A OF THIS SECTION IS IMMINENT.

C. A PETITION UNDER SUBSECTION B OF THIS SECTION SHALL:

1. IDENTIFY SPECIFIC SUPPLY CONDITIONS THAT WILL RESULT IN A SHORTAGE OF GASOLINE MEETING THE STANDARDS IN SUBSECTION A OF THIS SECTION.

2. IDENTIFY THE FORMULATION OF GASOLINE THAT WILL BE SOLD IN AREA C IN LIEU OF GASOLINE MEETING THE STANDARDS IN SUBSECTION A OF THIS SECTION.

3. SPECIFY A TIME PERIOD FOR COMPLIANCE WITH THE STANDARDS OF SUBSECTION A OF THIS SECTION NOT TO EXCEED SIXTY DAYS.

D. THE DIRECTOR SHALL EITHER GRANT OR DENY A PETITION UNDER SUBSECTION B OF THIS SECTION IN WRITING WITHIN SEVEN DAYS OF ITS RECEIPT. ANY DECISION BY THE DIRECTOR TO GRANT THE PETITION SHALL BE EQUALLY APPLICABLE TO ALL REGISTERED SUPPLIERS AND SHALL NOT BE SELECTIVELY APPLIED TO ANY SINGLE REGISTERED SUPPLIER. THE PETITION MAY BE GRANTED ONLY IF THE DIRECTOR VERIFIES THAT THE BASIS FOR REQUESTING THE PETITION IS FACTUAL.

E. THE DIRECTOR MAY REAUTHORIZE A PETITION GRANTED UNDER SUBSECTION B OF THIS SECTION IF THE PETITIONER DEMONSTRATES THAT THE CONDITIONS IDENTIFIED IN THE PETITION HAVE CONTINUED. THE REAUTHORIZATION OF A PETITION SHALL NOT EXCEED THIRTY DAYS.

F. THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES SHALL CONSULT WITH THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY BEFORE GRANTING, REAUTHORIZING OR DENYING ANY PETITION UNDER SUBSECTION B OF THIS SECTION.

G. THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY IN CONSULTATION WITH THE DIRECTOR OF THE DEPARTMENT OF WEIGHTS AND MEASURES SHALL ADOPT BY RULE:

1. REQUIREMENTS TO IMPLEMENT SUBSECTIONS A, B AND C OF THIS SECTION.

2. REQUIREMENTS FOR RECORD KEEPING, REPORTING AND ANALYTICAL METHODS FOR FUEL PROVIDERS TO DEMONSTRATE COMPLIANCE WITH SUBSECTION A OF THIS SECTION.

H. THIS SECTION DOES NOT APPLY TO FUEL SOLD FOR USE AT A MOTOR VEHICLE MANUFACTURER PROVING GROUND OR AT A MOTOR VEHICLE RACING EVENT.

Sec. 13. Section 41-2124.01, Arizona Revised Statutes, as added by section 12 of this act, is amended to read:

41-2124.01. Area C; fuel reformulation; rules

A. From and after May 31, 2008 through September 30, 2008 and during the period from and after May 31 through September 30 of each subsequent year, all gasoline produced and shipped to or within this state and sold or offered for sale for use in motor vehicles in area C shall comply with either of the following fuel reformulation options:

1. A gasoline that meets standards for federal phase II reformulated gasoline, as provided in 40 Code of Federal Regulations section 80.41, paragraphs (e) through (h), in effect on January 1, 1999, except that the minimum oxygen content standard does not apply. The gasoline shall also meet the maximum vapor pressure requirements in section 41-2083.01, subsection D.

2. California phase ~~2~~ 3 reformulated gasoline, including alternative formulations allowed by the predictive model, as adopted by the California air resources board pursuant to California Code of Regulations title 13, sections 2261 through ~~2262.7 and~~ 2263, 2265 AND 2266.5, in effect on ~~January 1, 1997~~ MAY 1, 2003, ~~except that the minimum oxygen content standard does not apply. The gasoline shall also meet the maximum~~ INCLUDING vapor pressure requirements ~~in section 41-2083.01, subsection D~~ CONTAINED IN SECTION 2262.4.

B. Any registered supplier, as defined in department rules, may petition the director to request that all registered suppliers be allowed to supply gasoline in area C that does not meet the standards in subsection A of this section if the petitioner demonstrates that a shortage in the supply of gasoline meeting the standards in subsection A of this section is imminent.

C. A petition under subsection B of this section shall:

1. Identify specific supply conditions that will result in a shortage of gasoline meeting the standards in subsection A of this section.

2. Identify the formulation of gasoline that will be sold in area C in lieu of gasoline meeting the standards in subsection A of this section.

3. Specify a time period for compliance with the standards of subsection A of this section not to exceed sixty days.

D. The director shall either grant or deny a petition under subsection B of this section in writing within seven days of its receipt. Any decision by the director to grant the petition shall be equally applicable to all registered suppliers and shall not be selectively applied to any single registered supplier. The petition may be granted only if the director verifies that the basis for requesting the petition is factual.

E. The director may reauthorize a petition granted under subsection G of this section if the petitioner demonstrates that the conditions identified

in the petition have continued. The reauthorization of a petition shall not exceed thirty days.

F. The director of the department of weights and measures shall consult with the director of the department of environmental quality before granting, reauthorizing or denying any petition under subsection B of this section.

G. The director of the department of environmental quality in consultation with the director of the department of weights and measures shall adopt by rule:

1. Requirements to implement subsections A, B and C of this section.

2. Requirements for record keeping, reporting and analytical methods for fuel providers to demonstrate compliance with subsection A of this section.

H. This section does not apply to fuel sold for use at a motor vehicle manufacturer proving ground or at a motor vehicle racing event.

Sec. 14. Section 49-457, Arizona Revised Statutes, is amended to read:

49-457. Agricultural best management practices committee; members; powers; permits; definitions

A. A best management practices committee for regulated agricultural activities is established.

B. The committee shall consist of:

1. The director OF ENVIRONMENTAL QUALITY or the director's designee.

2. The director of the ARIZONA department of agriculture or the director's designee.

3. The dean of the college of agriculture of the university of Arizona or the dean's designee.

4. The state director of the United States natural resources conservation service or the director's designee.

5. One person actively engaged in the production of citrus.

6. One person actively engaged in the production of vegetables.

7. One person actively engaged in the production of cotton.

8. One person actively engaged in the production of alfalfa.

9. One person actively engaged in the production of grain.

10. One soil taxonomist from the university of Arizona college of agriculture.

C. The governor shall appoint the members designated pursuant to subsection ~~A~~ B, paragraphs 5 through 10 of this section for a term of six years. Members may be reappointed. Members are not entitled to compensation for their services but are entitled to receive reimbursement of expenses pursuant to ~~section 38-611, subsection D~~ TITLE 38, CHAPTER 4, ARTICLE 2.

D. The committee shall elect a chairman from the appointed members to serve a two year term.

E. The committee shall meet at the call of the chairman or at the request of a majority of the appointed members.

F. The department of environmental quality, the ARIZONA department of agriculture and the college of agriculture of the university of Arizona shall cooperate with and provide technical assistance and any necessary information to the committee. The department of environmental quality shall provide the necessary staff support and meeting facilities for the committee.

G. Notwithstanding subsections I, J and K of this section, a person engaged in a regulated agricultural activity on ~~the effective date of this section~~ AUGUST 21, 1998 shall comply with the general permit as provided in subsection H of this section by December 31, 2001. A person who commences a regulated agricultural activity after December 31, 2000~~,~~ shall comply with the general permit within eighteen months of commencing the activity.

H. By June 10, 2000, the committee shall adopt, by rule, an agricultural general permit specifying best management practices for regulated agricultural activities to reduce PM-10 particulate emissions. A person subject to an agricultural general permit pursuant to this section is not subject to a permit issued pursuant to section 49-426 except as provided in subsection K of this section. The committee shall adopt by rule a list of best management practices, at least ~~one~~ TWO of which shall be used to demonstrate compliance with applicable provisions of the general permit no later than December 31, ~~2001~~ 2007. Best management practices may vary within the ~~Maricopa PM-10 particulate nonattainment~~ REGULATED area, according to regional or geographical conditions or cropping patterns. The director shall submit the rule to the United States environmental protection agency as a revision to the applicable implementation plan ~~within sixty days of adoption~~ NO LATER THAN DECEMBER 31, 2007.

I. If the director determines that a person engaged in a regulated activity is not in compliance with the general permit, and that person has not previously been subject to a compliance order issued pursuant to this section, the director may serve upon the person by certified mail an order requiring compliance with the general permit and notifying the person of the opportunity for a hearing pursuant to title 41, chapter 6, article 10. The order shall state with reasonable particularity the nature of the noncompliance and shall specify that the person has a period that the director determines is reasonable, but is not less than six months, to submit a plan to the supervisors of the natural resource conservation district in which the person engages in the regulated activity that specifies the best management practices from among those adopted in rule pursuant to subsection H of this section that the person will use to comply with the general permit.

J. If the director determines that a person engaged in a regulated activity is not in compliance with the general permit, and that person has previously submitted a plan pursuant to subsection I of this section, the director may serve upon the person by certified mail an order requiring compliance with the general permit and notifying the person of the opportunity for a hearing pursuant to title 41, chapter 6, article 10. The order shall state with reasonable particularity the nature of the

noncompliance and shall specify that the person has a period that the director determines is reasonable, but is not less than six months, to submit a plan to the department that specifies the best management practices from among those adopted in rule pursuant to subsection H of this section that the person will use to comply with the general permit.

K. If a person fails to comply with the plan submitted pursuant to subsection J of this section, the director may revoke the agricultural general permit for that person and ~~to~~ require that the person obtain an individual permit pursuant to section 49-426. A revocation becomes effective after the director has provided the person with notice and an opportunity for a hearing pursuant to title 41, chapter 6, article 10.

L. The committee may periodically reexamine, evaluate and modify best management practices. Any approved modifications shall be submitted to the United States environmental protection agency as a revision to the applicable implementation plan.

M. The committee shall develop and commence an education program by June 10, 2000. The education program shall be conducted by the director or the director's designee or designees.

N. In this section, unless the context otherwise requires:

1. "Agricultural general permit" means best management practices that:

(a) Reduce PM-10 particulate emissions from tillage practices and from harvesting on a commercial farm.

(b) Reduce PM-10 particulate emissions from those areas of a commercial farm that are not normally in crop production.

(c) Reduce PM-10 particulate emissions from those areas of a commercial farm that are normally in crop production including prior to plant emergence and when the land is not in crop production.

2. "Applicable implementation plan" means that term as defined in 42 United States Code SECTION 7601(q).

3. "Best management practices" means techniques THAT ARE verified by scientific research~~,~~ AND that on a case by case basis are practical, economically feasible and effective in reducing PM-10 particulate emissions from a regulated agricultural activity.

4. "Maricopa PM-10 particulate nonattainment area" means the Phoenix planning area as set forth in 40 Code of Federal Regulations ~~part~~ SECTION 81.303.

5. "Regulated agricultural activities" means commercial farming practices that may produce PM-10 particulate emissions within the ~~Maricopa PM-10 particulate nonattainment area~~ REGULATED AREA.

6. "REGULATED AREA" MEANS THE MARICOPA PM-10 NONATTAINMENT AREA AND ANY PORTION OF AREA A THAT IS LOCATED IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS.

Sec. 15. Title 49, chapter 3, article 2, Arizona Revised Statutes, is amended by adding sections 49-457.01, 49-457.02, 49-457.03 and 49-457.04, to read:

49-457.01. Leaf blower use restrictions and training; leaf blower equipment sellers; informational material; outreach; applicability

A. THIS SECTION APPLIES IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY WITHIN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA.

B. AFTER MARCH 31, 2008, NO PERSON MAY USE A LEAF BLOWER TO BLOW LANDSCAPE DEBRIS INTO PUBLIC ROADWAYS.

C. AFTER MARCH 31, 2008, NO PERSON MAY OPERATE A LEAF BLOWER EXCEPT ON SURFACES THAT HAVE BEEN STABILIZED WITH ASPHALTIC CONCRETE, CEMENT CONCRETE, HARDSCAPE, PENETRATION TREATMENT OF BITUMINOUS MATERIAL AND SEAL COAT OF BITUMINOUS BINDER AND A MINERAL AGGREGATE, DECOMPOSED GRANITE COVER, CRUSHED GRANITE COVER, AGGREGATE COVER, GRAVEL COVER, OR GRASS OR OTHER CONTINUOUS VEGETATIVE COVER, OR ANY COMBINATION OF THOSE STABILIZERS.

D. AT LEAST ONCE EVERY THREE YEARS, ANY PERSON OPERATING A LEAF BLOWER FOR REMUNERATION SHALL SUCCESSFULLY COMPLETE TRAINING APPROVED BY THE DEPARTMENT ON HOW TO OPERATE A LEAF BLOWER IN A MANNER DESIGNED TO MINIMIZE THE GENERATION OF FUGITIVE DUST EMISSIONS. ANY PERSON WHO IS REQUIRED TO BE TRAINED UNDER THIS SUBSECTION SHALL COMPLETE INITIAL TRAINING NO LATER THAN DECEMBER 31, 2008.

E. ANY PERSON WHO RENTS OR SELLS IN THE NORMAL COURSE OF BUSINESS EQUIPMENT THAT IS USED FOR BLOWING LANDSCAPE DEBRIS SHALL PROVIDE TO THE BUYER OR RENTER OF THE EQUIPMENT PRINTED MATERIALS THAT ARE APPROVED BY THE DEPARTMENT PURSUANT TO THIS SECTION.

F. THE DEPARTMENT SHALL PRODUCE PRINTED MATERIALS AND DISTRIBUTE THOSE MATERIALS TO PERSONS WHO SELL OR RENT EQUIPMENT USED FOR BLOWING LANDSCAPE DEBRIS. THE PRINTED MATERIALS SHALL BE DESIGNED TO EDUCATE AND INFORM THE USER OF THE EQUIPMENT ON THE SAFE AND EFFICIENT USE OF THE EQUIPMENT, INCLUDING METHODS FOR REDUCING THE GENERATION OF DUST, AND SHALL INCLUDE INFORMATION REGARDING DUST CONTROL ORDINANCES AND RESTRICTIONS THAT MAY BE APPLICABLE.

G. THIS SECTION DOES NOT APPLY TO ANY SITE THAT HAS A PERMIT ISSUED BY A CONTROL OFFICER AS DEFINED IN SECTION 49-471 FOR THE CONTROL OF FUGITIVE DUST FROM DUST GENERATING OPERATIONS.

49-457.02. Dust-free developments program; certification; seal

A. THE DEPARTMENT SHALL ESTABLISH THE DUST-FREE DEVELOPMENTS PROGRAM TO ENCOURAGE AND RECOGNIZE PERSONS AND ENTITIES THAT DEMONSTRATE EXCEPTIONAL COMMITMENT TO THE REDUCTION OF AIRBORNE DUST IN A COUNTY WITH A POPULATION OF MORE THAN TWO MILLION PERSONS AND IN THE PM-10 NONATTAINMENT AREA THAT CONTAINS THE CITY OF APACHE JUNCTION. THE PROGRAM SHALL INCLUDE A VOLUNTARY CERTIFICATION PROCESS BASED ON CRITERIA DEVELOPED BY THE DEPARTMENT.

B. ANY PERSON OR ENTITY MAY APPLY FOR CERTIFICATION UNDER THE PROGRAM, AND IF APPROVED, MAY LAWFULLY USE A CERTIFICATION, SEAL, LOGO OR OTHER SIMILAR INDICATOR ESTABLISHED BY THE DEPARTMENT. A PERSON OR ENTITY THAT IS CERTIFIED UNDER THE PROGRAM MAY USE THE CERTIFICATION FOR PROMOTIONAL, CIVIC, PUBLIC RELATIONS OR PUBLIC INVOLVEMENT PURPOSES.

C. NOTWITHSTANDING SECTION 41-3102, THIS PROGRAM DOES NOT INCLUDE A SPECIFIC EXPIRATION DATE.

49-457.03. Off-road vehicles; pollution advisory days; applicability; penalties

A. IN AREA A, AS DEFINED IN SECTION 49-541, A PERSON SHALL NOT OPERATE AN OFF-HIGHWAY VEHICLE, AN ALL-TERRAIN VEHICLE OR AN OFF-ROAD RECREATIONAL MOTOR VEHICLE ON AN UNPAVED SURFACE THAT IS NOT A PUBLIC OR PRIVATE ROAD, STREET OR LAWFUL EASEMENT DURING ANY HIGH POLLUTION ADVISORY DAY FORECAST FOR PARTICULATE MATTER BY THE DEPARTMENT.

B. THIS SECTION DOES NOT APPLY TO:

1. AN EVENT THAT IS INTENDED FOR OFF-HIGHWAY VEHICLES, ALL-TERRAIN VEHICLES OR OFF-ROAD RECREATIONAL MOTOR VEHICLES AND THAT IS ENDORSED, AUTHORIZED, PERMITTED OR SPONSORED BY A PUBLIC AGENCY, THAT OCCURS ON A DESIGNATED ROUTE OR AREA AND THAT INCLUDES DUST ABATEMENT MEASURES AT ALL STAGING AREAS, PARKING AREAS AND ENTRANCES.

2. AN EVENT THAT OCCURS AT A FACILITY FOR WHICH AN ADMISSION OR USER FEE IS CHARGED AND THAT INCLUDES DUST ABATEMENT MEASURES.

3. A CLOSED COURSE THAT IS MAINTAINED WITH DUST ABATEMENT MEASURES.

4. AN OFF-HIGHWAY VEHICLE, ALL-TERRAIN VEHICLE OR OFF-ROAD RECREATIONAL MOTOR VEHICLE USED IN THE NORMAL COURSE OF BUSINESS OR THE NORMAL COURSE OF GOVERNMENT OPERATIONS.

5. GOLF CARTS THAT ARE USED AS PART OF A PRIVATE OR PUBLIC GOLF COURSE OPERATION.

C. A PERSON WHO VIOLATES THIS SECTION IS SUBJECT TO:

1. A WARNING FOR THE FIRST VIOLATION.

2. THE IMPOSITION OF A CIVIL PENALTY OF FIFTY DOLLARS FOR THE SECOND VIOLATION.

3. THE IMPOSITION OF A CIVIL PENALTY OF ONE HUNDRED DOLLARS FOR THE THIRD VIOLATION.

4. THE IMPOSITION OF A CIVIL PENALTY OF TWO HUNDRED FIFTY DOLLARS FOR THE FOURTH OR ANY SUBSEQUENT VIOLATION.

D. FOR VIOLATIONS OF THIS SECTION, THE CONTROL OFFICER OR OTHER ENFORCEMENT OFFICER SHALL USE A UNIFORM CIVIL TICKET AND COMPLAINT SUBSTANTIALLY SIMILAR TO A UNIFORM TRAFFIC TICKET AND COMPLAINT PRESCRIBED BY THE RULES OF PROCEDURE IN CIVIL TRAFFIC CASES ADOPTED BY THE SUPREME COURT. THE CONTROL OFFICER OR OTHER ENFORCEMENT OFFICER MAY ISSUE CITATIONS TO PERSONS IN VIOLATION OF THIS SECTION.

49-457.04. Off-highway vehicle and all-terrain vehicle dealers; informational material; outreach; applicability

A. ANY PERSON WHO RENTS OR SELLS IN THE NORMAL COURSE OF BUSINESS OFF-HIGHWAY VEHICLES, ALL-TERRAIN VEHICLES OR OFF-ROAD RECREATIONAL MOTOR VEHICLES, OTHER THAN GOLF CARTS SOLD TO PUBLIC OR PRIVATE GOLF COURSES, SHALL PROVIDE TO THE BUYER OR RENTER OF THE VEHICLE PRINTED MATERIALS THAT ARE APPROVED BY THE DEPARTMENT PURSUANT TO THIS SECTION.

B. THE DEPARTMENT SHALL PRODUCE PRINTED MATERIALS AND DISTRIBUTE THOSE MATERIALS TO PERSONS WHO SELL OR RENT OFF-HIGHWAY VEHICLES, ALL-TERRAIN VEHICLES OR OFF-ROAD RECREATIONAL MOTOR VEHICLES. THE PRINTED MATERIALS SHALL BE DESIGNED TO EDUCATE AND INFORM THE USER OF THE VEHICLE ON METHODS FOR REDUCING THE GENERATION OF DUST AND SHALL INCLUDE INFORMATION REGARDING DUST CONTROL ORDINANCES AND RESTRICTIONS THAT MAY BE APPLICABLE. THE DEPARTMENT SHALL MAKE AVAILABLE ON THE DEPARTMENT'S WEBSITE THE PRINTED MATERIALS IN A FORMAT THAT IS ACCESSIBLE TO THE PUBLIC.

C. THIS SECTION APPLIES IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY IN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA.

Sec. 16. Section 49-474.01, Arizona Revised Statutes, is amended to read:

49-474.01. Additional board duties in vehicle emissions control areas; definitions

A. The board of supervisors of a county which contains any portion of area A or area B as defined in section 49-541 shall:

1. In area A, in consultation with the designated metropolitan planning organization, synchronize traffic control signals on all existing and new roadways, within the unincorporated area and at jurisdictional boundaries, which have a traffic flow exceeding fifteen thousand motor vehicles per day.

2. In area A, beginning ~~on~~ January 1, 2000, develop and implement plans to stabilize targeted unpaved roads, alleys and unpaved shoulders on targeted arterials. The plans shall address the performance goals, the criteria for targeting roads, alleys and arterials, a schedule for implementation, funding options and reporting requirements.

3. In area A, acquire or utilize vacuum systems or other dust removal technology to reduce the particulates attributable to conventional crack sealing operations as existing equipment is retired.

4. IN AREA A, BEGINNING JANUARY 1, 2008, DEVELOP AND IMPLEMENT PLANS TO STABILIZE TARGETED UNPAVED ROADS, ALLEYS AND UNPAVED SHOULDERS ON TARGETED ARTERIALS. THE PLANS SHALL ADDRESS THE PERFORMANCE GOALS, THE CRITERIA FOR TARGETING THE ROADS, ALLEYS AND SHOULDERS, A SCHEDULE FOR IMPLEMENTATION, FUNDING OPTIONS AND REPORTING REQUIREMENTS. PRIORITY SHALL BE GIVEN TO THE FOLLOWING:

(a) UNPAVED ROADS WITH MORE THAN ONE HUNDRED AVERAGE DAILY TRIPS.

(b) UNPAVED SHOULDERS ON ARTERIAL ROADS AND OTHER ROAD SEGMENTS WHERE VEHICLE USE ON UNPAVED SHOULDERS IS EVIDENT OR ANTICIPATED DUE TO PROJECTED TRAFFIC VOLUME.

5. IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY IN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AND, NO LATER THAN OCTOBER 1, 2008, COMMENCE ENFORCEMENT OF THOSE CODES OR ORDINANCES AS NECESSARY TO REQUIRE THAT PARKING, MANEUVERING, INGRESS AND EGRESS AREAS AT DEVELOPMENTS OTHER THAN RESIDENTIAL BUILDINGS WITH FOUR OR FEWER UNITS ARE MAINTAINED WITH ONE OR MORE OF THE FOLLOWING DUSTPROOF PAVING METHODS:

(a) ASPHALTIC CONCRETE.

(b) CEMENT CONCRETE.

(c) PENETRATION TREATMENT OF BITUMINOUS MATERIAL AND SEAL COAT OF BITUMINOUS BINDER AND A MINERAL AGGREGATE.

(d) A STABILIZATION METHOD APPROVED BY THE COUNTY.

6. IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY IN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AND, NO LATER THAN OCTOBER 1, 2009, COMMENCE ENFORCEMENT OF THOSE CODES OR ORDINANCES AS NECESSARY TO REQUIRE THAT PARKING, MANEUVERING, INGRESS AND EGRESS AREAS THREE THOUSAND SQUARE FEET OR MORE IN SIZE AT RESIDENTIAL BUILDINGS WITH FOUR OR FEWER UNITS ARE MAINTAINED WITH A PAVING OR STABILIZATION METHOD AUTHORIZED BY THE COUNTY BY CODE, ORDINANCE OR PERMIT.

7. IN AREA A, NO LATER THAN MARCH 31, 2008, ADOPT OR AMEND CODES OR ORDINANCES AS NECESSARY TO RESTRICT VEHICLE PARKING AND USE ON UNPAVED OR UNSTABILIZED VACANT LOTS.

8. IN AREA A, REQUIRE THAT NEW OR RENEWED CONTRACTS FOR STREET SWEEPING ON CITY STREETS MUST BE CONDUCTED WITH STREET SWEEPERS THAT MEET THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1186 STREET SWEEPER CERTIFICATION SPECIFICATIONS FOR PICK UP EFFICIENCY AND PM-10 EMISSIONS IN EFFECT ON JANUARY 1, 2007.

~~4.~~ 9. In area B, synchronize traffic control signals on roadways with a traffic flow exceeding fifteen thousand motor vehicles per day.

~~5.~~ 10. Implement adjusted work hours for at least eighty-five per cent of county employees in area A each year beginning October 1 and ending April 1 in order to reduce the level of carbon monoxide concentrations caused by vehicular travel.

11. IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY WITHIN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA

THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA, NO LATER THAN MARCH 31, 2008, ADOPT RULE PROVISIONS, AND, NO LATER THAN OCTOBER 1, 2008, COMMENCE ENFORCEMENT OF THOSE RULE PROVISIONS REGARDING THE STABILIZATION OF DISTURBED SURFACES OF VACANT LOTS THAT INCLUDE THE FOLLOWING:

(a) REASONABLE WRITTEN NOTICE TO THE OWNER OR THE OWNER'S AUTHORIZED AGENT OR THE OWNER'S STATUTORY AGENT THAT THE UNPAVED DISTURBED SURFACE OF A VACANT LOT IS REQUIRED TO BE STABILIZED. THE NOTICE SHALL BE GIVEN NOT LESS THAN THIRTY DAYS BEFORE THE DAY SET FOR COMPLIANCE AND SHALL INCLUDE A LEGAL DESCRIPTION OF THE PROPERTY AND THE ESTIMATED COST TO THE COUNTY FOR THE STABILIZATION IF THE OWNER DOES NOT COMPLY. THE NOTICE SHALL BE EITHER PERSONALLY SERVED OR MAILED BY CERTIFIED MAIL TO THE OWNER'S STATUTORY AGENT, TO THE OWNER AT THE OWNER'S LAST KNOWN ADDRESS OR TO THE ADDRESS TO WHICH THE TAX BILL FOR THE PROPERTY WAS LAST MAILED.

(b) AUTHORITY FOR THE COUNTY TO ENTER THE LOT TO STABILIZE THE DISTURBED SURFACE AT THE EXPENSE OF THE OWNER IF THE VACANT LOT HAS NOT BEEN STABILIZED BY THE DAY SET FOR COMPLIANCE.

(c) METHODS FOR STABILIZATION OF THE DISTURBED SURFACE OF THE VACANT LOT, THE ACTUAL COST OF STABILIZATION AND THE FINE THAT MAY BE IMPOSED FOR A VIOLATION OF THIS SECTION.

B. FOR THE PURPOSES OF SUBSECTION A, PARAGRAPH 11 OF THIS SECTION:

1. "DISTURBED SURFACE" MEANS A PORTION OF THE EARTH'S SURFACE OR MATERIAL PLACED ON THE EARTH'S SURFACE THAT HAS BEEN PHYSICALLY MOVED, UNCOVERED, DESTABILIZED OR OTHERWISE MODIFIED FROM ITS UNDISTURBED NATIVE CONDITION IF THE POTENTIAL FOR THE EMISSION OF FUGITIVE DUST IS INCREASED BY THE MOVEMENT, DESTABILIZATION OR MODIFICATION.

2. VACANT LOTS DO NOT INCLUDE ANY SITE OF DISTURBED SURFACE AREA THAT IS SUBJECT TO A PERMIT ISSUED BY A CONTROL OFFICER THAT REQUIRES CONTROL OF PM-10 EMISSIONS FROM DUST GENERATING OPERATIONS.

~~B.~~ C. The board of supervisors of a county that contains any portion of area A as defined in section 49-541 shall make and enforce ordinances consistent with section 49-588 to reduce or encourage the reduction of the commuter use of motor vehicles by employees of the county and employees whose place of employment is within area A.

~~C.~~ D. The board of supervisors in a county that contains any portion of area A shall develop and implement a vehicle fleet plan for the purpose of encouraging and progressively increasing the use of alternative fuels and clean burning fuels in county owned vehicles operating in area A.

~~D.~~ E. The plan shall include a timetable for increasing the use of alternative fuels and clean burning fuels in fleet vehicles either through purchase or conversion. The timetable shall reflect the following schedule and percentage of vehicles that operate on alternative fuels or clean burning fuels:

1. At least eighteen per cent of the total fleet by December 31, 1995.

2. At least twenty-five per cent of the total fleet by December 31, 1996.

3. At least fifty per cent of the total fleet by December 31, 1998.

4. At least seventy-five per cent of the total fleet by December 31, 2000 and each year thereafter.

~~E.~~ F. The requirements of subsections ~~C~~ D and ~~D~~ E of this section may be waived on receipt of certification supported by evidence acceptable to the department that the county is unable to acquire or be provided equipment or refueling facilities necessary to operate vehicles using alternative fuels or clean burning fuels at a projected cost that is reasonably expected to result in net costs of no greater than ten per cent more than the net costs associated with the continued use of conventional gasoline or diesel fuels measured over the expected useful life of the equipment or facilities supplied. Applications for waivers shall be filed with the department pursuant to section 49-412. An entity that receives a waiver pursuant to this section shall retrofit fleet heavy-duty diesel vehicles with a gross vehicle weight of eight thousand five hundred pounds or more, that were manufactured in or before model year 1993 and that are the subject of the waiver with a technology that is effective at reducing particulate emissions at least twenty-five per cent or more and that has been approved by the United States environmental protection agency pursuant to the urban bus engine retrofit/rebuild program. The entity shall comply with the implementation schedule pursuant to section 49-555.

~~F.~~ G. If the requirements of subsections ~~C~~ D and ~~D~~ E of this section are met by the use of clean burning fuel, vehicle equivalents under those requirements shall be calculated as follows:

1. One vehicle equivalent for every four hundred fifty gallons of neat biodiesel or two thousand two hundred fifty gallons of a diesel fuel substitute prescribed in section 1-215, paragraph 7, subdivision (b).

2. One vehicle equivalent for every five hundred thirty gallons of the fuel prescribed in section 1-215, paragraph 7, subdivision (d).

H. SUBSECTION A, PARAGRAPHS 5, 6 AND 7 OF THIS SECTION DO NOT APPLY TO ANY SITE THAT HAS A PERMIT ISSUED BY A CONTROL OFFICER AS DEFINED IN SECTION 49-471 FOR THE CONTROL OF FUGITIVE DUST FROM DUST GENERATING OPERATIONS.

~~G.~~ I. For the purposes of this section, "alternative fuel" and "clean burning fuel" have the same meanings prescribed in section 1-215.

Sec. 17. Title 49, chapter 3, article 3, Arizona Revised Statutes, is amended by adding sections 49-474.05, 49-474.06 and 49-474.07, to read:

49-474.05. Dust control; training; site coordinators

A. THIS SECTION APPLIES IN A COUNTY WITH A POPULATION OF TWO MILLION OR MORE PERSONS OR ANY PORTION OF A COUNTY IN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA.

B. NO LATER THAN JANUARY 1, 2008, THE CONTROL OFFICER SHALL DEVELOP AND IMPLEMENT BASIC AND COMPREHENSIVE TRAINING PROGRAMS FOR THE SUPPRESSION OF PM-10 EMISSIONS FROM SOURCES OF PM-10 THAT ARE SUBJECT TO A PERMIT ISSUED BY A CONTROL OFFICER THAT REQUIRES CONTROL OF PM-10 EMISSIONS FROM DUST

GENERATING OPERATIONS. THE CONTROL OFFICER MAY APPROVE TRAINING DEVELOPED AND PROVIDED BY A THIRD PARTY AND THE BOARD OF SUPERVISORS MAY ADOPT RULES PRESCRIBING STANDARDS FOR DUST CONTROL TRAINING.

C. AT LEAST ONCE EVERY THREE YEARS, THE FOLLOWING PERSONS ARE REQUIRED TO SUCCESSFULLY COMPLETE BASIC DUST CONTROL TRAINING:

1. THE SITE SUPERINTENDENT OR OTHER DESIGNATED ON-SITE REPRESENTATIVE OF THE PERMIT HOLDER IF PRESENT AT A SITE THAT HAS MORE THAN ONE ACRE OF DISTURBED SURFACE AREA THAT IS SUBJECT TO A PERMIT ISSUED BY A CONTROL OFFICER REQUIRING CONTROL OF PM-10 EMISSIONS FROM DUST GENERATING OPERATIONS.

2. WATER TRUCK AND WATER PULL DRIVERS.

D. PERSONS WHO ARE REQUIRED TO BE TRAINED UNDER THIS SECTION SHALL COMPLETE THE TRAINING NO LATER THAN DECEMBER 31, 2008. ALL PERSONS WHO HAVE SUCCESSFULLY COMPLETED TRAINING DURING THE 2006 AND 2007 CALENDAR YEARS ARE DEEMED TO HAVE SATISFIED THIS REQUIREMENT IF THE TRAINING PROGRAM COMPLETED WAS CONDUCTED OR APPROVED BY A COUNTY AIR POLLUTION CONTROL OFFICER. COMPLETION OF THE TRAINING REQUIRED UNDER SUBSECTION G SATISFIES THE REQUIREMENTS OF THIS SUBSECTION.

E. NO LATER THAN JUNE 30, 2008, THE PERMITTEE FOR ANY SITE OF FIVE ACRES OR MORE OF DISTURBED SURFACE AREA SUBJECT TO A PERMIT ISSUED BY A CONTROL OFFICER REQUIRING CONTROL OF PM-10 EMISSIONS FROM DUST GENERATING OPERATIONS SHALL HAVE ON SITE AT LEAST ONE DUST CONTROL COORDINATOR TRAINED IN ACCORDANCE WITH THIS SECTION AT ALL TIMES DURING PRIMARY DUST GENERATING OPERATIONS RELATED TO THE PURPOSES FOR WHICH THE DUST CONTROL PERMIT WAS OBTAINED.

F. A DUST CONTROL COORDINATOR HAS FULL AUTHORITY TO ENSURE THAT DUST CONTROL MEASURES ARE IMPLEMENTED ON SITE, INCLUDING CONDUCTING INSPECTIONS, DEPLOYMENT OF DUST SUPPRESSION RESOURCES AND MODIFICATION OR SHUTDOWN OF ACTIVITIES AS NEEDED TO CONTROL DUST. THE DUST CONTROL COORDINATOR SHALL BE RESPONSIBLE FOR MANAGING DUST PREVENTION AND DUST CONTROL ON THE SITE.

G. AT LEAST ONCE EVERY THREE YEARS, THE DUST CONTROL COORDINATOR SHALL SUCCESSFULLY COMPLETE A COMPREHENSIVE DUST CONTROL CLASS CONDUCTED OR APPROVED UNDER SUBSECTION A BY THE COUNTY AIR POLLUTION CONTROL OFFICER WITH JURISDICTION OVER THE SITE. THE DUST CONTROL COORDINATOR SHALL HAVE A VALID DUST TRAINING CERTIFICATION IDENTIFICATION CARD READILY ACCESSIBLE ON SITE WHILE ACTING AS A DUST CONTROL COORDINATOR. ALL PERSONS HAVING SUCCESSFULLY COMPLETED TRAINING DURING THE 2006 AND 2007 CALENDAR YEARS ARE DEEMED TO HAVE SATISFIED THIS REQUIREMENT IF THE TRAINING PROGRAM COMPLETED WAS CONDUCTED OR APPROVED BY A COUNTY AIR POLLUTION CONTROL OFFICER.

H. SUBSECTIONS C AND D DO NOT APPLY WHEN ON-SITE DUST GENERATING OPERATIONS ARE CONDUCTED BY A PERMITTEE WHO IS REQUIRED TO OBTAIN A SINGLE PERMIT FOR MULTIPLE NONCONTIGUOUS SITES THAT IS ISSUED BY A CONTROL OFFICER AND THAT REQUIRES CONTROL OF PM-10 EMISSIONS.

I. THE REQUIREMENTS OF SUBSECTIONS E AND F LAPSE IF ALL OF THE FOLLOWING APPLY:

1. THE AREA OF THE DISTURBED SURFACE AREA IS LESS THAN FIVE ACRES.

2. THE PREVIOUSLY DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH THE REQUIREMENTS OF APPLICABLE RULES.

3. THE PERMITTEE PROVIDES NOTICE OF THE ACREAGE STABILIZED TO THE CONTROL OFFICER.

J. PERMITTEES WHO ARE REQUIRED TO OBTAIN A SINGLE PERMIT FOR MULTIPLE NONCONTIGUOUS SITES THAT IS ISSUED BY A CONTROL OFFICER AND THAT REQUIRES CONTROL OF PM-10 EMISSIONS FROM DUST GENERATING OPERATIONS SHALL HAVE ON SITES WITH GREATER THAN ONE ACRE OF DISTURBED SURFACE AREA AT LEAST ONE INDIVIDUAL WHO IS DESIGNATED BY THE PERMITTEE AS A DUST CONTROL COORDINATOR TRAINED IN ACCORDANCE WITH SUBSECTION C. THE DUST CONTROL COORDINATOR SHALL BE PRESENT ON SITE AT ALL TIMES DURING PRIMARY DUST GENERATING ACTIVITIES THAT ARE RELATED TO THE PURPOSES FOR WHICH THE PERMIT WAS OBTAINED. THIS SUBSECTION DOES NOT APPLY TO PERMITTEES SUBJECT TO SUBSECTIONS B AND C.

49-474.06. Dust control; subcontractor registration; fee

A. IN AN AREA DESIGNATED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A SERIOUS PM-10 NONATTAINMENT AREA OR A MAINTENANCE AREA THAT WAS DESIGNATED AS A SERIOUS PM-10 NONATTAINMENT AREA, A SUBCONTRACTOR WHO IS ENGAGED IN DUST GENERATING OPERATIONS AT A SITE THAT IS SUBJECT TO A PERMIT THAT IS ISSUED BY A CONTROL OFFICER AND THAT REQUIRES CONTROL OF PM-10 EMISSIONS FROM DUST GENERATING OPERATIONS SHALL REGISTER WITH THE CONTROL OFFICER BY SUBMITTING INFORMATION IN THE MANNER PRESCRIBED BY THE CONTROL OFFICER. THE CONTROL OFFICER SHALL ISSUE A REGISTRATION NUMBER AFTER PAYMENT OF THE FEE AUTHORIZED UNDER SUBSECTION C.

B. THE SUBCONTRACTOR SHALL HAVE ITS REGISTRATION NUMBER READILY ACCESSIBLE ON SITE WHILE CONDUCTING ANY DUST GENERATING OPERATIONS.

C. THE CONTROL OFFICER MAY ESTABLISH AND ASSESS A FEE FOR THE REGISTRATION REQUIRED UNDER SUBSECTION A BASED ON THE TOTAL COST OF PROCESSING THE REGISTRATION AND ISSUANCE OF A REGISTRATION NUMBER.

49-474.07. Voluntary diesel equipment retrofit program; criteria; inventory; permits

A. A COUNTY WITH A POPULATION OF MORE THAN FOUR HUNDRED THOUSAND PERSONS SHALL OPERATE AND ADMINISTER A VOLUNTARY DIESEL EMISSIONS RETROFIT PROGRAM IN THE COUNTY FOR THE PURPOSE OF REDUCING PARTICULATE EMISSIONS FROM DIESEL EQUIPMENT. THE PROGRAM SHALL PROVIDE FOR REAL AND QUANTIFIABLE EMISSIONS REDUCTIONS BASED ON ACTUAL EMISSIONS REDUCTIONS BY AN AMOUNT GREATER THAN THAT ALREADY REQUIRED BY APPLICABLE LAW, RULE, PERMIT OR ORDER AND COMPUTED BASED ON THE PERCENTAGE EMISSIONS REDUCTIONS FROM THE TESTING OF THE DIESEL RETROFIT EQUIPMENT PRESCRIBED IN SUBSECTION C AS APPLIED TO THE RATED EMISSIONS OF THE ENGINE AND USING THE STANDARD OPERATING HOURS OF THE EQUIPMENT.

B. A PERSON MAY PARTICIPATE IN THE PROGRAM IF BOTH OF THE FOLLOWING APPLY:

1. THE PERSON IS THE OWNER OF DIESEL POWERED EQUIPMENT THAT REQUIRES A PERMIT ISSUED PURSUANT TO THIS ARTICLE FOR LAWFUL OPERATION.

2. THE PERSON REPORTS TO THE CONTROL OFFICER ON THE TYPE OF EQUIPMENT THAT IS RETROFITTED, PROVIDES A METHOD FOR CALCULATING THE EMISSIONS REDUCTIONS ACHIEVED THAT IS APPROVED BY THE CONTROL OFFICER AND PROVIDES EVIDENCE THAT THE RETROFITTED EQUIPMENT IS ACTUALLY USED IN A MANNER THAT RESULTS IN LOWER PARTICULATE EMISSIONS WITH NO INCREASE IN EMISSIONS OF OTHER POLLUTANTS.

C. THE VOLUNTARY DIESEL RETROFIT PROGRAM SHALL PROVIDE FOR THE FOLLOWING:

1. EACH PERSON WHO PARTICIPATES SHALL ALLOCATE TO THE AIR QUALITY EMISSIONS REDUCTION INVENTORY FOR THAT COUNTY ONE-HALF OF THE TOTAL PARTICULATE EMISSIONS REDUCTION ACHIEVED THROUGH THAT PERSON'S RETROFIT OF DIESEL EQUIPMENT OPERATING AT THE PERMITTED SITE WHETHER OR NOT THAT EQUIPMENT IS REQUIRED TO HAVE A PERMIT.

2. EACH PERSON WHO PARTICIPATES SHALL RETAIN ONE-HALF OF THE TOTAL PARTICULATE EMISSIONS REDUCTION ACHIEVED THROUGH THAT PERSON'S RETROFIT OF EQUIPMENT AT THE SITE FOR PURPOSES OF RECEIVING A MODIFICATION TO AN EXISTING PERMIT OR A PROVISION IN A NEW PERMIT THAT ALLOWS FOR EXTENDED HOURS OF OPERATION FOR THE PERMITTED EQUIPMENT, AS COMPARED TO THE EXISTING PERMIT, OR FOR NEW PERMITS, AS COMPARED TO PERMITS FOR SIMILAR EQUIPMENT.

3. THE DIESEL EMISSIONS REDUCTION EQUIPMENT THAT IS RETROFITTED SHALL BE REGISTERED WITH THE DEPARTMENT OF ENVIRONMENTAL QUALITY WITH NOTICE TO THE APPLICABLE COUNTY, SHALL BE TESTED WITH AN ISO 8178 TEST BY A PROPERLY EQUIPPED LABORATORY AND SHALL DEMONSTRATE AT LEAST A THIRTY-FIVE PER CENT REDUCTION IN PARTICULATE POLLUTION WITH NO INCREASE IN THE GENERATION OR EMISSION OF OTHER REGULATED POLLUTANTS. THIS PARAGRAPH APPLIES WITHOUT REGARD TO WHETHER THE PARTICIPANT IS REQUIRED TO OBTAIN AN AIR QUALITY PERMIT FOR THE EQUIPMENT.

4. THE CONTROL OFFICER SHALL PROVIDE A METHOD FOR DETERMINING THE PARTICIPANT'S ELIGIBILITY FOR THE PROGRAM AND FOR THE MODIFICATION OF EXISTING PERMITS OR FOR INCORPORATING THIS PROGRAM'S PROVISIONS INTO THE TERMS OF ANY APPLICABLE NEW PERMITS AS WELL AS ANY REPORTING REQUIREMENTS TO ENSURE CONTINUED USE OF THE EMISSIONS REDUCTION MEASURES.

D. THIS SECTION DOES NOT AUTHORIZE A PERMIT CONDITION OR A MODIFICATION TO A PERMIT CONDITION THAT WOULD VIOLATE A REQUIREMENT OF THE CLEAN AIR ACT, THIS CHAPTER OR A RULE ADOPTED UNDER THIS CHAPTER, INCLUDING THE NATIONAL AMBIENT AIR QUALITY STANDARDS. THIS SECTION DOES NOT AUTHORIZE THE USE OF REDUCTIONS IN MOBILE SOURCE EMISSIONS FOR PURPOSES OF DETERMINING THE APPLICABILITY OF NEW SOURCE REVIEW REQUIREMENTS.

Sec. 18. Section 49-501, Arizona Revised Statutes, is amended to read:

49-501. Unlawful open burning; exceptions; fine; definition

A. Notwithstanding the provisions of any other section of this article: ~~,~~

1. It is unlawful for any person to ignite, cause to be ignited, permit to be ignited, or suffer, allow, or maintain any open outdoor fire except as provided in this section.

2. FROM MAY 1 THROUGH SEPTEMBER 30 EACH YEAR, IT IS UNLAWFUL FOR ANY PERSON TO IGNITE, CAUSE TO BE IGNITED, PERMIT TO BE IGNITED OR SUFFER, ALLOW OR MAINTAIN ANY OPEN OUTDOOR FIRE IN AREA A AS DEFINED IN SECTION 49-541.

~~C.~~ B. The following fires are excepted from ~~the provisions of~~ this section:

1. Fires used only for cooking of food or for providing warmth for human beings ~~or for recreational purposes~~ or the branding of animals or the use of orchard heaters for the purpose of frost protection in farming or nursery operations.

2. Any fire set or permitted by any public officer in the performance of official duty, if such fire is set or permission given for the purpose of weed abatement, the prevention of a fire hazard, or instruction in the methods of fighting fires.

3. Fires set by or permitted by the director of the department of agriculture or county agricultural agents of the county for the purpose of disease and pest prevention.

4. Fires set by or permitted by the federal government or any of its departments, agencies or agents or the state or any of its agencies, departments or political subdivisions for the purpose of watershed rehabilitation or control through vegetative manipulation.

5. Fires permitted by any rule or regulation issued pursuant to this article, by any conditional permit issued by a hearing board established under this article or by any rule or conditional permit issued pursuant to article 2 of this chapter when the department of environmental quality pursuant to section 49-402 has assumed jurisdiction of the county in which the fire is located.

6. Fires set for the disposal of dangerous materials where there is no safe alternate method of disposal.

~~D.~~ C. Permission for the setting of any fire given by a public officer in the performance of official duty under subsection ~~C~~ B, paragraph 2, 3 or 4 OF THIS SECTION shall be given in writing and a copy of the written permission shall be transmitted immediately to the director OF ENVIRONMENTAL QUALITY and the control officer of the county, district or region in which such fire is allowed. The setting of any such fire shall be conducted in a manner and at such time as approved by the control officer or the director OF ENVIRONMENTAL QUALITY, unless doing so would defeat the purpose of the exemption.

~~E.~~ D. Notwithstanding section 49-107, the director may delegate authority for the issuance of open burning permits to a county, city, town or fire district. A county, city, town or fire district that has been delegated authority for the issuance of open burning permits may assign the issuance of these permits to a private fire protection service provider that performs fire protection services within that county, city, town or fire district. Any private fire protection service provider that is authorized to issue open burning permits pursuant to this subsection shall maintain a copy of all

currently effective permits issued including a means of contacting the person authorized by the permit to set the fire in the event that an order to extinguish the open burning is issued. Permits issued pursuant to this subsection shall contain both of the following:

1. Conditions that limit the manner and time of setting the fire and that are consistent with this section and rules adopted pursuant to this section.

2. A provision that all burning be extinguished at the discretion of the director or the director's authorized representative during periods of inadequate atmospheric smoke dispersion, periods of excessive visibility impairment that could adversely affect public safety or periods when smoke is blown into populated areas so as to create a public nuisance.

~~F.~~ E. The director may issue a general permit to allow persons engaged in farming or ranching on forty acres or more in an unincorporated area to burn household waste, as defined in section 49-701, that is generated on site, if no household waste collection and disposal service is available. The general permit shall include the following:

1. Conditions governing the method, manner and times for burning.

2. Limitation on materials which may be burned, including a prohibition on burning of materials which generate noxious fumes.

3. A requirement that any person seeking coverage under the general permit shall register with the director on a form prescribed by the director. Upon receipt of a registration form, the director shall notify the county in which the farm or ranch is located of such registration.

4. A statement that the director, a local air pollution control officer, or any other public officer may order the extinguishment of burning or may prohibit burning during periods of inadequate smoke dispersion or excessive visibility impairment or at other times when public health or safety could be adversely affected.

~~G.~~ F. Nothing in this section is intended to permit any practice which is a violation of any statute, ordinance, rule or regulation in a county with a population in excess of one million two hundred thousand persons. ~~according to the most recent United States decennial census.~~ NOTWITHSTANDING ANY OTHER LAW, SUCH A COUNTY SHALL PROHIBIT BY ORDINANCE THE USE OF WOOD BURNING CHIMINEAS, OUTDOOR FIRE PITS AND SIMILAR OUTDOOR FIRES ON THOSE DAYS FOR WHICH THE COUNTY HAS ISSUED A NO BURN DAY RESTRICTION.

~~H.~~ G. A person who violates any provision of this section may be served a notice of violation and be subject to the enforcement provisions of this article to the same extent as a person violating any rule or regulation adopted pursuant to this article, EXCEPT THAT A VIOLATION THAT LASTS NO MORE THAN TWENTY-FOUR HOURS AND THAT IS THE FIRST VIOLATION COMMITTED BY THAT PERSON IS SUBJECT TO A CIVIL PENALTY OF NO MORE THAN FIVE HUNDRED DOLLARS.

~~I. Any violation of this section shall be punishable by a fine not to exceed twenty-five dollars.~~

~~B.~~ H. FOR THE PURPOSES OF THIS SECTION, "open outdoor fire"~~, as used in this section,~~ means any combustion of combustible material of any type outdoors, in the open where the products of combustion are not directed through a flue. FOR THE PURPOSES OF THIS SUBSECTION, "flue"~~, as used in this subsection,~~ means any duct or passage for air, gases or the like, such as a stack or chimney.

Sec. 19. Section 49-542, Arizona Revised Statutes, as amended by Laws 2007, chapter 171, section 5, is amended to read:

49-542. Emissions inspection program; powers and duties of director; administration; periodic inspection; minimum standards and rules; exceptions; definition

A. The director shall administer a comprehensive annual or biennial emissions inspection program which shall require the inspection of vehicles in this state pursuant to this article and applicable administrative rules. Such inspection is required in area A and area B, for those vehicles owned by a person who is subject to section 15-1444 or 15-1627 and for those vehicles registered outside of area A or area B but used to commute to the driver's principal place of employment located within area A or area B. Inspection in other counties of the state shall commence upon application by a county board of supervisors for participation in such inspection program, subject to approval by the director. In all counties with a population of three hundred fifty thousand or fewer persons according to the most recent United States decennial census, except for the portion of counties that contain any portion of area A, the director shall as conditions dictate provide for testing to determine the effect of vehicle related pollution on ambient air quality in all communities with a metropolitan area population of twenty thousand persons or more according to the most recent United States decennial census. If such testing detects the violation of state ambient air quality standards by vehicle related pollution, the director shall forward a full report of such violation to the president of the senate, the speaker of the house of representatives and the governor.

B. The state's annual or biennial emissions inspection program shall provide for vehicle inspections at official emissions inspection stations or at fleet emissions inspection stations. Each inspection station in area A shall employ at least one mechanic who is available during the station's hours of operation to provide technical advice and assistance for persons who fail the emissions test. The director may enter into agreements with the department of transportation or with county assessors for the use of official emissions inspection stations for the purpose of conducting vehicle registrations. An official or fleet emissions inspection station permit shall not be sold, assigned, transferred, conveyed or removed to another location except on such terms and conditions as the director may prescribe.

C. Vehicles required to be inspected and registered in this state, except those provided for in section 49-546, shall be inspected, for the purpose of complying with the registration or reregistration requirement

pursuant to subsection D of this section, in accordance with the provisions of this article no more than ninety days prior to each reregistration expiration date. A vehicle may be submitted voluntarily for inspection more than ninety days before the reregistration expiration date on payment of the prescribed inspection fee. Such voluntary inspection shall not be considered as compliance with the registration or reregistration requirement pursuant to subsection D of this section.

D. A vehicle shall not be registered or reregistered until such vehicle has passed the emissions inspection, ~~and~~ the tampering inspection prescribed in subsection G of this section AND THE LIQUID FUEL LEAK INSPECTION PRESCRIBED IN SUBSECTION Z OF THIS SECTION or has been issued a certificate of waiver. A certificate of waiver shall only be issued one time to a vehicle after January 1, 1997. If any vehicle to be registered or reregistered is being sold by a dealer licensed to sell motor vehicles pursuant to title 28, the cost of any inspection and any repairs necessary to pass the inspection shall be borne by the dealer. A dealer who is licensed to sell motor vehicles pursuant to title 28 and whose place of business is located in area A or area B shall not deliver any vehicle to the retail purchaser until the vehicle passes any inspection required by this article or the vehicle is exempt under subsection J of this section.

E. On the registration or reregistration of a vehicle which has complied with the minimum emissions standards pursuant to this section or is otherwise exempt under this section, the registering officer shall issue an air quality compliance sticker to the registered owner which shall be placed on the vehicle as prescribed by rule adopted by the department of transportation or issue a modified year validating tab as prescribed by rule adopted by the department of transportation. Those persons who reside outside of area A or area B but who elect to test their vehicle or are required to test their vehicle pursuant to this section and who comply with the minimum emissions standards pursuant to this section or are otherwise exempt under this section shall remit a compliance form, as prescribed by the department of transportation, and proof of compliance issued at an official emissions inspection station to the department of transportation along with the appropriate fees. The department of transportation shall then issue the person an air quality compliance sticker which shall be placed on the vehicle as prescribed by rule adopted by the department of transportation. The registering officer or the department of transportation shall collect an air quality compliance fee of twenty-five cents. The registering officer or the department of transportation shall deposit, pursuant to sections 35-146 and 35-147, the air quality compliance fee in the state highway fund established by section 28-6991. The department of transportation shall deposit, pursuant to sections 35-146 and 35-147, any emissions inspection fee in the emissions inspection fund. The provisions of this subsection do not apply to those vehicles registered pursuant to title 28, chapter 7, article 7 or 8, the sale of vehicles between motor vehicle dealers or vehicles leased to a person

residing outside of area A or area B by a leasing company whose place of business is in area A or area B.

F. The director shall adopt minimum emissions standards pursuant to section 49-447 with which the various classes of vehicles shall be required to comply as follows:

1. For the purpose of determining compliance with minimum emissions standards in area B:

(a) A motor vehicle manufactured in or before the 1980 model year, other than a diesel powered vehicle, shall be required to take and pass the curb idle test condition. A diesel powered vehicle is subject to only a loaded test condition. The conditioning mode shall, at the option of the vehicle owner or owner's agent, be administered only after the vehicle has failed the curb idle test condition. Upon completion of such conditioning mode, a vehicle that has failed the curb idle test condition may be retested in the curb idle test condition. If the vehicle passes such retest, it shall be deemed in compliance with minimum emissions standards unless the vehicle fails the tampering inspection pursuant to subsection G of this section OR THE LIQUID LEAK FUEL INSPECTION PURSUANT TO SUBSECTION Z OF THIS SECTION.

(b) A motor vehicle manufactured in or after the 1981 model year, other than a diesel powered vehicle, shall be required to take and pass the curb idle test condition and the loaded test condition or an onboard diagnostic check as may be required pursuant to title II of the clean air act.

2. For purposes of determining compliance with minimum emissions standards and functional tests in area A:

(a) Motor vehicles manufactured in or after model year 1981 with a gross vehicle weight rating of eighty-five hundred pounds or less, other than diesel powered vehicles, shall be required to take and pass a transient loaded emissions test or an onboard diagnostic check as may be required pursuant to title II of the clean air act.

(b) Motor vehicles other than those prescribed by subdivision (a) of this paragraph and other than diesel powered vehicles shall be required to take and pass a steady state loaded test and a curb idle emissions test.

(c) A diesel powered motor vehicle applying for registration or reregistration in area A shall be required to take and pass an annual emissions test conducted at an official emissions inspection station or a fleet emissions inspection station as follows:

(i) A loaded, transient or any other form of test as provided for in rules adopted by the director for vehicles with a gross vehicle weight rating of eight thousand five hundred pounds or less.

(ii) A test that conforms with the society for automotive engineers standard J1667 for vehicles with a gross vehicle weight rating of more than eight thousand five hundred pounds.

(d) Motor vehicles by specific class or model year shall be required to take and pass any of the following tests:

(i) An evaporative system purge test.

(ii) An evaporative system integrity test.

(e) An onboard diagnostic check as may be required pursuant to title II of the clean air act.

3. A motorcycle in area A or any constant four wheel drive vehicle shall be required to take and pass a curb idle emissions test or an onboard diagnostic check as required pursuant to title II of the clean air act.

4. Fleet operators in area B must comply with this section, except that used vehicles sold by a motor vehicle dealer who is a fleet operator and who has been issued a permit under section 49-546 shall be tested as follows:

(a) A motor vehicle manufactured in or before the 1980 model year shall take and pass only the curb idle test condition, except that a diesel powered vehicle is subject to only a loaded test condition.

(b) A motor vehicle manufactured in or after the 1981 model year shall take and pass the curb idle test condition and a twenty-five hundred revolutions per minute unloaded test condition.

5. Vehicles owned or operated by the United States, this state or a political subdivision of this state shall comply with this subsection without regard to whether those vehicles are required to be registered in this state, except that alternative fuel vehicles of a school district that is located in area A shall be required to take and pass the curb idle test condition and the loaded test condition.

6. Fleet operators in area A shall comply with this section, except that used vehicles sold by a motor vehicle dealer who is a fleet operator and who has been issued a permit pursuant to section 49-546 for purposes of determining compliance with minimum emission standards in area A shall be tested as follows:

(a) A motor vehicle manufactured in or before the 1980 model year shall take and pass the curb idle test condition, except that a diesel powered vehicle is subject to only a loaded test condition.

(b) A motor vehicle manufactured in or after the 1981 model year shall take and pass the curb idle test condition and a two thousand five hundred revolutions per minute unloaded test condition.

7. Beginning on January 1, 2004 and except for any registered owner or lessee of a fleet of less than twenty-five vehicles, a diesel powered motor vehicle with a gross vehicle weight of more than twenty-six thousand pounds and for which gross weight fees are paid pursuant to title 28, chapter 15, article 2 in area A shall not be allowed to operate in area A unless it was manufactured in or after the 1988 model year or is powered by an engine that is certified to meet or surpass emissions standards contained in 40 Code of Federal Regulations section 86.088-11. This paragraph does not apply to vehicles that are registered pursuant to title 28, chapter 7, article 7 or 8.

8. Beginning on January 1, 2006 for any registered owner or lessee of a fleet of less than twenty-five vehicles, a diesel powered motor vehicle with a gross vehicle weight of more than twenty-six thousand pounds and for

which gross weight fees are paid pursuant to title 28, chapter 15, article 2 in area A shall not be allowed to operate in area A unless it was manufactured in or after the 1988 model year or is powered by an engine that is certified to meet or surpass emissions standards contained in 40 Code of Federal Regulations section 86.088-11. This paragraph does not apply to vehicles that are registered pursuant to title 28, chapter 7, article 7 or 8.

G. In addition to an emissions inspection, a vehicle is subject to a tampering inspection on at least a biennial basis if the vehicle was manufactured after the 1974 model year and the vehicle is not subject to a transient loaded emissions test or an onboard diagnostic check as required pursuant to title II of the clean air act. The director shall adopt vehicle configuration guidelines for the tampering inspection which shall be based on the original configuration of the vehicle when manufactured. The tampering inspection shall consist of the following:

1. A visual check to determine the presence of properly installed catalytic converters.

2. An examination to determine the presence of an operational air pump.

3. In area A, if the vehicle was manufactured after the 1974 model year and is not subject to a transient loaded emissions test or an onboard diagnostic check as required pursuant to title II of the clean air act, a visual inspection for the presence or malfunction of the positive crankcase ventilation system and the evaporative control system.

H. Vehicles required to be inspected shall undergo a functional test of the gas cap to determine if the cap holds pressure within limits prescribed by the director, except for any vehicle that is subject to an evaporative system integrity test.

I. Motor vehicles failing the initial or subsequent test are not subject to a penalty fee for late registration renewal if the original testing was accomplished before the expiration date and if the registration renewal is received by the motor vehicle division or the county assessor within thirty days of the original test.

J. The director may adopt rules for purposes of implementation, administration, regulation and enforcement of the provisions of this article including:

1. The submission of records relating to the emissions inspection of vehicles inspected by another jurisdiction in accordance with another inspection law and the acceptance of such inspection for compliance with the provisions of this article.

2. The exemption from inspection of:

(a) A motor vehicle manufactured in or before the 1966 model year.

(b) New vehicles originally registered at the time of initial retail sale and titling in this state pursuant to section 28-2153 or 28-2154.

(c) Vehicles registered pursuant to title 28, chapter 7, article 7 or 8.

(d) New vehicles before the sixth registration year after initial purchase or lease.

(e) Vehicles which will not be available within the state during the ninety days prior to registration.

(f) Golf carts.

(g) Electrically-powered vehicles.

(h) Vehicles with an engine displacement of less than ninety cubic centimeters.

(i) The sale of vehicles between motor vehicle dealers.

(j) Vehicles leased to a person residing outside of area A or area B by a leasing company whose place of business is in area A or area B.

(k) Collectible vehicles.

(l) Motorcycles in area B.

3. Compiling and maintaining records of emissions test results after servicing.

4. A procedure which shall allow the vehicle service and repair industry to compare the calibration accuracy of its emissions testing equipment with the department's calibration standards.

5. Training requirements for automotive repair personnel using emissions measuring equipment whose calibration accuracy has been compared with the department's calibration standards.

6. Any other rule which may be required to accomplish the provisions of this article.

K. The director shall, after consultation with automobile manufacturers and the vehicle service and repair industry, establish by rule a definition of "low emissions tune-up" for motor vehicles subject to inspection under this article. The definition shall specify repair procedures which, when implemented, will reduce vehicle emissions.

L. The director shall adopt rules which specify that the estimated retail cost of all recommended maintenance and repairs shall not exceed the amounts prescribed in this subsection, except that if a vehicle fails a tampering inspection there is no limit on the cost of recommended maintenance and repairs. The director shall issue a certificate of waiver for a vehicle which has failed reinspection, if the director has determined that all recommended maintenance and repairs have been performed. If, after reinspection, the director has determined that the vehicle is in compliance with minimum emissions standards or that all recommended maintenance and repairs for compliance with minimum emissions standards have been performed, but that tampering discovered at a tampering inspection has not been repaired, the director may issue a certificate of waiver if the owner of the vehicle provides to the director a written statement from an automobile parts or repair business that an emissions control device which is necessary to repair the tampering is not available and cannot be obtained from any usual source of supply before the vehicle's current registration expires. Rules adopted by the director for the purpose of establishing the estimated retail

cost of all recommended maintenance and repairs pursuant to this subsection shall specify that:

1. In area A the cost shall not exceed:

(a) Five hundred dollars for a diesel powered vehicle with a gross weight in excess of twenty-six thousand pounds.

(b) Five hundred dollars for a diesel powered vehicle with tandem axles.

(c) For a vehicle other than a diesel powered vehicle with a gross weight in excess of twenty-six thousand pounds and other than a diesel powered vehicle with tandem axles:

(i) Two hundred dollars for such a vehicle manufactured in or before the 1974 model year.

(ii) Three hundred dollars for such a vehicle manufactured in the 1975 through 1979 model years.

(iii) Four hundred fifty dollars for such a vehicle manufactured in or after the 1980 model year.

2. In area B the cost shall not exceed:

(a) Three hundred dollars for a diesel powered vehicle with a gross weight in excess of twenty-six thousand pounds.

(b) Three hundred dollars for a diesel powered vehicle with tandem axles.

3. For a vehicle other than a diesel powered vehicle with a gross weight in excess of twenty-six thousand pounds and other than a diesel powered vehicle with tandem axles:

(a) Fifty dollars for such a vehicle manufactured in or before the 1974 model year.

(b) Two hundred dollars for such a vehicle manufactured in the 1975 through 1979 model years.

(c) Three hundred dollars for such a vehicle manufactured in or after the 1980 model year.

M. Each person whose vehicle has failed an emissions inspection shall be provided a list of those general recommended tune-up procedures for vehicles which are designed to reduce vehicle emissions levels. The list shall include the following notice: "This test is the result of federal law. You may wish to contact your representative in the United States Congress."

N. Notwithstanding any other provisions of this article, the director may adopt rules allowing exemptions from the requirement that all vehicles must meet the minimum standards for registration or reregistration.

O. The director of environmental quality shall establish, in cooperation with the assistant director for the motor vehicle division of the department of transportation:

1. An adequate method for identifying bona fide residents residing outside of area A or area B to ensure that such residents are exempt from compliance with the inspection program established by this article and rules adopted under this article.

2. A written notice that shall accompany the vehicle registration application forms that are sent to vehicle owners pursuant to section 28-2151 and that shall accompany or be included as part of the vehicle emissions test results that are provided to vehicle owners at the time of the vehicle emissions test. This written notice shall describe at least the following:

(a) The restriction of the waiver program to one time per vehicle and a brief description of the implications of this limit.

(b) The availability and a brief description of the vehicle repair and retrofit program established pursuant to section 49-474.03.

(c) Notice that many vehicles carry extended warranties for vehicle emissions systems, and those warranties are described in the vehicle's owner's manual or other literature.

(d) A description of the catalytic converter replacement program established pursuant to section 49-474.03.

P. Notwithstanding any other law, if area A or area B is reclassified as an attainment area, emissions testing conducted pursuant to this article shall continue for vehicles registered inside that reclassified area, vehicles owned by a person who is subject to section 15-1444 or 15-1627 and vehicles registered outside of that reclassified area but used to commute to the driver's principal place of employment located within that reclassified area.

Q. A fleet operator who is issued a permit pursuant to section 49-546 may electronically transmit emissions inspection data to the department of transportation pursuant to rules adopted by the director of the department of transportation in consultation with the director of environmental quality.

R. The director shall prohibit a certificate of waiver pursuant to subsection L of this section for any vehicle which has failed inspection in area A due to the catalytic converter system.

S. The director shall establish provisions for rapid testing of certain vehicles and to allow fleet operators, singly or in combination, to contract directly for vehicle emissions testing.

T. Each vehicle emissions control station in area A shall have a sign posted to be visible to persons who are having their vehicles tested. This sign shall state that enhanced testing procedures are a direct result of federal law.

U. The initial adoption of rules pursuant to this section shall be deemed emergency rules pursuant to section 41-1026.

V. The director of environmental quality and the director of the department of transportation shall implement a system to exchange information relating to the waiver program, including information relating to vehicle emissions test results and vehicle registration information.

W. Any person who sells a vehicle that has been issued a certificate of waiver pursuant to this section after January 1, 1997 and who knows that a certificate of waiver has been issued after January 1, 1997 for that vehicle

shall disclose to the buyer before completion of the sale that a certificate of waiver has been issued for that vehicle.

X. Vehicles that fail the emissions test at emission levels higher than twice the standard established for that vehicle class by the department pursuant to section 49-447 are not eligible for a certificate of waiver pursuant to this section unless the vehicle is repaired sufficiently to achieve an emissions level below twice the standard for that class of vehicle.

Y. If an insurer notifies the department of transportation of the cancellation or nonrenewal of collectible vehicle or classic automobile insurance coverage for a collectible vehicle, the department of transportation shall cancel the registration of the vehicle and the vehicle's exemption from emissions testing pursuant to this section unless evidence of coverage is presented to the department of transportation within sixty days.

Z. IN ADDITION TO AN EMISSIONS INSPECTION, A VEHICLE IS SUBJECT TO A LIQUID FUEL LEAK INSPECTION ON AT LEAST A BIENNIAL BASIS IF THE VEHICLE WAS MANUFACTURED AFTER THE 1974 MODEL YEAR AND IS NOT A DIESEL VEHICLE. THE DIRECTOR SHALL ADOPT RULES PRESCRIBING PROCEDURES AND STANDARDS FOR THE LIQUID FUEL LEAK INSPECTION.

~~Z.~~ AA. For the purposes of this section, "collectible vehicle" means a vehicle that complies with both of the following:

1. Either:

(a) Bears a model year date of original manufacture that is at least fifteen years old.

(b) Is of unique or rare design, of limited production and an object of curiosity.

2. Meets both of the following criteria:

(a) Is maintained primarily for use in car club activities, exhibitions, parades or other functions of public interest or for a private collection and is used only infrequently for other purposes.

(b) Has a collectible vehicle or classic automobile insurance coverage that restricts the collectible vehicle mileage or use, or both, and requires the owner to have another vehicle for personal use.

Sec. 20. Interim rule making; publication

Notwithstanding title 41, chapter 6, article 3, Arizona Revised Statutes, the best management practices committee for regulated agricultural activities established under section 49-457, Arizona Revised Statutes, shall adopt the rules required by section 49-457, Arizona Revised Statutes, as amended by this act, as interim rules with an immediate effective date in compliance with section 41-1032, Arizona Revised Statutes, in order to comply with the December 31, 2007 deadline imposed by the United States environmental protection agency for failure to attain the national ambient air quality standard for PM-10 on or before December 31, 2006. The rules shall have an immediate effective date. Interim rules are exempt from title 41, chapter 6, article 3, Arizona Revised Statutes, except that the committee

shall submit the rules for publication and the secretary of state shall publish the rules in the Arizona administrative register.

Sec. 21. Construction contracts with public entities; definition

A. If this state or an agency or political subdivision of this state is party to a construction contract executed before enactment of this act, the state, agency or political subdivision may agree to a contract amendment to provide for supplemental payments to reimburse the contractor for costs incurred solely and directly as a result of new dust control requirements imposed under this act if the following conditions are satisfied:

1. The measures taken to comply with the new dust control requirements were necessary and appropriate.

2. The measures taken to comply with the new dust control requirements were not necessary or appropriate to comply with dust control requirements or any other legal or contractual requirements in existence before enactment of this act.

3. The contractor provides the state, agency or political subdivision with complete documentation for the costs for which supplemental payment is requested.

4. The contractor did not expressly or impliedly assume the risk that additional costs would be incurred as a result of changes in dust control requirements.

B. Any invitation to bid or request for proposals issued by this state or an agency or political subdivision of this state for a construction project in area A as defined in section 49-541, Arizona Revised Statutes, shall require that the offer address compliance with all dust control requirements applicable to the project.

C. For the purposes of this section, "political subdivision" means an entity supported in whole or in part by tax revenues.

Sec. 22. Delayed repeal

Section 21 of this act, relating to public contracts and dust control requirements, is repealed from and after September 30, 2009.

Sec. 23. City and county particulate enforcement; report; joint legislative budget committee

A county and any city or town that is located in an area designated by the environmental protection agency as a serious PM-10 nonattainment area or a maintenance area that was designated as a serious PM-10 nonattainment area shall submit reports on particulate enforcement to the joint legislative budget committee on June 1 and December 1 in 2008 and 2009. The reports shall include the following information for each county, city and town:

1. The number of notices of violation issued, fines or penalties assessed or other sanctions imposed for particulate violations.

2. The number of inspectors or other enforcement personnel employed for purposes of enforcing statutes, rules or ordinances related to particulates.

3. The number of miles of streets, roads, alleys, shoulders and vacant areas paved or otherwise stabilized.

4. Any other information relevant to enforcement of particulate measures prescribed by this act.

Sec. 24. State air quality study committee; members; duties; report

A. The state air quality study committee is established consisting of the following members:

1. Five members of the senate who are appointed by the president of the senate, not more than three of whom are members of the same political party. The president of the senate shall designate one of these members to serve as cochairperson of the committee.

2. Five members of the house of representatives who are appointed by the speaker of the house of representatives, not more than three of whom are members of the same political party. The speaker of the house of representatives shall designate one of these members to serve as cochairperson of the committee.

B. The purpose of the committee is to examine and make recommendations for current and future compliance with primary national ambient air quality standards in this state.

C. The committee shall:

1. Review the implementation and enforcement of the particulate matter and ozone control measures for areas A and C prescribed in this act and adopted by the Maricopa association of governments and Maricopa county for area A. On request of the committee, the Maricopa association of governments shall provide a summary of the five per cent PM-10 reduction plan submitted to the United States environmental protection agency on or before December 31, 2007.

2. Examine the need to adopt additional particulate matter and ozone control measures in areas A and C to ensure compliance with national ambient air quality standards in areas A and C and any other federal requirements.

3. Review the different types of motor fuel standards required by law in this state.

4. Examine the need to adjust the different types of motor fuel standards in this state based on the following criteria:

(a) Current and future compliance with primary national ambient air quality standards to protect public health.

(b) Effect on supply of motor fuel into this state.

(c) Effect on the price and costs of production and delivery of motor fuel to consumers.

(d) Cost-effectiveness of motor fuel standard changes in comparison with other types of control measures.

(e) Federal regulations on locally-specific motor fuel types.

5. Review the vehicle emission inspection requirements in this state and examine the applicability of these requirements.

6. Review and examine other air quality control measures, as the committee deems necessary, to ensure current and future compliance with primary national ambient air quality standards to protect public health, including vapor recovery system technologies and requirements.

7. Make any recommendations on review and examination of the subjects prescribed in paragraphs 1 through 6 of this subsection.

8. Submit a report of its findings and recommendations to the governor, the president of the senate and the speaker of the house of representatives on or before December 31, 2009 and submit copies of these reports to the secretary of state and the director of the Arizona state library, archives and public records.

Sec. 25. Department of environmental quality; motor fuels emissions studies; recommendations

A. The department of environmental quality shall evaluate the coordinating research council study E-74b. The department of environmental quality shall receive comments evaluating the coordinating research council study E-74b from the department of weights and measures, any trade organizations representing automobile manufacturers, ethanol producers and marketers, petroleum refiners, suppliers, distributors and marketers, and other interested parties.

B. The department of environmental quality and each of the entities submitting comments pursuant to subsection A of this section shall consider providing additional research and cooperating to design and conduct any additional studies.

C. If funding is made available, and if the department of environmental quality in consultation with each of the entities submitting comments pursuant to subsection A of this section determines additional research is necessary, the department of environmental quality, in consultation with the department of weights and measures, shall develop and implement research that would complement and incorporate the coordinating research council study E-74b regarding Reid vapor pressure and oxygen content effects on emissions of 1994 model year and newer light duty vehicles. The research:

1. May include federal test procedure testing of a sufficient number and variety of federal tier 1 and tier 2 standard vehicles to be representative of the current in-use light duty vehicle fleet.

2. May include an emissions and air quality assessment of the impacts of changing the area A wintertime Reid vapor pressure standard to comply with American society for testing and materials Reid vapor pressure standards applicable to area A, including the wintertime Reid vapor pressure waiver for ethanol blends allowed by provisions of a waiver issued or other limits established by the United States environmental protection agency.

3. May include an assessment of the emissions and air quality impacts of requiring ten per cent ethanol in tandem with any change in Reid vapor pressure, including an assessment of Reid vapor pressure being allowed to

rise with no ethanol content and an assessment of fuel containing greater than twenty per cent ethanol content.

4. Notwithstanding the receipt of the coordinating research council study E-74b, shall include:

(a) An assessment of costs of production and delivery of gasoline and ethanol and an assessment of gasoline and ethanol supplies and logistics.

(b) A statewide assessment of increasing flexibility under state standards for blending ethanol to include impacts on the environment, vehicle performance and costs to consumers.

D. On or before February 15, 2008, the department of environmental quality shall submit its evaluation of the coordinating research council study E-74b and any comments received pursuant to subsection A of this section to the governor, the president of the senate and the speaker of the house of representatives for referral to the appropriate standing committees of the senate and the house of representatives. The department shall submit copies of the evaluation and comments to the secretary of state and the director of the Arizona state library, archives and public records.

E. On or before September 1, 2008, the department of environmental quality shall submit a report of all of the findings and recommendations made pursuant to this section to the state air quality study committee established by this act and shall submit copies of these reports to the secretary of state and the director of the Arizona state library, archives and public records.

Sec. 26. Delayed repeal

Section 24 of this act, relating to the state air quality study committee, and section 25 of this act, relating to motor fuels emissions studies, are repealed from and after December 31, 2009.

Sec. 27. Conditional enactment

A. Section 41-2083, Arizona Revised Statutes, as amended by Laws 2007, chapter 145, section 2 and this act, is effective as prescribed in Laws 2005, chapter 104, section 7, subsection A, as amended by Laws 2007, chapter 145, section 4.

B. Section 41-2124.01, Arizona Revised Statutes, as amended by section 13 of this act, is not effective unless, on or before November 1, 2009, the conditions specified in Laws 2005, chapter 104, section 7, subsection B, as amended by Laws 2007, chapter 145, section 4, are satisfied.

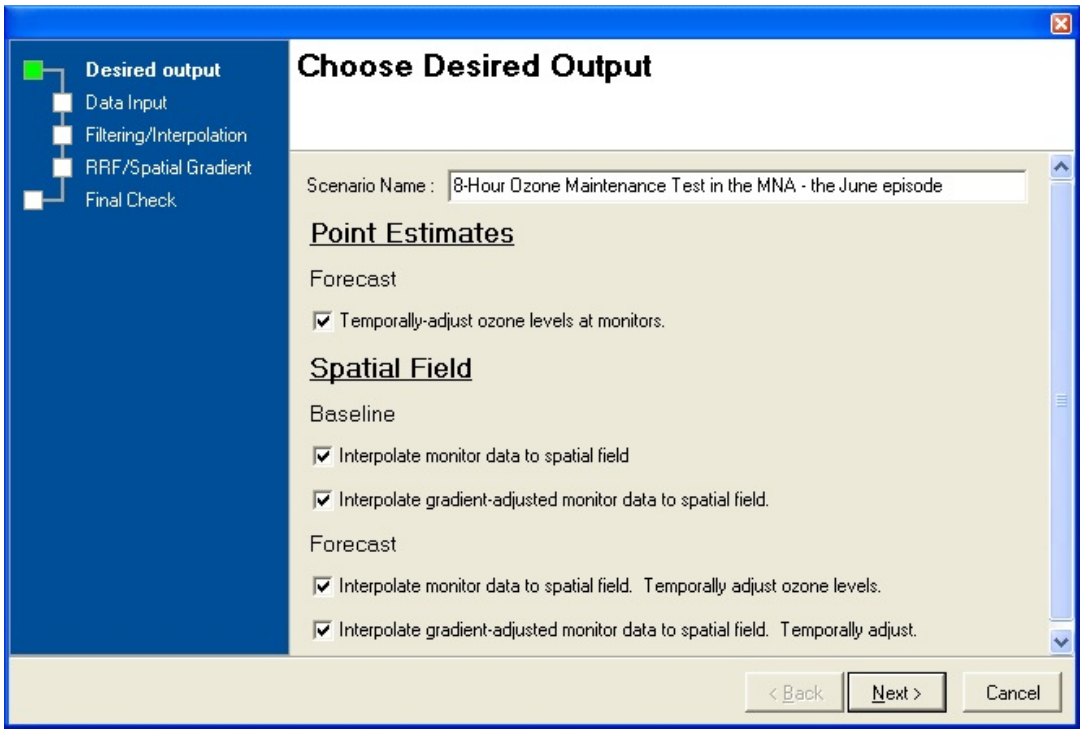
APPENDIX V

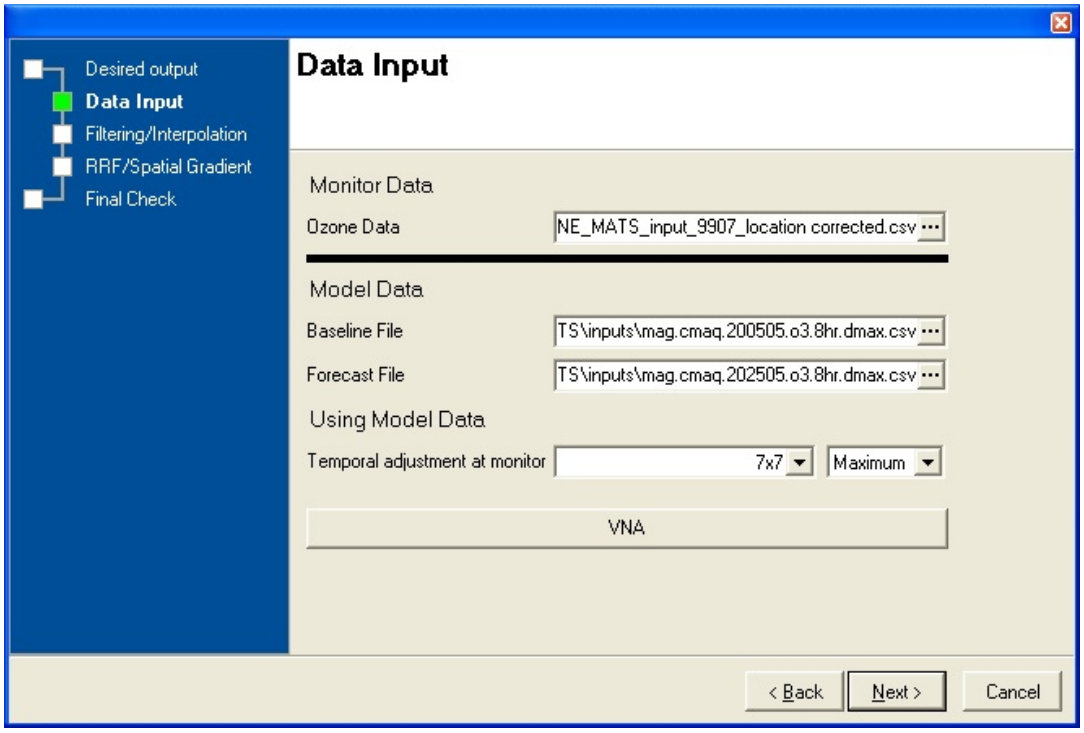
MAINTENANCE DEMONSTRATION

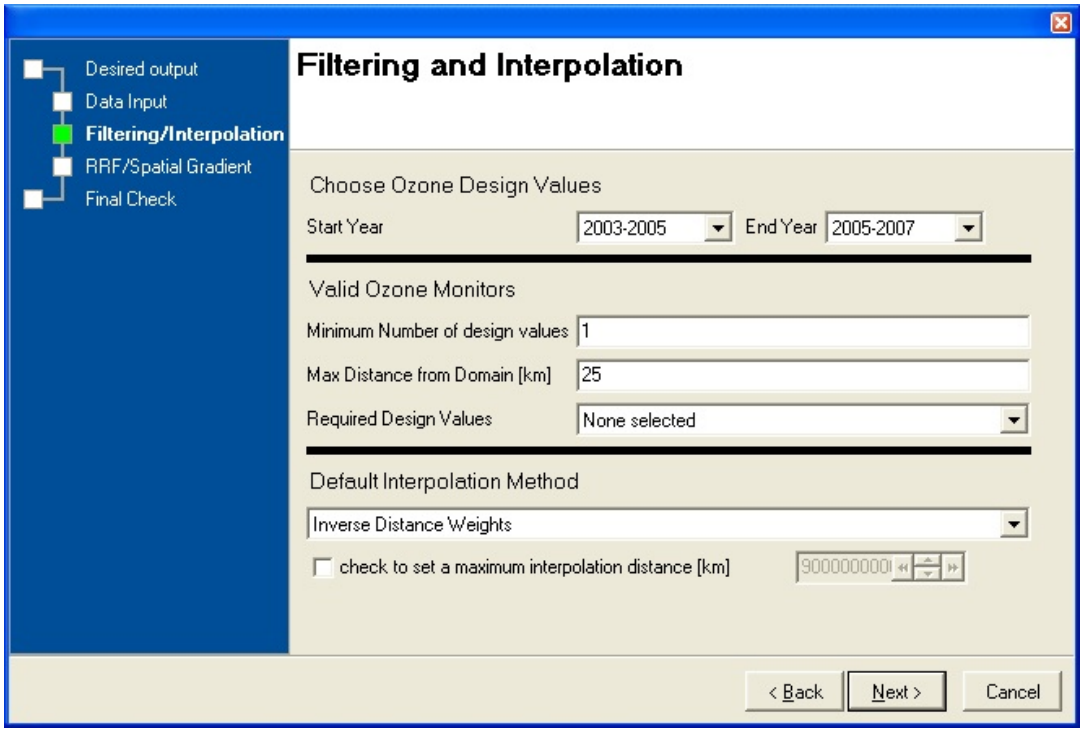
Appendix V-i

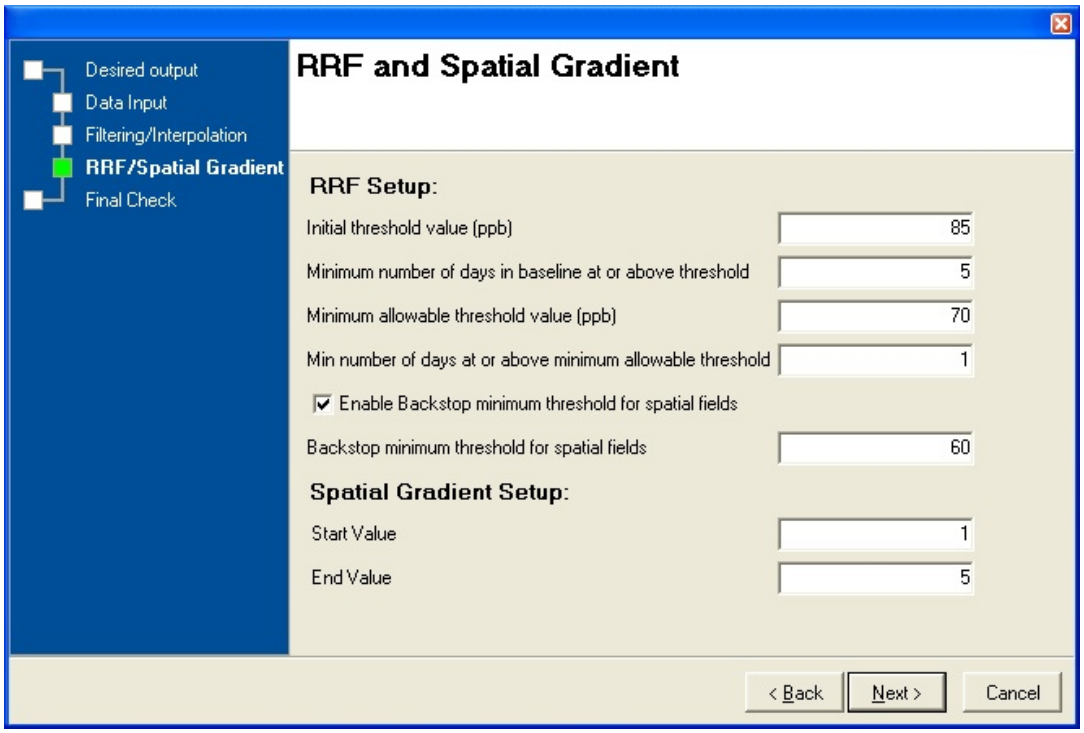
MATS Configuration

This section provides the MATS configuration used for the 8-hour ozone maintenance tests. All three episodes applied the same configuration as follows:






Desired output
Data Input
Filtering/Interpolation
RRF/Spatial Gradient
Final Check
Filtering and Interpolation
Choose Ozone Design Values
Start Year
2003-2005
End Year
2005-2007
Valid Ozone Monitors
Minimum Number of design values
1
Max Distance from Domain [km]
25
Required Design Values
None selected
Default Interpolation Method
Inverse Distance Weights
check to set a maximum interpolation distance [km]
< Back
Next >
Cancel


Desired output
Data Input
Filtering/Interpolation
RRF/Spatial Gradient
Final Check
RRF and Spatial Gradient
RRF Setup:
Initial threshold value (ppb)
85
Minimum number of days in baseline at or above threshold
5
Minimum allowable threshold value (ppb)
70
Min number of days at or above minimum allowable threshold
1
Enable Backstop minimum threshold for spatial fields
Backstop minimum threshold for spatial fields
60
Spatial Gradient Setup:
Start Value
1
End Value
5
< Back
Next >
Cancel

APPENDIX VI

SUPPLEMENTAL ANALYSES

Appendix VI-i

Maximum and Minimum Modeled Ozone Tile Plots for Each Episode

Appendix VI-i presents the maximum and minimum modeled ozone tile plots for each episode of the baseline and future years.

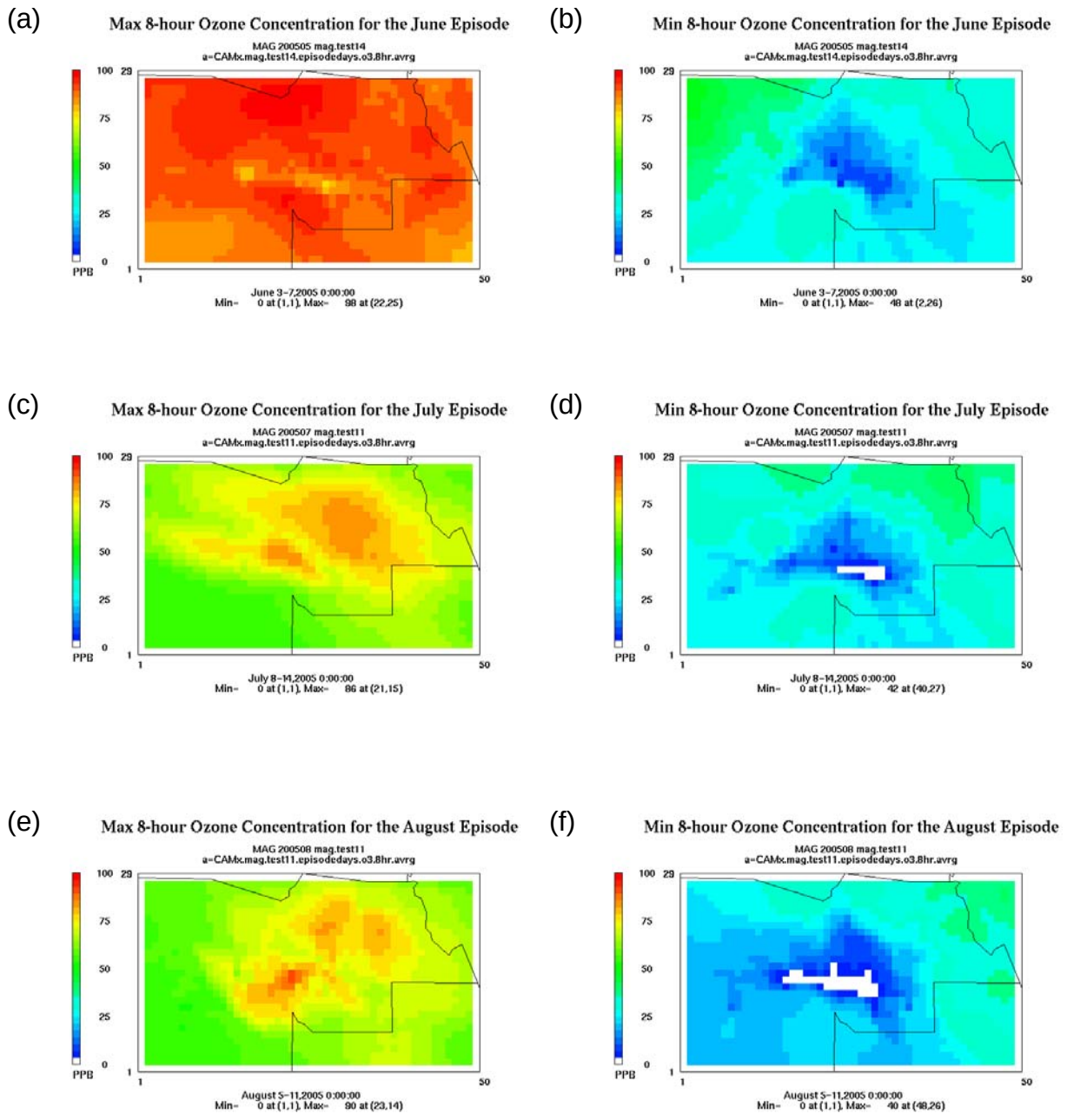


Figure 1. Maximum and minimum eight-hour ozone concentration for each episode in the baseline year (2005).

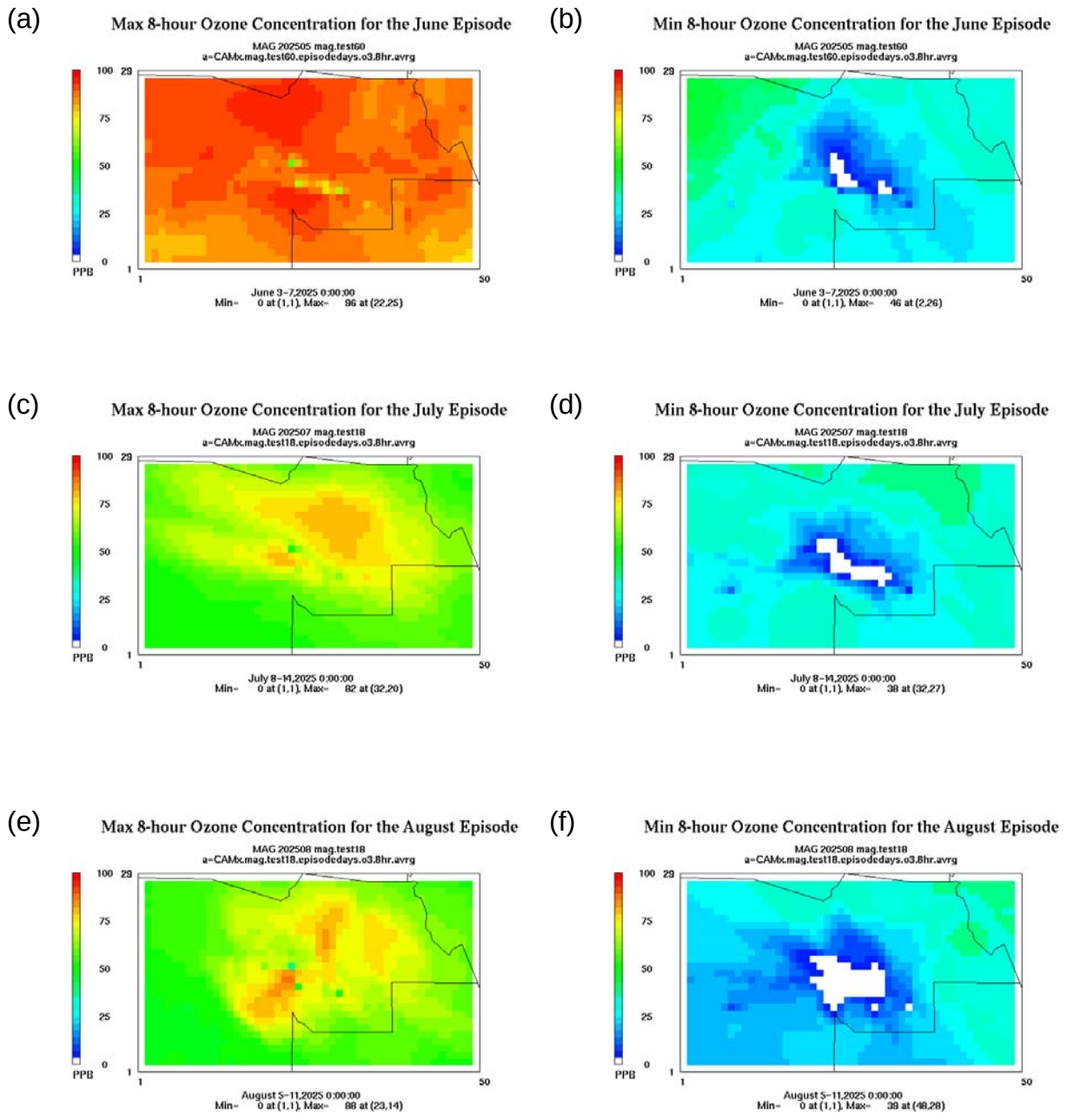


Figure 2. Maximum and minimum eight-hour ozone concentration for each episode in the future year (2025).

Appendix VI-ii

CPA Results for the July and August Episodes

Appendix VI-ii presents CPA results for the July and August episodes.

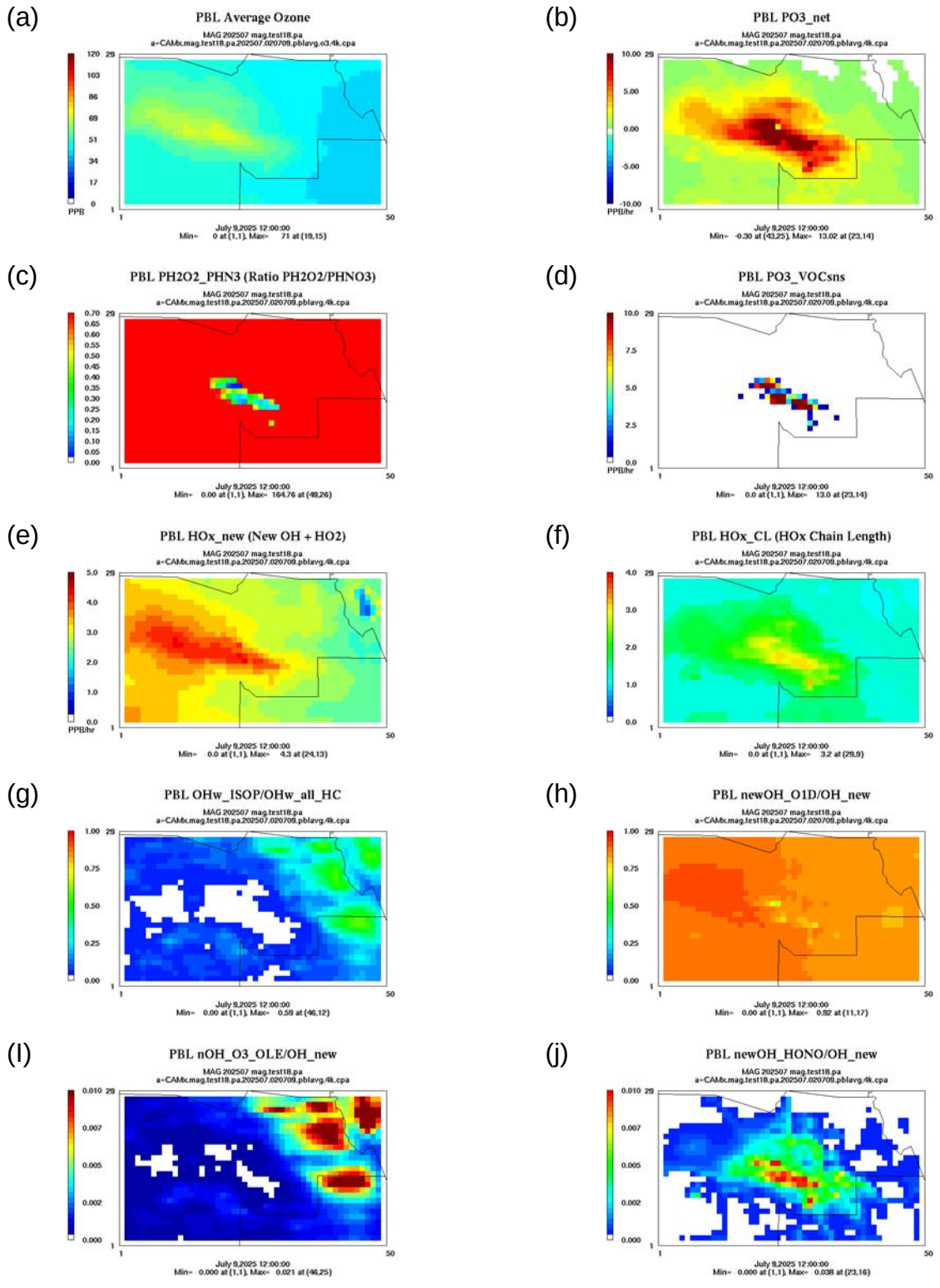


Figure 1. A series of plots showing CPA results for the future year CAMx simulations at noon on a Tuesday in July

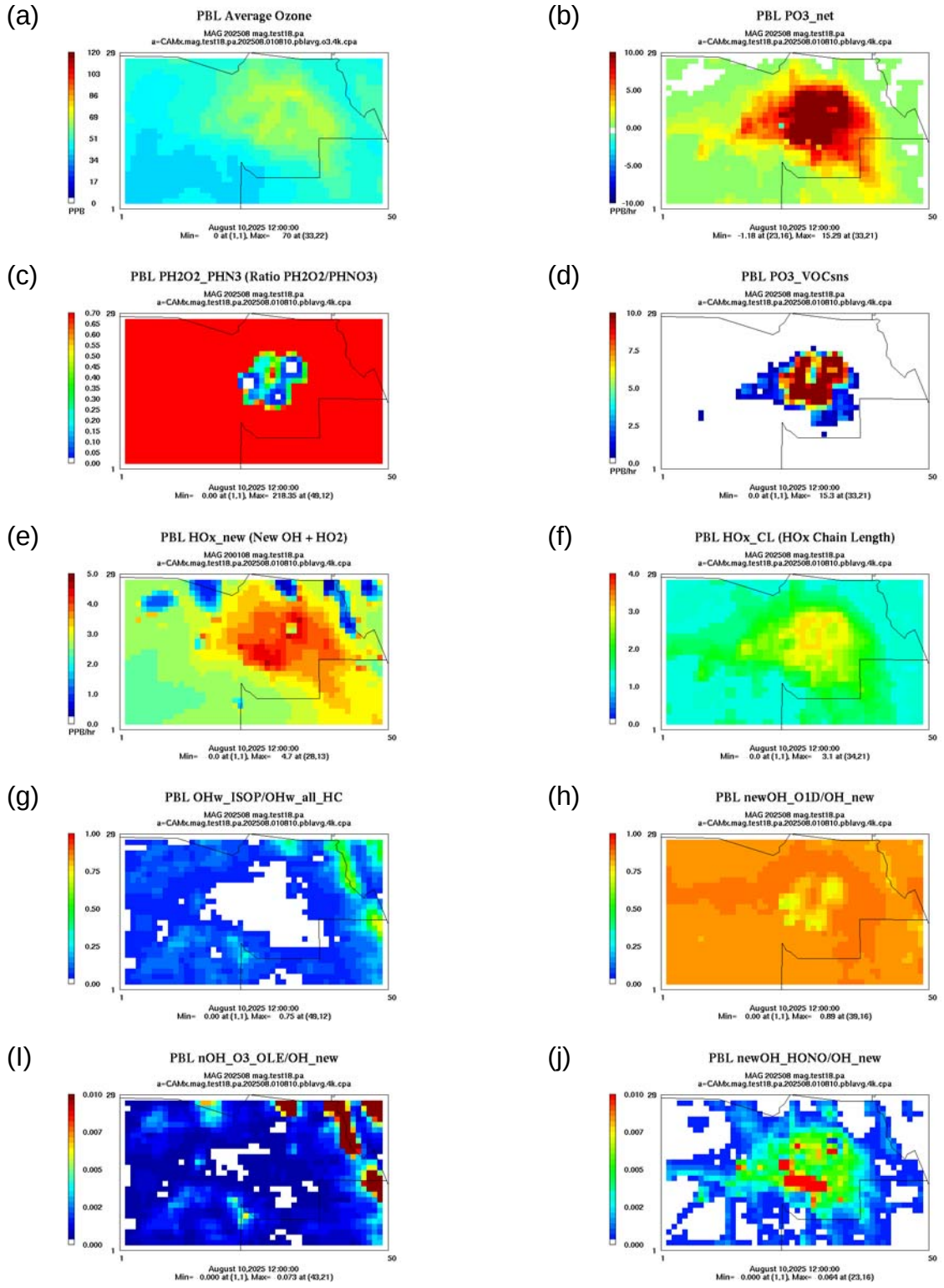


Figure 2. A series of plots showing CPA results for the future year CAMx simulations at noon on a Friday in August

Appendix VI-iii

WRF Meteorology Simulations

Appendix VI-iii describes the modeling domains, episodes selection, input data, configurations, and performance evaluation of the WRF modeling.

The National Center for Atmospheric Research (NCAR) Weather Research and Forecasting (WRF) modeling system is a next-generation mesoscale forecast model and data assimilation system (http://wrf-model.org/index.php). WRF is efficient in a massively parallel computing environment, offering many state-of-the-art physics and dynamics options that are applicable in different spatial and temporal scales. It is expected that WRF as a high effective resolution mesoscale model (Skamarock, 2004) will eventually replace the Fifth Generation Mesoscale Model (MM5) of which the development and maintenance were frozen in 2004.

MAG contracted ENVIRON to provide MM5 meteorological data for the CAMx eight-hour ozone modeling for MAG Eight-Hour Ozone Plan (MAG, 2007). MAG decided to use the same MM5 meteorology and test the WRF meteorology with air quality models such as CAMx and CMAQ for the maintenance modeling demonstration. The principal components of the WRF modeling system include the WRF Software Framework (WSF); the dynamic solver, either the Advanced Research WRF (ARW) dynamic solver developed primarily at NCAR or the Nonhydrostatic Mesoscale Model solver developed at National Centers for Environmental Prediction (NCEP); the WRF Preprocessing System (WPS); the WRF Variational Data Assimilation (WRF-Var) system; numerous physics packages contributed by WRF partners and research community; and several graphics programs and conversion programs for postprocessing. The ARW dynamic solver in WRF v2.2 that released in December 2006 was applied in this modeling study.

Modeling Domain and Selected Episodes

The WRF domain is the same as the MM5 modeling used in the maintenance demonstration (see Section II), where three nested domains are used (Table 1). The central latitude and longitude of the WRF LCP coordinate are 34°N and 111°W; and the conic true latitudes are 45°N and 33°N. The LCP central longitude aligns along the central longitude of UTM zone 12 (111°W), on which the CAMx domain is defined. The CAMx and CMAQ simulations are carried on the 12 km and 4 km domains. The CAMx and CMAQ domains are slightly inset several grid cells on each side from the WRF domains as a way to remove boundary “noise” near the WRF boundaries.

Table 1. The WRF, CAMx, and CMAQ Modeling Domains

Modeling Type	Grid Resolution	Grid Size	Grid Range (km)	Coord.
WRF	36 km	64 by 49	(-1134, -864) to (1134, 864)	LCP
	12 km	118 by 91	(-810, -612) to (594, 468)	
	4 km	61 by 40	(-234, -132) to (6, 24)	
CAMx	12 km	111 by 84	(-275, 3188) to (1057, 4196)	UTM
	4 km	50 by 29	(297, 3652) to (497, 3768)	
CMAQ	12 km	111 by 84	(-774, -576) to (558, 432)	LCP
	4 km	50 by 29	(-202, -112) to (-2, 4)	

The same vertical structures of MM5 and CAMx used in maintenance demonstration are applied in the WRF and CMAQ simulations. More details on the vertical structures of MM5 and CAMx are available in Section II.

This study conducts WRF and CMAQ modeling for the three episodes used in the maintenance demonstration (see Section V).

WRF Input Data and the Meteorological Monitoring Data

Most of the required datasets for the WRF modeling have been procured directly from the NCAR web sites. This include a terrestrial dataset such as terrain elevation, landuse/landcover (LULC), soil types, and so on (WRFM, 2008), and large-scale meteorological analysis fields (UCAR, 2008). The static geographical data has the finest resolution of 30'. The analyses are extracted from the NCEP NAM/Eta Data Assimilation System (EDAS) that provides 40 km North American analyses every 3 hours.

Meteorological observations have been collected by MAG from three monitoring networks throughout Arizona, including surface sites from the Arizona Meteorological Network (AZMET) and the NOAA/NWS, and four upper air profiler sites operated by the NOAA's Forecast Systems Laboratory (FSL). In addition, the standard NCAR/NWS hourly surface observation dataset (DS472) was obtained to augment the MAG databases and cover the entire region encompassed by the WRF domain. The DS472 dataset was used in the WRF performance evaluation.

WRF Simulation Design and Performance Evaluation

The WRF Preprocessing System (WPS) was used to define the modeling domains and interpolate the terrestrial and meteorological data onto the modeling domains. The interpolated meteorological data were then used to derive initial and boundary condition data and FDDA nudging files for WRF modeling. The boundary condition is developed for the 36 km parent domain, and the 12 km and the 4 km domains are two-way nested. The performance evaluation was made using METSTAT developed by ENVIRON. The June

episode was tested by applying different physics and dynamics options. Similar configurations were applied to the July and August episodes.

The June Episode

Physics and configuration options of the WRF model are outlined in this section. The same MM5 configuration as used for the MAG Eight-Hour Ozone Plan was applied to the WRF configuration, which has been proved to produce the best overall performance in the desert southwest (MAG, 2007). The difficulty is that several key physics options used in the MM5 modeling, such as the Pleim-Chang (ACM) boundary layer scheme and the Pleim-Xiu land surface model, are not available in the latest released version of WRF when this study was made. Therefore, the Mellor-Yamada-Janjic (Eta) boundary layer scheme and the Noah land-surface model were first tested. Kain-Fritsch (KF) instead of Betts-Miller cumulus scheme was applied, since the MM5 experiments found that the temperature and moisture performance improved noticeably with the KF scheme. Table 2 lists the configuration for the first successful run of the June episode.

The WRF average daily performance statistics of Run1 are listed in Table 3. When they are compared with the MM5 statistics as listed in Table 3-1 in Appendix III-I of the MAG Eight-Hour Ozone Plan (MAG, 2007), it is found that most WRF statistics are better than the MM5 statistics except for temperature bias. The hourly statistics of temperature (Figure 1a), however, reveals that the negative temperature bias in WRF occurs at night, while there is a minimal positive bias during the day. On the contrary, MM5 has a rather large positive temperature bias around noon, which compensates some of the negative bias at night. When the WRF meteorology from Run1 was tested with CMAQ, it was found that the overprediction of ozone on June 5 was worse than that predicted with MM5 meteorology.

Run2 was implemented with the YSU PBL scheme. However, there were still several hot spots with very high ozone concentrations on June 6 when Run2 was tested with CMAQ. The WRF Run3 for the June episode that was successfully tested with CMAQ applies the Medium Range Forecast (MRF) PBL model. The hourly time series statistics of surface wind, temperature, and humidity of Run3 are illustrated in Figure 1. The daily average performance statistics of Run3 are listed along with Run1 in Table 3. Most of the statistics are not as good as Run1, while they are very close. Figure 1a shows that both the simulated wind speed and direction agree well with the observations from May 31 to June 3, when the diurnal cycle of morning north-easterly and afternoon south-westerly wind is

Table 2. Configuration of WRF Physics and FDDA options in the first successful run for the June episode (referred to as Run 1)

Configuration Type	36 km	12 km	4 km
Land Surface Model	Noah	Noah	Noah
Surface-layer	MOJ (Eta)	MOJ (Eta)	MOJ (Eta)
Boundary Layer	MYJ	MYJ	MYJ
Sub-Grid Cumulus	KF	KF	None
Explicit Moisture	WSM3	WSM3	WSM3
Long wave radiation	RRTM	RRTM	RRTM
Short wave radiation	Dudhia	Dudhia	Dudhia
FDDA Grid Nudging (3D)	W/T/H	W/T/H	W/T/H
FDDA Grid Nudging (SFC)	W	W	W

MOJ (Eta) – Monin-Obukhov (Janic Eta) scheme; MYJ – Mellor-Yamada-Janic (Eta) TKE scheme; KF – Kain-Fritsch (new Eta) scheme; W – Wind; T – Temperature; H – Humidity

Table 3. Average daily WRF performance statistics for Runs 1 and 3 over the June 2002 episode (May 31 to June 7); values exceeding benchmarks are highlighted in bold.

Statistics Category	Benchmark	Run1	Run3
Wind Speed Bias (m/s)	$\leq \pm 0.5$	-0.23	**-0.83**
Wind Speed RMSE (m/s)	≤ 2.0	1.58	1.78
Wind Speed IOA	≥ 0.6	0.69	0.62
Wind Dir Bias (deg)	$\leq \pm 10$	8.61	**12.61**
Wind Dir Gross Error (deg)	≤ 30	**41.97**	**44.86**
Temp Bias (K)	$\leq \pm 0.5$	**-1.05**	**-1.50**
Temp Gross Error (K)	≤ 2.0	1.90	**2.09**
Temp IOA	≥ 0.8	0.95	0.94
Humidity Bias (g/kg)	$\leq \pm 1.0$	0.25	-0.39
Humidity Gross Error (g/kg)	< 2.0	1.14	1.12
Humidity IOA	≥ 0.6	**0.45**	**0.49**

notable and there is strong wind in the afternoon. On June 5, the simulated north-easterly persisted into the afternoon, while the observed wind direction shifted to south-westerly before noon. This would be caused by the passage of an upper-level trough and the associated weak front that depressed the meso-scale circulation induced by the topography of the basin. The no-nudging strategy to correct the wind direction problem was tested with WRF, but results were the same as the one with nudging. Therefore, this problem will be further manifested in the CMAQ/WRF test on June 5 when the persisted north-easterly wind caused ozone to be over-predicted. Sensitivity tests were done by applying different dynamic damping options, e.g. the gravity wave absorbing layer, the vertical-velocity damping, the sixth order numerical diffusion, but the statistics of the performance was not improved noticeably.

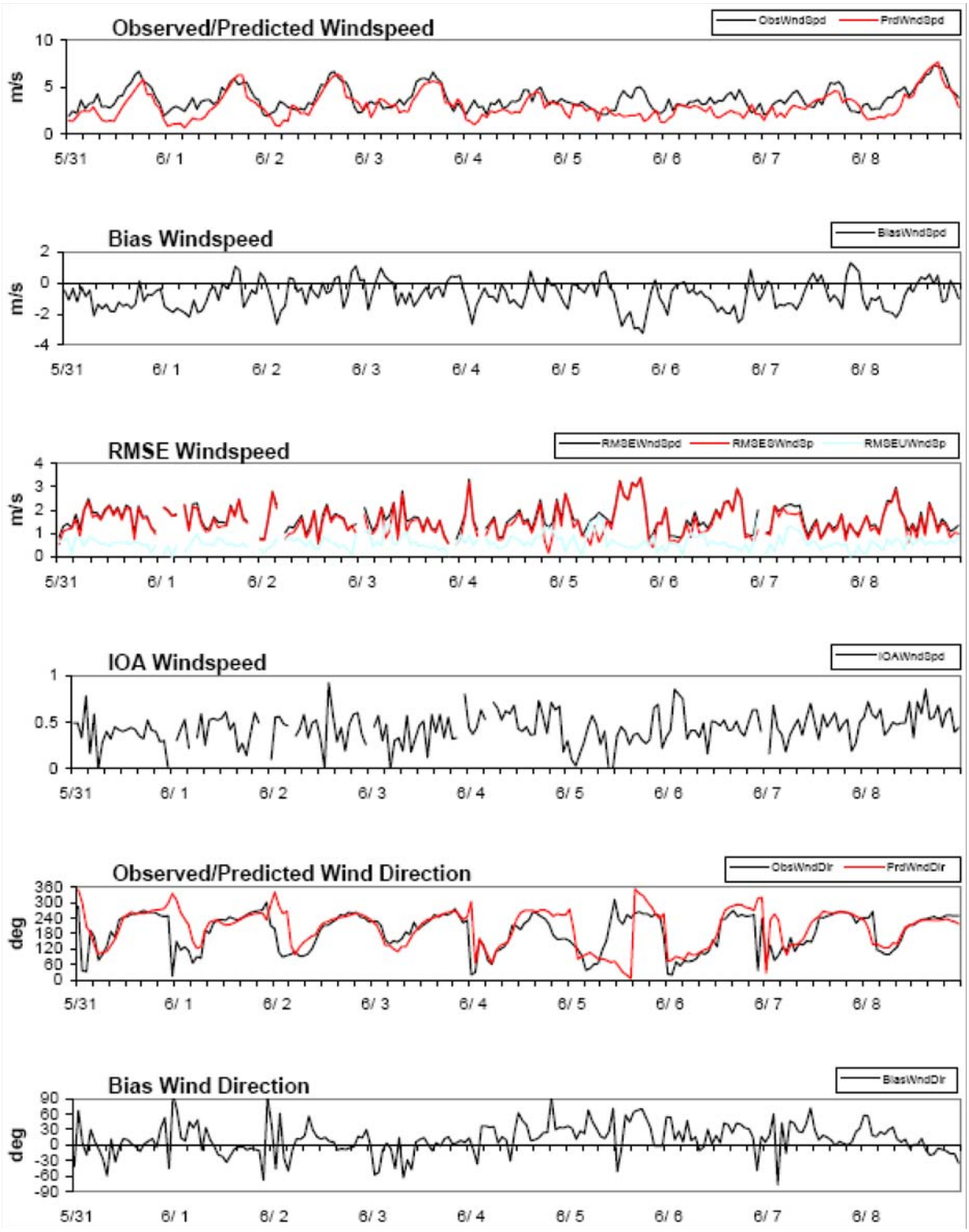


Figure 1a. Hourly time series statistics comparing DS472 wind observations to paired WRF wind predictions from Run 3 in the 4 km MNA domain over the June 2002 episode

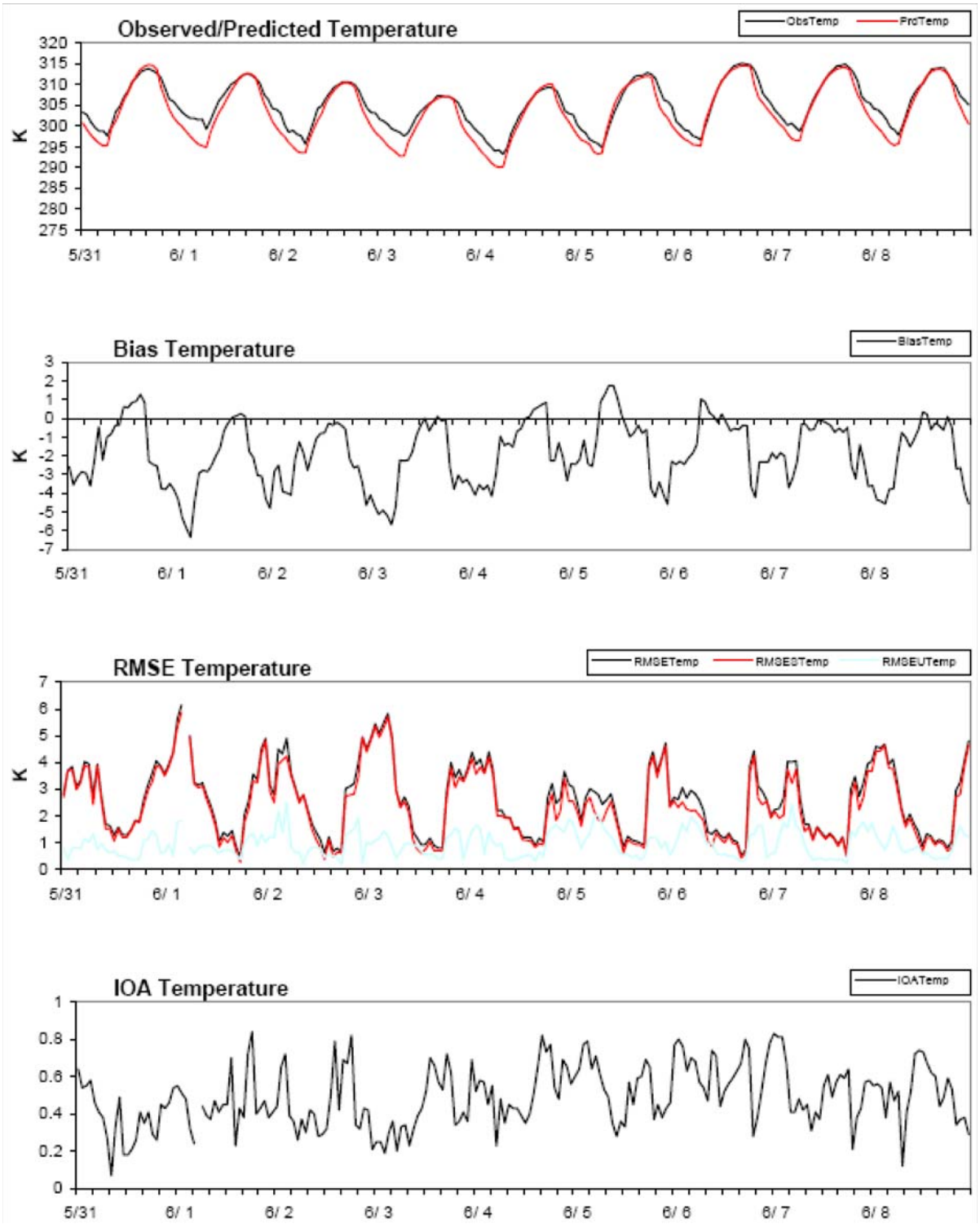


Figure 1b. Hourly time series statistics comparing DS472 temperature observations to paired WRF temperature predictions from Run 3 in the 4 km MNA domain over the June 2002 episode

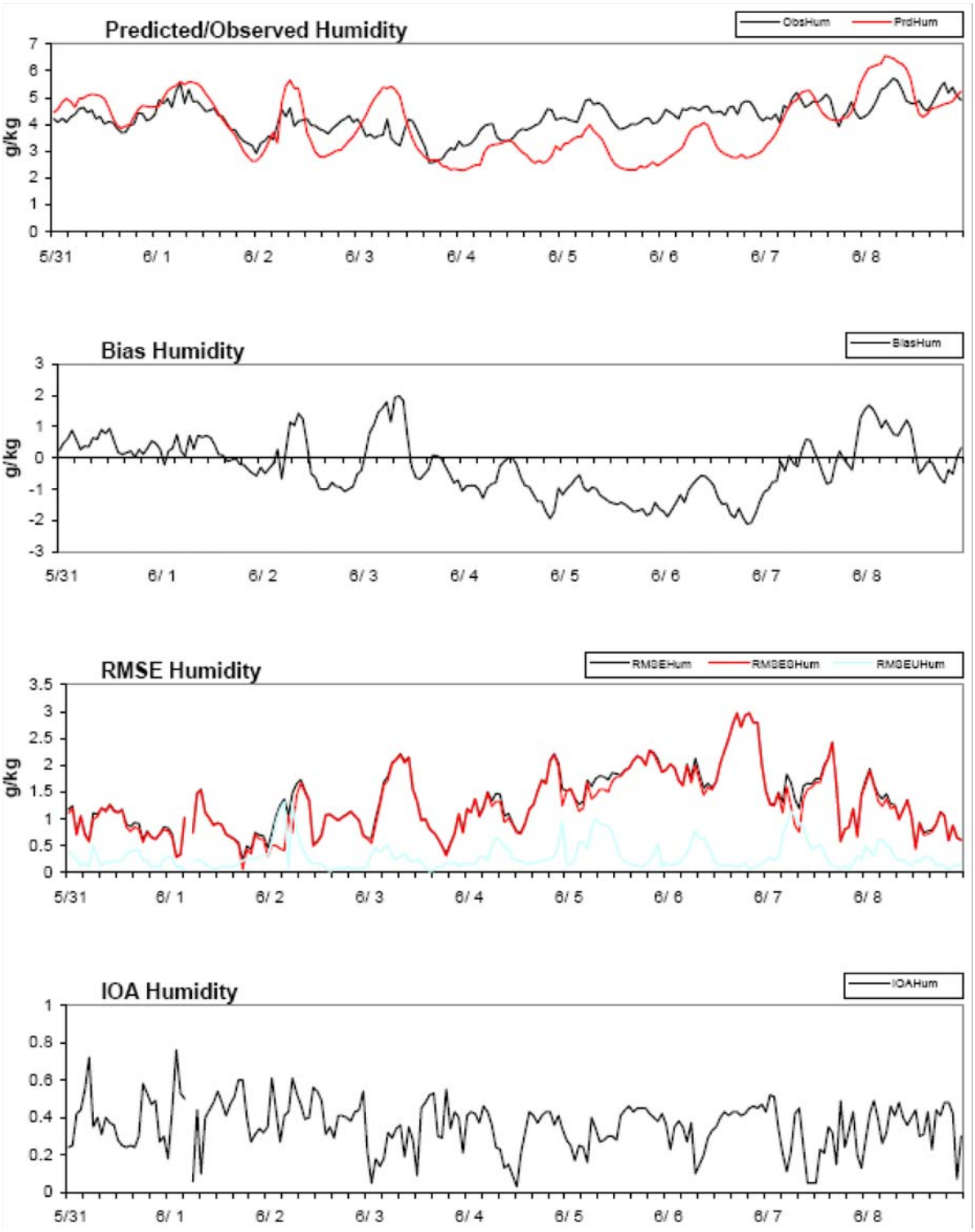


Figure 1c. Hourly time series statistics comparing DS472 humidity observations to paired WRF humidity predictions from Run 3 in the 4 km MNA domain over the June 2002 episode

The July and August Episodes

The same configurations as used in Run3 of the June episode were applied in testing WRF for the July episode. The hourly time series of surface wind, temperature, and humidity are illustrated in Figure 2. The daily average performance statistics are listed in Table 4. It appeared that wind simulation was not as good as MM5, while the temperature and humidity simulations in WRF were much better than MM5. Besides, the wind simulation of WRF was not as good as the June 2002 episode, which might be due to the persistent light wind that is hard to simulate.

The August episode is characterized with high humidity caused by frequent precipitations. A more updated and sophisticated microphysics scheme called the Thompson scheme was employed, while other configurations are the same as the July episode. The hourly time series of surface wind, temperature, and humidity are illustrated in Figure 3. The daily average performance statistics are listed along with the July episode in Table 4. Similar to the July episode, the wind simulation is a little worse than the MM5 simulation, while the temperature and humidity simulations are better than MM5. The overall performance of the August episode is the worst among the three episodes, which is also the case of the MM5 simulations.

Table 4. Average daily WRF performance statistics for the July 2002 and August 2001 episodes; values exceeding benchmarks are highlighted in red

	Benchmark	July	August
Wind Speed Bias (m/s)	≤±0.5	-1.16	-1.17
Wind Speed RMSE (m/s)	≤2.0	2.39	2.27
Wind Speed IOA	≥0.6	0.46	0.45
Wind Dir Bias (deg)	≤±10	4.01	20.07
Wind Dir Gross Error (deg)	≤30	55.44	76.81
Temp Bias (K)	≤±0.5	-1.17	0.84
Temp Gross Error (K)	≤2.0	1.88	2.19
Temp IOA	≥0.8	0.92	0.85
Humidity Bias (g/kg)	≤±1.0	0.18	-1.86
Humidity Gross Error (g/kg)	< 2.0	1.49	2.22
Humidity IOA	≥0.6	0.57	0.55

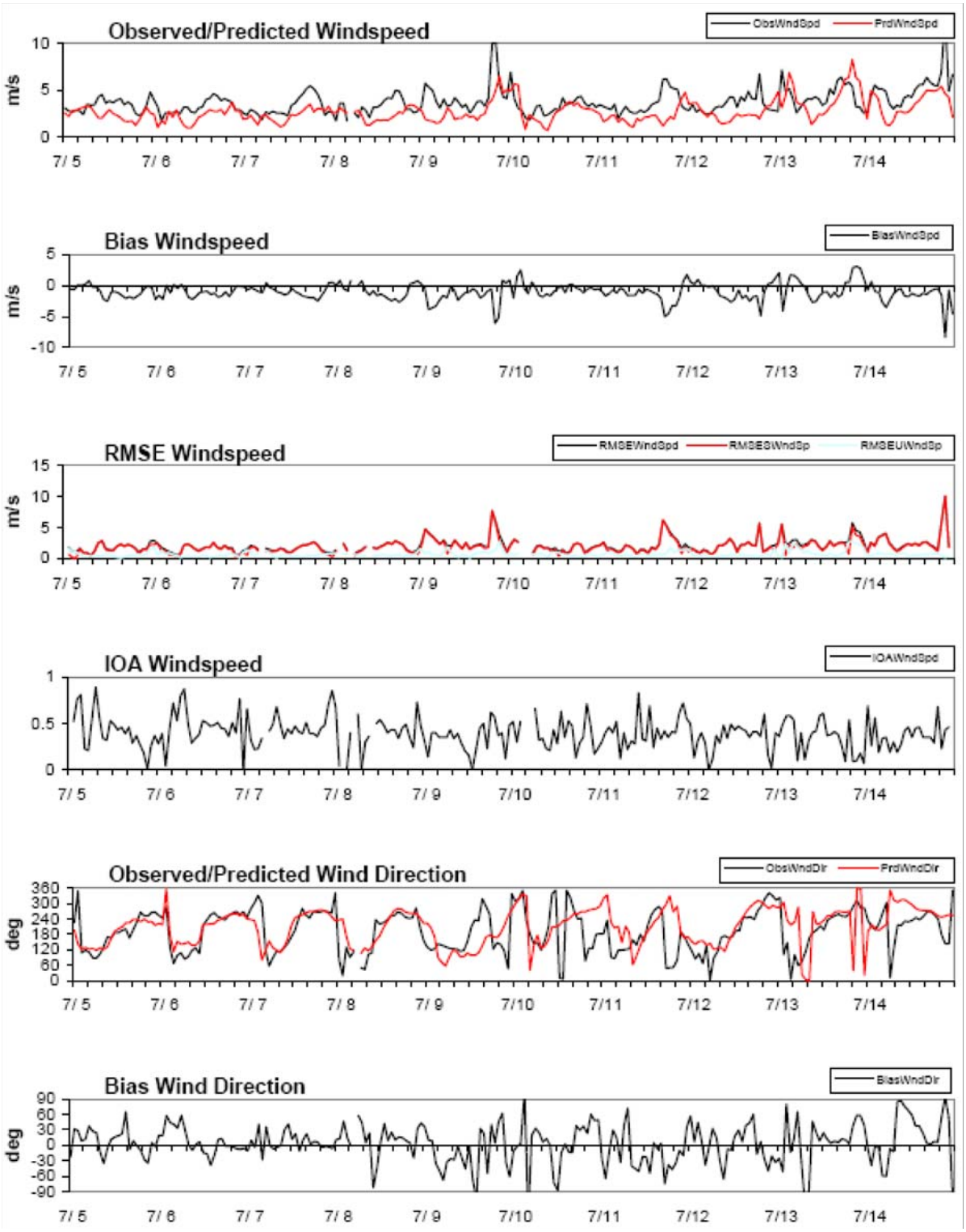


Figure 2a. Hourly time series statistics comparing DS472 wind observations to paired WRF wind predictions in the 4 km MNA domain over the July 2002 episode

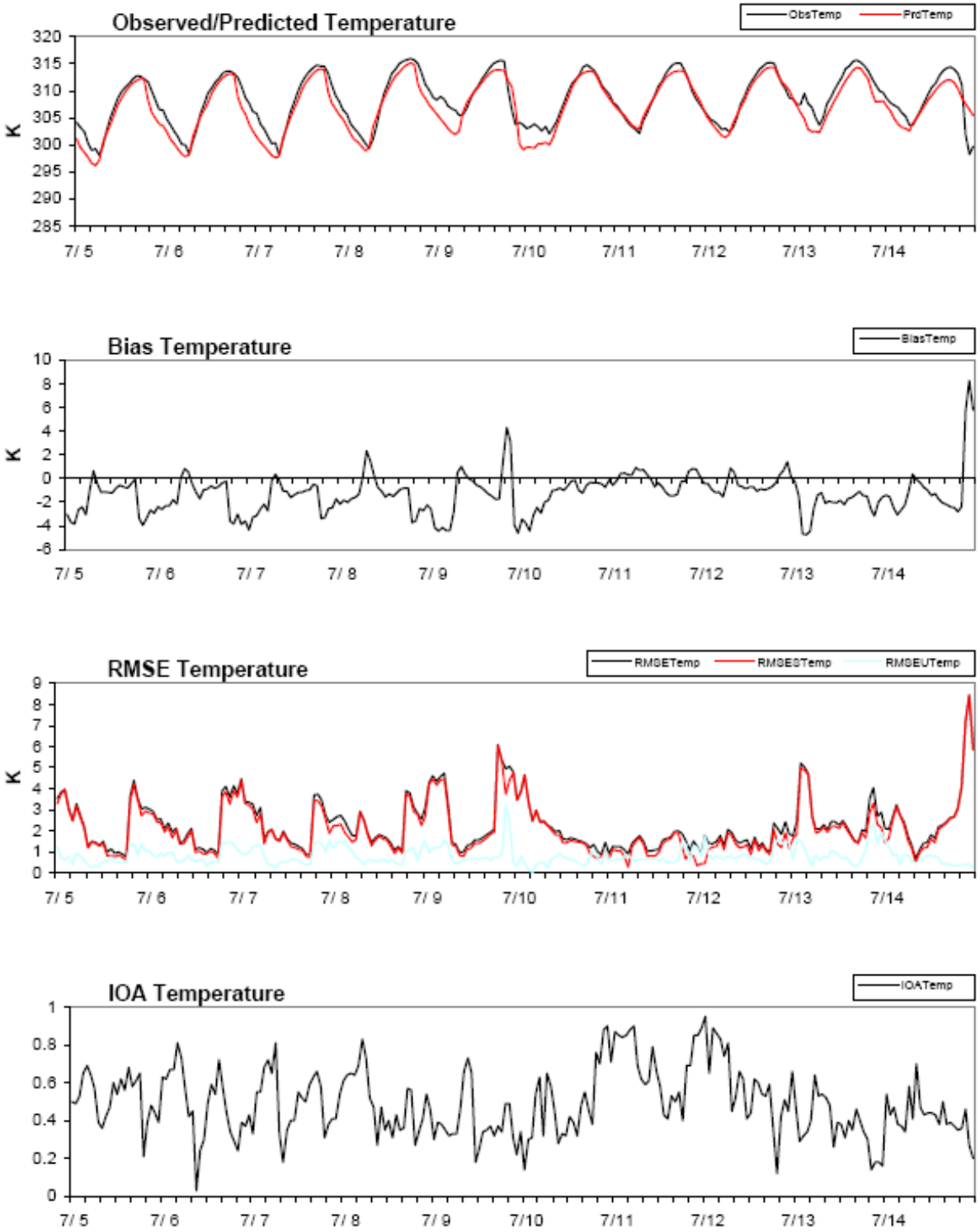


Figure 2b. Hourly time series statistics comparing DS472 temperature observations to paired WRF temperature predictions in the 4 km MNA domain over the July 2002 episode

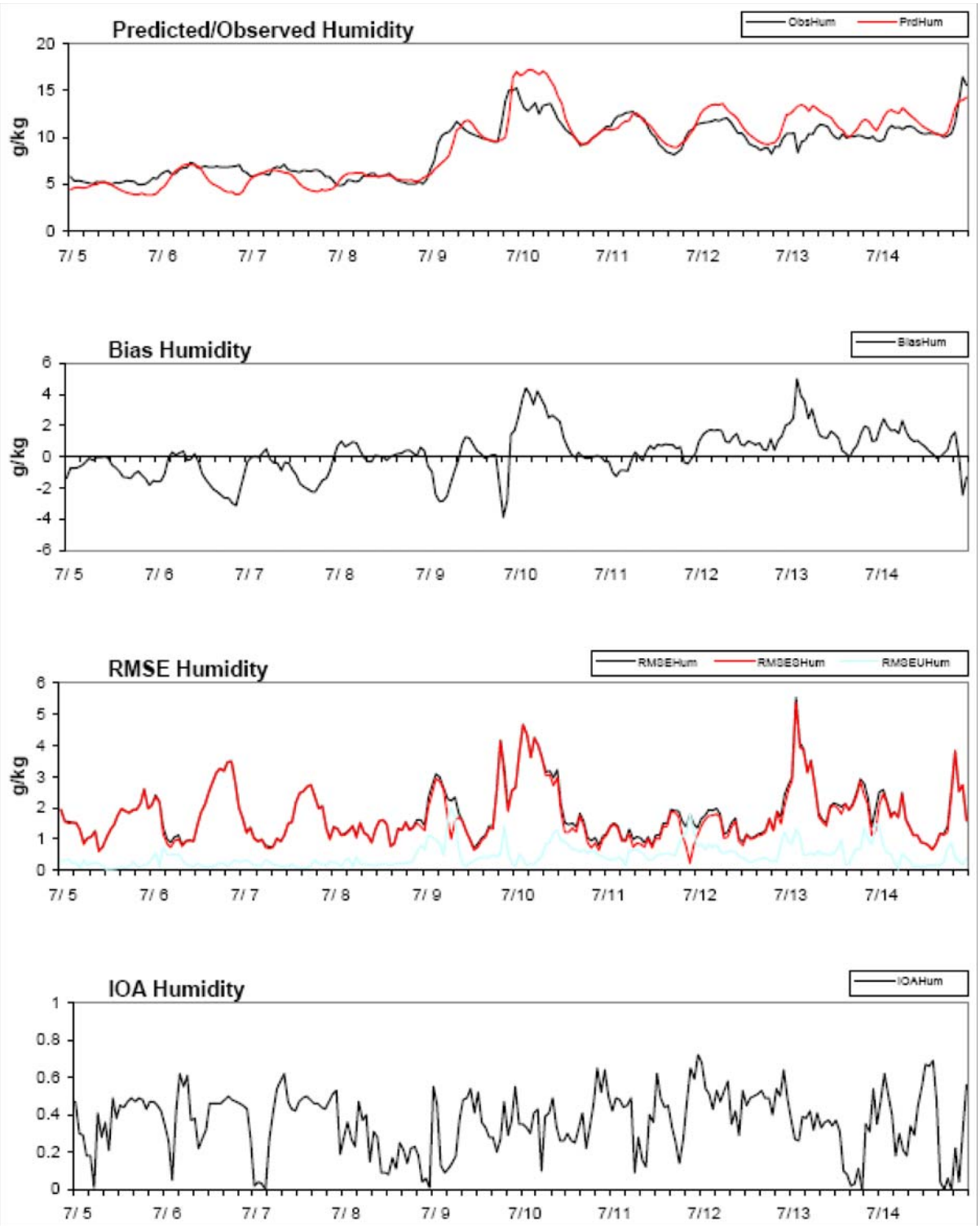


Figure 2c. Hourly time series statistics comparing DS472 humidity observations to paired WRF humidity predictions in the 4 km MNA domain over the July 2002 episode

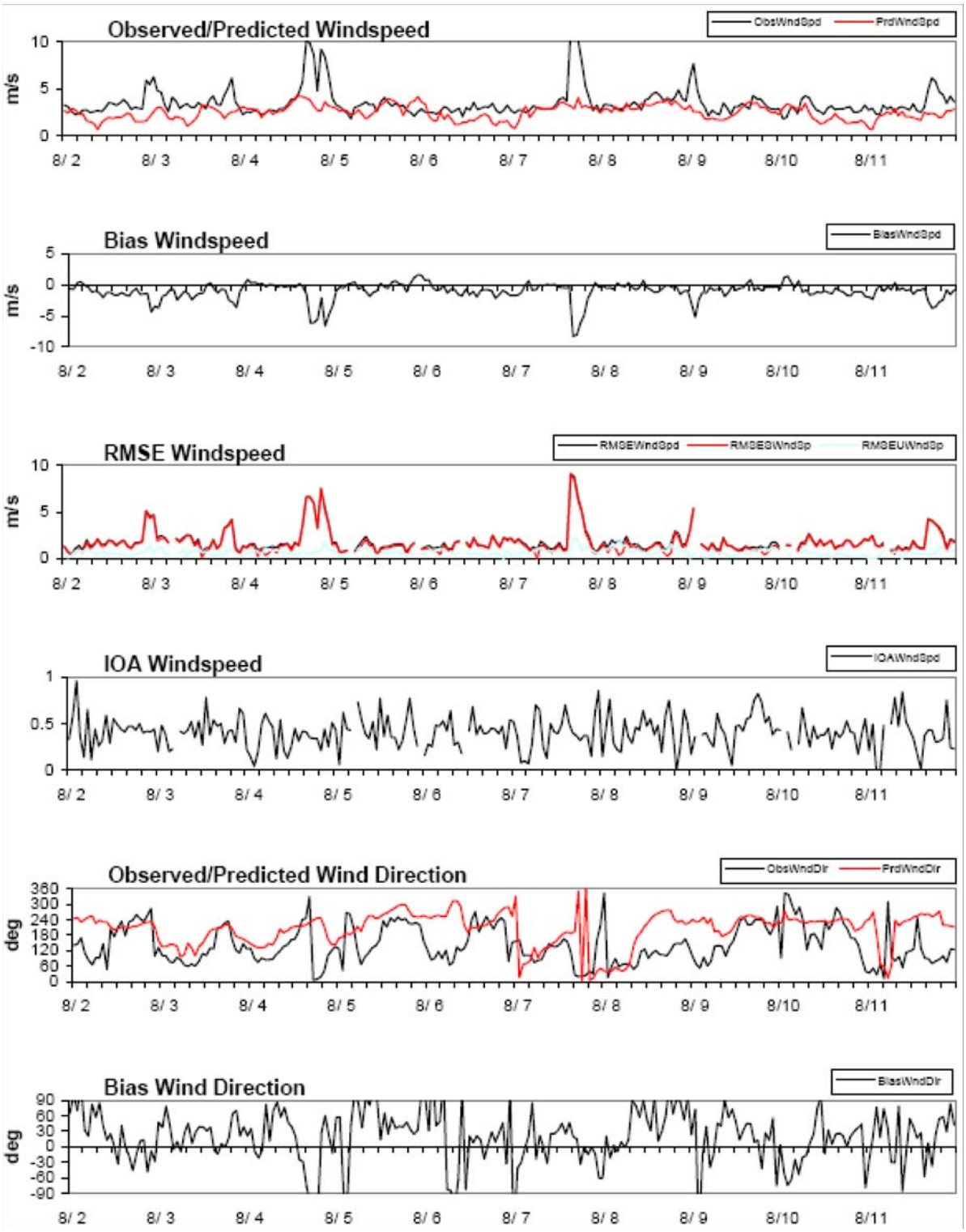


Figure 3a. Hourly time series statistics comparing DS472 wind observations to paired WRF wind predictions in the 4 km MNA domain over the August 2001 episode

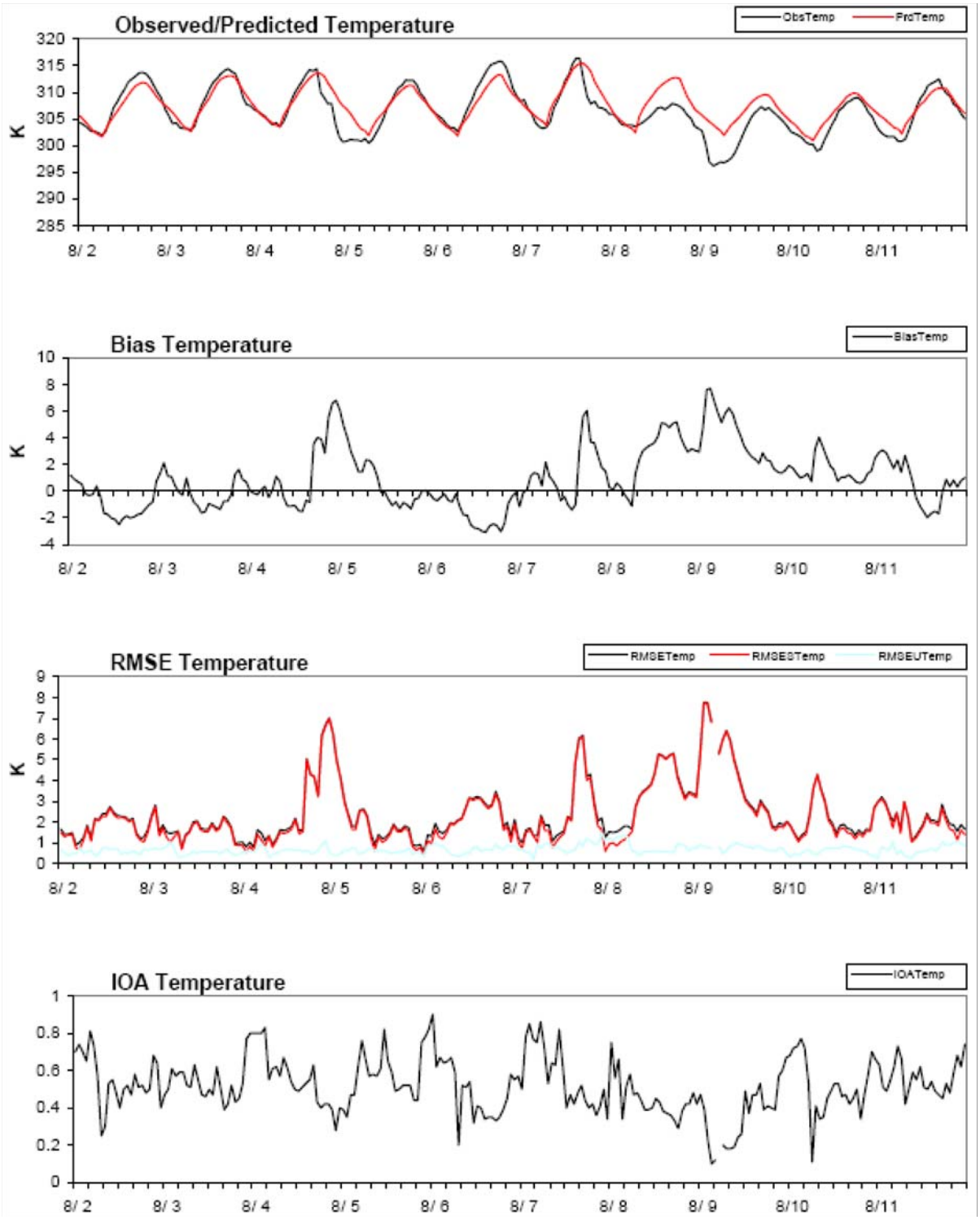


Figure 3b. Hourly time series statistics comparing DS472 temperature observations to paired WRF temperature predictions in the 4 km MNA domain over the August 2001 episode

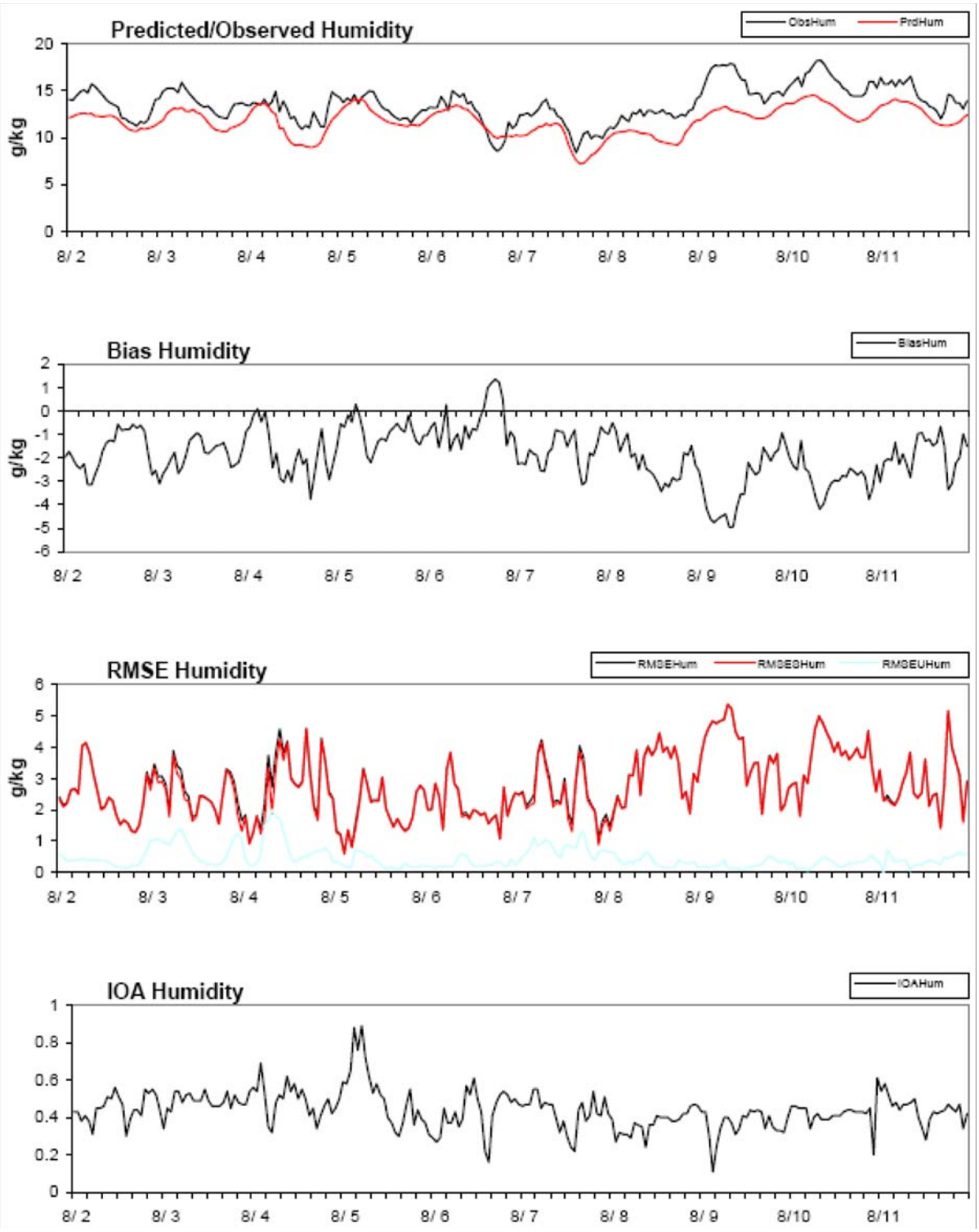


Figure 3c. Hourly time series statistics comparing DS472 humidity observations to paired WRF humidity predictions in the 4 km MNA domain over the August 2001 episode

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Performance Evaluations of CAMx and CMAQ Using WRF Meteorology

Appendix VI-iv summarizes performance evaluations of CAMx and CMAQ using WRF meteorology.

Performance Evaluation of CAMx/WRF

The meteorological data derived by WRF was converted to the CAMx compatible format using the WRFCAMx preprocessor version 2.0 provided by ENVIRON. All parameters applied for the WRFCAMx process are the same as used in the MM5CAMx process.

The CAMx/WRF configurations are the same as used in the CAMx/MM5 performance evaluation. The operational statistics of one-hour and eight-hour ozone for each episode are presented in Tables 1 and 2, respectively. The results show that the CAMx/WRF gives a satisfactory performance for the June episode, but under-predicts for the July and August episodes.

The accuracy of unpaired peak ozone prediction is somewhat enhanced for the June and July episodes by the WRF meteorology, but it is deteriorated for the August episode in comparison with the CAMx/MM5 modeling. However, the other statistical metrics showed opposite results.

For the overall performance, the CAMx/MM5 is better than the CAMx/WRF for the June and July episodes while the CAMx/WRF is better for the August 2001 episode.

Table 1. Summary of the CAMx/WRF modeling statistical performance evaluation on the one-hour ozone with a 60 ppb threshold

	Unpaired Peak Prediction Accuracy (< ±20%)	Normalized Bias (< ±15%)	Normalized Error (< 35%)
June 2002			
6/3	-21.8	-25.9	25.9
6/4	0.9	-2.4	10.3
6/5	5.1	12.6	16.4
6/6	4.1	4.9	8.3
July 2002			
7/8	4.9	-7.5	14.5
7/9	-28.8	-32.7	32.9
7/10	-22.6	-27.2	28.7
7/11	-16.8	-22.8	23.9
7/12	-14.0	-15.4	20.4
7/13	-10.9	-14.8	17.4
August 2001			
8/5	-29.0	-49.5	49.5
8/6	-21.4	-33.7	34.0
8/7	10.0	-12.2	14.3
8/8	40.4	-10.9	21.0
8/9	-19.5	-34.3	34.5
8/10	-21.4	-32.3	32.9

Table 2. Summary of the CAMx/WRF modeling statistical performance evaluation on the eight-hour ozone with a 60 ppb threshold

	Unpaired Peak Prediction Accuracy (< ±20%)	Normalized Bias (< ±15%)	Normalized Error (< 35%)
June 2002			
6/3	-23.7	-21.6	21.7
6/4	1.8	0.9	8.2
6/5	3.5	14.8	16.3
6/6	1.7	6.2	8.9
July 2002			
7/8	-0.7	-10.9	12.6
7/9	-28.7	-31.6	31.7
7/10	-24.3	-28.6	29.0
7/11	-11.1	-22.5	22.6
7/12	-11.4	-15.5	16.2
7/13	-3.9	-11.5	12.2
August 2001			
8/5	-29.2	-48.4	48.4
8/6	-20.1	-32.1	32.1
8/7	0.8	-11.4	12.9
8/8	20.8	-7.6	15.4
8/9	-21.5	-34.2	34.3
8/10	-22.9	-32.4	32.4

Performance Evaluation of CMAQ/WRF

The WRF meteorology data were converted to the CMAQ compatible data format using the EPA Models-3/Meteorology-Chemistry Interface Processor (MCIP) version 3.3. A couple of more changes in the WRF meteorology data had to be made prior to the CMAQ modeling. The first one is to change the way the nested domains are described. The central longitudes and latitudes of nested domains for the MM5 modeling are virtually fixed at the parent domain center, which renders asymmetric coordinates in nested domains if their real domain centers are not coincident with the parent domain center. However, the central longitudes and latitudes of nested domains for the WRF modeling are fixed at the real domain centers, which results in symmetric coordinates. MCIP was modified to adjust the WRF nested domains to be consistent with the MM5 nested domains in order to use emissions data developed for the MM5 nested domains without any change. The other modification is to add a function of reading land use data from the WRF terrain file, which is required by the dry deposition algorithm and other schemes of CMAQ.

The configurations for the CMAQ/WRF modeling are the same as those for the CMAQ/MM5 performance evaluation (see the Modeling Protocol of Appendix I-i). The performance of CMAQ/WRF is similar to that of CMAQ/MM5. Tables 3 and 4 list the operational statistics of one-hour and eight-hour ozone concentrations, respectively. The performance of the CMAQ/WRF is satisfactory for the June episode, but under-predicts for the July and August episodes.

The performance of the CMAQ/WRF is generally better for the July and August episodes than that of the CMAQ/MM5.

Table 3. Summary of the CMAQ/WRF modeling statistical performance evaluation on the one-hour ozone with a 60 ppb threshold

	Unpaired Peak Prediction Accuracy (< ±20%)	Normalized Bias (< ±15%)	Normalized Error (< 35%)
June 2002			
6/3	-22.4	-22.9	23.0
6/4	-3.2	-3.1	10.8
6/5	8.8	18.2	20.3
6/6	9.6	14.3	15.3
July 2002			
7/8	-1.2	-7.3	12.3
7/9	-34.7	-35.2	35.2
7/10	-26.3	-25.9	27.6
7/11	-26.4	-24.5	25.8
7/12	-22.1	-17.5	20.9
7/13	-4.0	-7.8	14.8
August 2001			
8/5	-40.8	-52.8	52.8
8/6	-26.2	-33.5	33.7
8/7	-11.0	-14.0	16.0
8/8	22.8	-7.9	16.6
8/9	-22.4	-26.9	26.9
8/10	-18.9	-24.3	26.3

Table 4. Summary of the CMAQ/WRF modeling statistical performance evaluation on the eight-hour ozone with a 60 ppb threshold

	Unpaired Peak Prediction Accuracy (< ±20%)	Normalized Bias (< ±15%)	Normalized Error (< 35%)
June 2002			
6/3	-25.7	-19.1	19.4
6/4	-6.1	-0.3	8.1
6/5	7.4	20.6	20.9
6/6	8.9	15.8	16.1
July 2002			
7/8	-3.9	-8.4	10.1
7/9	-33.7	-33.4	33.4
7/10	-24.7	-26.7	27.3
7/11	-20.2	-23.6	23.7
7/12	-21.4	-16.5	17.4
7/13	2.5	-3.6	8.0
August 2001			
8/5	-39.9	-51.9	51.9
8/6	-23.1	-31.8	31.9
8/7	-11.6	-12.9	13.6
8/8	11.8	-7.6	12.0
8/9	-20.6	-26.9	26.9
8/10	-18.2	-24.8	25.2

Appendix VI-v

Maintenance Demonstration Using CAMx/WRF, CMAQ/MM5, and CMAQ/WRF

Appendix VI-v describes maintenance demonstration results using CAMx/WRF, CMAQ/MM5, and CMAQ/WRF. The maintenance demonstration was conducted using the EPA's Modeled Attainment Test Software (MATS, Version 2.0.1) with the minimum allowable threshold value at 70 ppb.

Maintenance Demonstration Using CAMx/WRF

The estimated relative response factor (RRF) and future DV for each monitoring site are listed in Table 1. The maximum future DV for monitoring sites for each episode is highlighted in bold. The maximum future DVs in unmonitored area are listed at the end of the table. As shown in Table 1, the maintenance of the eight-hour ozone standard in 2025 is demonstrated with the maximum future DVs below 85 ppb for all three episodes.

The maximum future DV of the June episode for monitoring sites is 81.1 ppb with a wide margin of 4 ppb below the standard of 85 ppb. The unmonitored maximum is 80.8 ppb. The monitoring site with the maximum future DV is North Phoenix (NP) site, which is the same site as identified by CAMx with MM5. NP is also the site with the maximum baseline DV in 2005. The difference of future DV with the CAMx run using MM5 meteorology is generally within ±0.5 ppb. This suggests that the uncertainty introduced through the meteorological input is small, which might be attributed to the good performance of both MM5 and WRF for this episode (see Appendix IV).

The future maximum DVs of the July and August episodes are 1.7 and 3.1 ppb lower than that projected in the June episode, similar to the CAMx/MM5 results. This is possibly caused by a different pattern of regional transport and local production of ozone in each episode. However, the difference of future DV between the CAMx/MM5 and CAMx/WRF runs is as large as 1.9 ppb in the August episode, while there is no difference in the July episode. By noting that the WRF performance was the poorest for the August episode, this result suggests that the uncertainty of CAMx is introduced through meteorological input.

Table 1. CAMx maintenance test results for monitored site and unmonitored area based on WRF meteorology

Site Name	Site ID	AIRS	2005 Baseline DV (ppb)	June		July		August	
				RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)
Tonto NM	TNM	40070010	80.3	0.9654	77.5	n/a	n/a	0.9149	73.4
West Phoenix	WP	40130019	73.3	0.9798	71.8	0.9607	70.4	0.9527	69.8
North Phoenix	NP	40131004	82.7	0.9814	**81.1**	0.9607	**79.4**	0.9436	**78.0**
Falcon Field	FF	40131010	75.3	0.9745	73.3	0.9279	69.8	0.9481	71.3
Glendale	GL	40132001	76.7	0.9799	75.1	0.9603	73.6	0.9562	73.3
Pinnacle Peak	PP	40132005	77.0	0.9699	74.6	0.9375	72.1	0.9458	72.8
Central Phoenix	CP	40133002	75.7	0.9800	74.1	0.9546	72.2	0.9341	70.7
South Scottsdale	SS	40133003	76.7	0.9791	75.0	0.9457	72.5	0.9545	73.2
South Phoenix	SP	40134003	72.7	0.9813	71.3	0.9590	69.7	0.9519	69.2
West Chandler	WC	40134004	75.0	0.9771	73.2	0.9144	68.5	0.9579	71.8
Tempe	TEMP	40134005	75.7	0.9805	74.2	0.9475	71.7	0.9491	71.8
Cave Creek	CC	40134008	79.3	0.9667	76.6	0.9379	74.3	0.9495	75.2
Dysart	DY	40134010	67.3	0.9684	65.1	0.9445	63.5	0.9365	63.0
Buckeye	BE	40134011	64.0	0.9705	62.1	0.9454	60.5	n/a	n/a
Laveen	LV	40137003	70.0	0.9757	68.2	0.9438	66.0	n/a	n/a
Humboldt Mountain	HM	40139508	82.0	0.9606	78.7	0.8922	73.1	0.9234	75.7
Blue Point	BP	40139702	73.0	0.9737	71.0	0.9082	66.2	0.9391	68.5
Fountain Hills	FH	40139704	82.0	0.9701	79.5	0.9242	75.7	0.9398	77.0
Rio Verde	RV	40139706	81.7	0.9675	79.0	0.9254	75.6	0.9298	75.9
Super Site	SUPR	40139997	74.7	0.9780	73.0	0.9598	71.6	0.9488	70.8
Apache Junction	AJ	40213001	72.7	0.9711	70.5	0.9095	66.1	0.9488	68.9
Casa Grande	CG	40213003	71.0	0.9647	68.4	n/a	n/a	n/a	n/a
Queen Creek	QC	40213009	65.3	0.9706	63.3	0.9101	59.4	0.9147	59.7
Maricopa	MCPA	40213010	64.0	0.9676	61.9	n/a	n/a	n/a	n/a
Sacaton	SAC	40217001	70.7	0.9666	68.3	0.9018	63.7	n/a	n/a
Queen Valley	QV	40218001	80.0	0.9743	77.9	0.9008	72.0	0.9259	74.0
Unmonitored Area Analysis (Max)				79.8 ppb		77.8 ppb		80.8 ppb	

Maintenance Demonstration Using CMAQ/MM5

The estimated RRF and future DV for each monitoring sites are listed in Table 2. The maximum future DV among monitoring sites is highlighted in bold, and the maximum projected future DV in the unmonitored area are listed at the end of the table. As shown in Table 2, the maintenance of the eight-hour ozone standard in 2025 was confirmed by CMAQ/MM5 modeling: the future DVs of all three episodes are below 85 ppb.

The maximum future DV of the June episode among all monitoring sites is 79.1 ppb, with a wide margin of 6 ppb below the standard of 85 ppb. The unmonitored maximum is 79.3 ppb. The monitoring site with the maximum future DV is North Phoenix (NP) site, which is the same as the one identified by CAMx. The future DVs derived by CMAQ are generally 1-2 ppb lower than those derived by CAMx, while the maximum future DV of CMAQ is 1.9 ppb lower than the CAMx. This suggests that the uncertainty introduced by an air quality model is larger than that introduced by a meteorological model MM5 or WRF (e.g., ±0.5 ppb).

The future maximum DVs projected in the July and August episodes are 77.3 ppb and 76.6 ppb, which are 1.8 and 2.5 ppb lower than the one projected in the June episode, respectively. This is similar to the predictions by the CAMx/MM5 run. The monitoring site with the maximum future DV shifted to the Fountain Hills (FH) site from the North Phoenix (NP) site.

Table 2. CMAQ maintenance test results for monitored site and unmonitored area based on MM5 meteorology

Site Name	Site ID	AIRS	2005 Baseline DV (ppb)	June		July		August	
				RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)
Tonto NM	TNM	40070010	80.3	0.9537	76.5	n/a	n/a	n/a	n/a
West Phoenix	WP	40130019	73.3	0.9572	70.1	0.9211	67.5	n/a	n/a
North Phoenix	NP	40131004	82.7	0.9565	**79.1**	0.9298	76.8	0.9002	74.4
Falcon Field	FF	40131010	75.3	0.9596	72.2	0.9512	71.6	0.9679	72.8
Glendale	GL	40132001	76.7	0.9567	73.3	0.9215	70.6	n/a	n/a
Pinnacle Peak	PP	40132005	77.0	0.9547	73.5	0.9382	72.2	0.9232	71.0
Central Phoenix	CP	40133002	75.7	0.9610	72.7	0.9322	70.5	n/a	n/a
South Scottsdale	SS	40133003	76.7	0.9623	73.8	0.9515	72.9	n/a	n/a
South Phoenix	SP	40134003	72.7	0.9593	69.7	0.9212	66.9	n/a	n/a
West Chandler	WC	40134004	75.0	0.9600	72.0	0.9407	70.5	n/a	n/a
Tempe	TEMP	40134005	75.7	0.9631	72.9	0.9520	72.0	n/a	n/a
Cave Creek	CC	40134008	79.3	0.9514	75.4	0.9372	74.3	0.8980	71.2
Dysart	DY	40134010	67.3	0.9577	64.4	0.9441	63.5	n/a	n/a
Buckeye	BE	40134011	64.0	0.9628	61.6	n/a	n/a	n/a	n/a
Laveen	LV	40137003	70.0	0.9565	66.9	n/a	n/a	n/a	n/a
Humboldt Mountain	HM	40139508	82.0	0.9484	77.7	0.9177	75.2	n/a	n/a
Blue Point	BP	40139702	73.0	0.9579	69.9	0.9475	69.1	0.9726	70.9
Fountain Hills	FH	40139704	82.0	0.9596	78.6	0.9439	**77.3**	0.9349	**76.6**
Rio Verde	RV	40139706	81.7	0.9557	78.0	0.9424	76.9	0.9316	76.1
Super Site	SUPR	40139997	74.7	0.9593	71.6	0.9398	70.2	n/a	n/a
Apache Junction	AJ	40213001	72.7	0.9601	69.7	0.9348	67.9	0.9679	70.3
Casa Grande	CG	40213003	71.0	0.9517	67.5	n/a	n/a	n/a	n/a
Queen Creek	QC	40213009	65.3	0.9548	62.3	0.9287	60.6	n/a	n/a
Maricopa	MCPA	40213010	64.0	0.9537	61.0	n/a	n/a	n/a	n/a
Sacaton	SAC	40217001	70.7	0.9425	66.6	0.8906	62.9	n/a	n/a
Queen Valley	QV	40218001	80.0	0.9565	76.5	0.9133	73.0	n/a	n/a
Unmonitored Area Analysis (Max)				79.3 ppb		79.1 ppb		80.0 ppb	

Maintenance Demonstration Using CMAQ/WRF

The RRF and future DV for each monitoring sites derived by the CMAQ and WRF meteorology are listed in Table 3. The maintenance of the eight-hour ozone standard in 2025 is demonstrated with the CMAQ/WRF runs. The maximum future DV of the June episode for all monitoring sites is 79.3 ppb, with a wide margin of 6 ppb below the standard of 85 ppb. The maximum future DV in the unmonitored area is 78.9 ppb. The monitoring site with the maximum future DV is the NP site.

The future DV for the July episode is 1.5 ppb lower than that of the June episode, and 5.1 ppb lower than that of the August episodes due to the different pattern of regional transport and local production of ozone.

The difference of future DVs between the CMAQ/MM5 and CMAQ/WRF is relatively small, which indicates that the uncertainty introduced through the meteorological input is small for all three episodes.

Table 3. CMAQ maintenance test results for monitored sites and unmonitored area based on WRF meteorology

Site Name	Site ID	AIRS	2005 Baseline DV (ppb)	June		July		August	
				RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)	RRF	2025 Future DV (ppb)
Tonto NM	TNM	40070010	80.3	0.9458	75.9	0.8761	70.3	0.8901	71.4
West Phoenix	WP	40130019	73.3	0.9596	70.3	0.9361	68.6	0.9089	66.6
North Phoenix	NP	40131004	82.7	0.9590	**79.3**	0.9409	**77.8**	0.8982	**74.2**
Falcon Field	FF	40131010	75.3	0.9598	72.2	0.9208	69.3	0.8930	67.2
Glendale	GL	40132001	76.7	0.9562	73.3	0.9345	71.6	0.8953	68.6
Pinnacle Peak	PP	40132005	77.0	0.9547	73.5	0.9239	71.1	0.9060	69.7
Central Phoenix	CP	40133002	75.7	0.9638	72.9	0.9294	70.3	0.9233	69.8
South Scottsdale	SS	40133003	76.7	0.9631	73.8	0.9346	71.6	0.9006	69.0
South Phoenix	SP	40134003	72.7	0.9590	69.7	0.9293	67.5	0.8778	63.8
West Chandler	WC	40134004	75.0	0.9587	71.9	0.9265	69.4	0.8872	66.5
Tempe	TEMP	40134005	75.7	0.9647	73.0	0.9186	69.5	0.8969	67.8
Cave Creek	CC	40134008	79.3	0.9503	75.3	0.9236	73.2	0.9051	71.7
Dysart	DY	40134010	67.3	0.9552	64.2	0.9180	61.7	0.8757	58.9
Buckeye	BE	40134011	64.0	0.9596	61.4	n/a	n/a	n/a	n/a
Laveen	LV	40137003	70.0	0.9557	66.8	0.9311	65.1	n/a	n/a
Humboldt Mountain	HM	40139508	82.0	0.9473	77.6	0.8769	71.9	0.8740	71.6
Blue Point	BP	40139702	73.0	0.9592	70.0	0.9053	66.0	0.9031	65.9
Fountain Hills	FH	40139704	82.0	0.9596	78.6	0.9290	76.1	0.8987	73.6
Rio Verde	RV	40139706	81.7	0.9573	78.2	0.9129	74.5	0.8979	73.3
Super Site	SUPR	40139997	74.7	0.9600	71.7	0.9306	69.5	0.8919	66.6
Apache Junction	AJ	40213001	72.7	0.9610	69.8	0.9064	65.8	0.8931	64.9
Casa Grande	CG	40213003	71.0	0.9500	67.4	0.8885	63.0	0.8046	57.1
Queen Creek	QC	40213009	65.3	0.9541	62.3	0.9172	59.8	0.8403	54.8
Maricopa	MCPA	40213010	64.0	0.9521	60.9	0.8955	57.3	n/a	n/a
Sacaton	SAC	40217001	70.7	0.9458	66.8	0.8825	62.3	0.8393	59.3
Queen Valley	QV	40218001	80.0	0.9577	76.6	0.9075	72.6	0.8897	71.1
Unmonitored Area Analysis (Max)				78.9 ppb		75.3 ppb		75.4 ppb	

APPENDIX VII

CONCLUSIONS

Section VII does not have appendix.

RESPONSES TO COMMENTS

MAG Responses to Comments on the Draft Technical Support Document for Ozone Modeling in Support of the Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area

Comments received from EPA in an email from Wienke Tax
Dated November 24, 2008

Comments on Maintenance Plan in General

1. **Comment:** On page ES-1, first bullet under Clean Air Act requirements - it is not a requirement of the CAA for redesignation that we approve the June 2007 Eight Hour Ozone Attainment Plan. I would recommend deleting this bullet. (We will consider this plan when we act on the maintenance plan, but may not need to approve the entire plan in order to redesignate the area.)

   Response: The bullet has been deleted.

2. **Comment:** Where you mention Section 110, I would always add "of the Clean Air Act" to avoid confusion. It appears on page 1-5 in the first full paragraph, and again on page 2-8, 3rd paragraph from the bottom. (There are other references to Section 110 in the plan, but they included "of the CAA".)

   Response: These additions have been made.

3. **Comment**: To avoid confusion on the part of the public, I would add some text prior to Tables 2-1, 2-2, and 2-3 explaining the 8-hour ozone standard, fourth highest high averaged over 3 years. If you don't know how the standard is calculated, it appears that 3 monitors violated in 2005 and 1 in 2006.

   Response: MAG added the following text to Page 2-2 of the Maintenance Plan: “Tables 2-1 through 2-4 show the four highest eight-hour ozone concentrations at each monitor for the years 2005 through 2008, respectively. A violation of the standard occurs when the fourth-highest value at each monitor, averaged over three consecutive years, is 0.085 ppm or higher.”

Comments on Modeling

1. **Comment:** The modeling analyses presented in the draft appear to be more than adequate for support of the maintenance demonstration, and to address the expanded scope of analysis described in EPA's "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze", EPA-454/B-07-002, April 2007. However, EPA believes the document and the maintenance demonstration could be strengthened by the inclusion of additional text relating to conclusions reached from the supplemental

analyses described in draft TSD sections VI-2 on Process Analysis, VI-3 "Photochemical Source Apportionment", and VI-4 "Decoupled Direct Method" (pages VI-I through VI-22, or 163-184 in PDF file). Each of these sections describes results of analyses that are helpful for understanding the ozone episodes modeled, and in some cases, how they are likely to respond to controls. The EPA guidance document, at section 7.0 recommends "additional analyses that.... enhance the assessment of whether the planned emissions reductions will result in attainment. ... States should review these supplemental analyses, in combination with the modeling analysis, in a 'weight of evidence' assessment of whether each area is likely to achieve timely attainment." In keeping with these goals of supplemental analyses, EPA recommends that MAG review the results of the analyses presented, and briefly summarize how each supports the results of the maintenance demonstration modeling. That is note, results that support the conclusion of continued NAAQS maintenance, and if possible, results that corroborate the qualitative features of the model's response to controls and of the conceptual model of ozone formation in the area. This text might be added to these sections, or possibly included under Weight of Evidence.

Response: The following text has been added at the end of each analysis:

Chemical Process Analysis - “The CPA results indicate that anthropogenic emissions affected the maintenance of the eight-hour ozone standard inside and outside the urban plume in the following way: NOx emission reductions from onroad and nonroad sources appear to contribute to a decline in ozone concentrations outside the urban plume, while VOC emission decreases from onroad and nonroad sources and NOx emission increases from point sources seem to contribute to a decline in ozone concentrations inside the urban plume.”

Photochemical Source Apportionment – “The results of the photochemical source apportionment analysis show that the NOx contribution to high ozone concentrations is greater than the VOC contribution, onroad mobile sources are the major contributor among anthropogenic emission sources, and the impact of both local and boundary emissions on local ozone concentrations is substantial. Therefore, NOx control outside the urban plume, onroad emission controls, and the implementation of federal, state, and local government emission control programs all contribute to maintaining the eight-hour ozone standard in 2025.”

Decoupled Direct Model – “The DDM analysis reveals that the ozone formation over the MNA is significantly influenced by the boundary condition transported from the north side in the June episode. This result supports that anthropogenic VOC and NOx emission reductions at the boundaries contributed to the maintenance of the eight-hour ozone standard in 2025.”

2. **Comment:** An additional minor point is that draft TSD section VI-2 (page VI-3, or 165 in PDF file) describing Chemical Process Analysis (CPA) is labeled "indicator species". As used in EPA guidance the document and elsewhere, this term refers to measured species, rather than modeled. In the absence of modeling, or for comparison with modeling, such ratios can indicate the degree to which ozone formation is NOx-limited or NOx-saturated. Since this is not the type of analysis described in this section, EPA suggests a title of "Process Analysis" or something comparable. A similar comment would apply to most other uses of "indicator species" in the document.

   Response: This correction has been made.

Comments received from the Arizona Department of Environmental Quality in a letter from Steven E. Peplau dated November 25, 2008

Emissions

1. **Comment:** In the 2005 modeling, the onroad NOx emissions showed a decrease of 9% from June to August (2005), and in the 2025 modeling, the onroad emissions showed a decrease of 5% from June to August (2025). One would expect the summer traffic numbers to be somewhat constant from June to August, as shown by the onroad VOC emissions for the same three-month period. This expectation is also reflected in the modeled VOC emissions, which increased by 1% from June to August (2005), and increased by 2% from June to August (2025). Please explain why NOx is decreasing for the time periods.

   Response: Both temperature and humidity affect onroad VOC and NOx emissions. When the temperature is higher, more VOC evaporation occurs, while higher humidity lowers NOx emissions (ENVIRON, 2003). MAG employed day-specific temperature and relative humidity to run MOBILE6 in developing the daily onroad emissions. Temperature and relative humidity in August are generally higher than those in June. For example, the maximum temperature and relative humidity at the Supersite were 91.0 F and 51.1% on June 3, 2005, and 103.5 F and 61.4% on August 6, 2005. Therefore, higher temperature and relative humidity on August 6, 2005 contributed to higher evaporative VOC emissions and lower NOx emissions in comparison with those emissions on June 3, 2005.

2. **Comment:** We have compared the current document with MAG's previous Ozone Study "Eight-Hour Ozone Plan for the Maricopa Nonattainment Area" (June 2007) and have found several important differences:

   The emission ranges for the June 2007 report graphs (August 24, 1999) and the November 2008 report graphs (June, July and August 2005) are listed below. It would be helpful if the ranges could be standardized for these cases.

2007	2008	2007	2008
NOx		VOC	
0 - 1	2 - 50	0 - 1	41 - 50
2 - 250	51 - 200	2 - 250	51 - 200
251 - 500	201 - 600	251 - 500	201 - 600
501 - 1000	601 - 1200	501 - 750	601 - 1200
1001 - 1497	1201 - 5045	751 - 970	1200 - 5295

Response: MAG provided emission density plots for August 24, 1999 in the One-Hour Ozone Maintenance Plan (March 2004), for the August 2001 and June and July 2002 episodes in the Eight-Hour Ozone Plan (June 2007), and for the June, July, and August 2005 episodes in the Eight-Hour Ozone Maintenance Plan (November 2008). These emission density plots were presented to verify the robustness and accuracy of the spatial allocation of emissions, to identify the locations of high emissions, and to investigate the spatial relationship between emissions and ozone predictions. Consistent ranges for the emission density plots were used in the spatial comparison of the baseline and future year emissions in each plan. However, the application of the same emission ranges to the emission density plots across different ozone plans and years levels out the distinctive spatial emission distributions of sources which are typical of each plan. This is the reason that the same emission ranges were not used for the emission density plots in the different ozone plans.

3. **Comment:** In the Base Case (August 24, 1999) MAG provides graphs for Onroad (VOC and NOx) and Background (VOC and NOx), while in the current document (Nov 2008) there are three graphs for Onroad (VOC and NOx), Anthropogenic (VOC and NOx), and a third category of all sources (VOC and NOx).

   Response: In developing the 8-hour ozone attainment and maintenance plans (June 2007 and November 2008), it was found that the emission density plots for the Background category were of limited use because the Background category includes emissions from point, area, and nonroad sources, but not onroad and biogenic sources. The emission density plots for the Background category were replaced with emissions density plots for the Anthropogenic category (all man-made source emissions such as point, area, onroad, and nonroad sources, but not biogenic sources) and the All Sources category (all emission sources including biogenic sources) because comparison of the emission density plots for these two categories allows the impact of biogenic sources to be evaluated.

4. **Comment:** The lack of consistency between the two modeled years, 1999 and 2008, reduces the ability to show the trends in Ozone precursors (VOC and NOx) between modeling years or to make any significant conclusions concerning Ozone hot spots. It definitely reduces the usefulness of the emission inventory and modeling data.

   Response: MAG conducted the one-hour ozone maintenance modeling demonstration for the August episode of 1999 (e.g., August 24, 1999), while the eight-hour ozone maintenance modeling demonstration was based on baseline (2005) and future (2025) year emissions. The eight-hour ozone maintenance modeling performed in 2008 is different from the one-hour ozone maintenance modeling conducted in 2004 in terms of models (e.g., MAGBEIS2 vs. MEGAN, EPS2 vs. EPS3, UAM-IV vs. CAMx, etc.), assumptions, input data, modeling domain, EPA modeling guidelines, etc. For example, the latest biogenic models (e.g., MEGAN or GloBEIS) estimate substantially higher VOC emissions than the older version of biogenic models (e.g., MAGBEIS2 or BEIS2). Therefore, ozone precursor

emissions developed with different versions of models or input data may not show any consistent emission trends between modeling years due to the aforementioned differences.

MOBILE6 Modeling

1. **Comment:** MAG used MOBILE6 default diesel fractions, documented in a MOBILE6 technical document written in 2001 (Fleet Characterization Date for MOBILE6: Development and Use of Age Distribution, Average Annual Mileage Accumulation Rates, and Projected Vehicle Counts for Use in MOBILE6, EPA, September 2001). Those numbers were derived from a study conducted in 1996. The 1996 data seems outdated. ADEQ suggests the ADOT local registration data be compared with the MOBILE6 defaults as a check on the validity of this set of assumptions.

   Response: MAG did test locality-specific diesel fractions derived from the vehicle registration data of Maricopa County for MOBILE6 runs. Use of these diesel fractions derived from the local registration data resulted in an extraordinarily high VMT distribution of Light Duty Diesel Vehicles (LDDVs) and Light Duty Diesel Trucks (LDDTs) on highways and arterials. For example, in January 2008, the vehicle registration data for Maricopa County indicate a total of 53,795 vehicles registered as LDDVs and LDDTs, and 59,540 vehicles registered as Heavy Duty Diesel Vehicles (HDDVs). Using the diesel fractions derived from the vehicle registration data for Maricopa County resulted in a 22% VMT distribution of LDDVs and LDDTs on freeways and arterials. In comparison, the MOBILE6 default diesel fractions provide only a 2% VMT distribution of LDDVs and LDDTs to the total VMT distribution of diesel vehicles. This is the reason that MAG used the national diesel fraction data, provided as the default values in MOBILE6, instead of local diesel fraction data, which was highly unrealistic.

2. **Comment:** For committed measure #2, MAG showed a table demonstrating the cut points for LDGV, LDGT1 and LDGT2 (App. IV-xv-5). According to VEI, the cut points shown in this table are actually for LDGV, LDGT1+LDGT2, and LDGT3+LDGT4. MAG also mentioned that LDGV cut points were used in block 1, LDGT1 in block 2 and LDGT2 in block 3. However, MOBILE6's definition of vehicle blocks is different from ADEQ. MOBILE6 requires the cut points of LDGV and LDGT1 in block 1, those of LDGT2 and LDGT3 in block2, and those of LDGT4 in block 4. EPA suggested multiple runs to be performed and results merged to solve this problem.

   Response: Since MOBILE6 does not simulate Arizona's IM147 test, ADEQ provided the methodology to model the IM147 test using the IM240 program parameters of MOBILE6 in ADEQ's memorandum to MAG on May 28, 2001. The cutpoints described on App. IV-xv-5 are based on the memo and cutpoint file ADEQ provided. The memo indicated that *"IM147 test went into effect in Maricopa County in January 2000. Research conducted to develop the test, however, shows that the IM147 test*

has nearly the same ability to identify excess emissions as the IM240 test. The IM147 test provides 97.9% of the benefit of the IM240 test with final cutpoints for CO, 85.6% for HC, and 77.5% for NOx. The MOBILE6 Users Guide states that four blocks of 75 cutpoints are required. Note that there is not testing of heavy-duty gas vehicles in IM147; these vehicles are only required to take a loaded/idle and anti-tampering test. Consequently, the values entered in this fourth block are of no consequence. The third block - for light-duty gas trucks #4 - can take its cutpoints from the LDGT2 of the attached table. The first and second blocks, however, are impossible to map accurately into the cutpoints now in effect. The first block requires a single set of cutpoints for both light-duty gas vehicles and light-duty truck #1, but the cutpoints of the present IM147 treat these two groups separately. I would recommend that the first block take its values from the LDGV cutpoints and the second block from the LDGT1 cutpoints." If the instructions in ADEQ's memo are no longer valid, please provide MAG with I/M cutpoint data and an official memo which describes the new modeling methodology for IM147. The new methodology will be used in future ozone modeling.

Photochemical Modeling

Modeled Episodes

1. **Comment:** The EPA Guidance on the *Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5 and Regional Haze* (EPA Guidance) (EPA, 2007) recommends that "at a minimum...modeling 'longer' episodes that encompass full synoptic cycles. Time periods which include a ramp-up to a high ozone period and a ramp-down to cleaner conditions allow for a more complete evaluation of model performance under a variety of meteorological conditions (Page 140)." This recommendation is intended to improve the modeling performance evaluation for ozone modeling. It seems that none of the three ozone episodes include a complete synoptic cycle, and no ramp-down days were modeled.

   The current modeling performance evaluation shows that the model consistently underestimated ozone concentrations when local production plays a major role. This indicates systematic deficiencies in the modeling system, possibly due to the meteorological modeling or the transport modeling, or both. Therefore, including ramp-down days in the modeling may help to diagnose the underestimated ozone concentrations, since the ramp-down days may represent a shift in the meteorological system or in a chemical processes. Please clarify whether MAG has looked at modeling performance or plan to further evaluate modeling performance during ramp-down days.

   Response: The three ozone episodes used for the model performance evaluation were selected through extensive research of the data for the five ozone seasons (2000 to 2004) by following EPA's modeling guidance (See Attachments II and III of the Eight-Hour Ozone Plan). ENVIRON conducted numerous MM5 modeling

analyses with observed meteorology to derive the best meteorological data for CAMx modeling for the three episodes (See Appendix III of the Eight-Hour Ozone Plan). In addition, the three ozone episodes reflect ramp-up and ramp-down conditions of monitoring sites. Since EPA approved the three ozone episodes for use in the eight-hour ozone maintenance demonstration, new analyses will not be conducted to revise the three episodes or add more ramp-down days in the Eight-Hour Ozone Maintenance Plan. However, MAG will consider ADEQ's suggestion in the development of future attainment or maintenance plans for the 2008 eight-hour ozone standard of 0.075 ppm.

Modeling Performance Evaluation (MPE) Statistics

1. **Comment:** The EPA Guidance suggests that "as appropriate, States/Tribes should aggregate the raw statistical results into meaningful groups of sub-regions or sub-periods (page 199)." MAG conducted MPE for all monitors as a whole; however, more detailed examination of these sites indicates that they could well fell into at least two subgroups: (a) urban Phoenix sites, and (b) "suburban or more distant sites".

   Table V-1 shows that almost all of the ozone monitors that show the highest design values (ranked 1 through 7) are located outside the Phoenix urban area, except for the North Phoenix site (ranked 1). When further compared with Figure III-1 (CPA results), we see that all of these sites (except for North Phoenix) are at the edge or completely outside of the urban plume, such as Humboldt Mountain, Tonto and Rio Verde. The diurnal variations of ozone at these sites are also distinctly different from those at the Phoenix urban area: (1) the diurnal variation is much weaker, and (2) nighttime ozone concentrations are much higher (are above 50 ppb at some sites) (MAG Office Memorandum from Huiyan Yang etc. on February 22, 2008), included in Appendix I/Attachment III). These differences suggest that the ozone cycles at these two groups of sites are controlled by different factors. During high ozone days, the urban Phoenix sites are likely to be controlled more by local production, while the "suburban sites" are likely to be controlled by background ozone in addition to weaker ozone production.

   ADEQ suggests examining the monitoring sites and grouping them according to their characteristics and then applying MPE to each subgroup. This may help to identify the strength and weakness of the modeling for a variety of processes contributing to peak ozone. Evaluations of this nature may be helpful with the future ozone plan for the new lower standard. This would be particularly useful, since the more distant sites such as Humboldt Mountain and Rio Verde are often recording higher ozone values than the urban sites, indicating the elevated contribution of background ozone.

Response: MAG conducted additional MPE for two subgroups (urban and suburban sites) for each episode. The new MPE results by subgroup are provided in Appendix III-i

Chemical Process Analysis (CPA)

1. **Comment:** A CPA was only conducted for the June 2002 episode. This is an episode dominated by transport; however, one of the primary goals of CPA is to identify the strength and controlling species for photochemical ozone formation. It may be more appropriate to conduct CPA for the July 2002 episode when local ozone formation is the dominant contributor. Please explain why CPA results are shown for noon time if ozone peak concentrations often occur in middle to late afternoon.

   Response: MAG conducted additional CPAs for the July and August episodes and these results are provided in Appendix VI-ii. CPA results are shown for noon time because modeled ozone production rates were high in many areas at noon.

Modeled Ozone Spatial Distribution

1. **Comment:** The "Absolute Model Forecasts" in Section VI tabulated the modeled highest grid ozone concentrations. A contour map of future ozone generated by the MATS is also presented later in the TSD. In addition, MAG should provide modeled gridded ozone concentration maps for the baseline and future years. These maps will provide a clear visualization of the ozone distribution under the baseline and future conditions, identifying any "hot spots" and showing the "improvement area". Although the absolute modeled level of ozone should not be deemed as representative for actual ozone distribution, the model does provide a fairly accurate representation of the spatial distribution (high vs. low areas). For a better understanding of the ozone cycle, MAG may also want to provide gridded ozone maps for the nighttime.

   Response: Maximum and minimum modeled ozone tile plots for each episode of the baseline and future years are provided in Appendix VI-i.

Underestimating Ozone

1. **Comment:** The statistical MPE results show that CAMx consistently underestimates peak ozone when local production plays a major role (July 2002 and August 2001 episodes). Results for two of the three episodes are outside of the EPA recommended range. ADEQ suggests that MAG compare its modeling work other similar modeling work to try to determine why MAG's modeling often under-predicts ozone.

Response: MAG had performed an extensive number of CAMx/MM5 simulations, with assistance of ENVIRON, to derive the best CAMx/MM5 model performance for the three episodes, as shown in the 2007 Eight-Hour Ozone Plan. In addition, numerous model performance tests, with different combinations of air quality and meteorological models (e.g., CAMx/MM5, CAMx/WRF, CMAQ/MM5, and CMAQ/WRF) were carried out in the 2008 Eight-Hour Ozone Maintenance Plan to find uncertainty in model performance. These results indicate that the performance of different air quality and meteorological models are similar to the performance of CAMx/MM5.

Numerous air quality studies have compared measured and simulated ozone concentrations: under-predictions of ozone have been commonly reported in these studies (Jinyou Liang, 2004). Gopal Sistla, et al. (Gopal Sistla, 2001) suggested the need for improvement in the treatment of the physical and chemical processes of the air quality modeling system to improve the model performance. A number of studies have suggested the improvement in the emissions and meteorological modeling system as well (Jhumoor Biswas, 2001). Steven Reynolds, et al. (Steven Reynolds, 2003) pointed out that developing all required inputs to the model with sufficient accuracy is a challenge. EPA modeling guidance (EPA, 2007) also indicates that model estimates will not perfectly predict the observed air quality due to uncertainty in meteorological or other input data base limitations and/or an incomplete representation of the model's physiochemical processes.

MAG continues to strive to improve model performance for on-going and future air quality modeling. Specific technical suggestions for this purpose will be welcomed.

Sensitivity Tests

1. **Comment:** One conclusion of the modeling analysis is that "the region of greatest ozone production in the urban plume are VOC-sensitive", meaning that adding VOCs will result in an ozone increase and reducing VOCs will result in an ozone decrease (Page III-23). The Decoupled Direct Method results, in contrast, show that when zeroing-out (reducing to zero) Maricopa County biogenic emissions (mainly VOCs), ozone concentration would be increased (as shown in Figure VI-8 (a)). DDM results also shown that zeroing out Maricopa County onroad emissions (mainly NOx) resulted in lower ozone concentrations in the northern Phoenix area (blue areas in Figure VI-8 (b)). These results seem to contradict to the abovementioned conclusion. Please clarify how VOC and NOx emissions are expected to impact ozone formation in the urban Phoenix area. Also, considering the non-linearity between ozone precursors (VOC and NOx) and ozone formation, it may not be appropriate to zero-out emissions. It may be more reasonable to scale down emissions, rather than zeroing out emissions, for modeling sensitivity tests.

   Response: The ozone sensitivity plots from the Decoupled Direct Method results, shown in Figures VI-7 through VI-12, indicate that ozone concentrations are

equivalent to the subtraction of zeroing-out results from future year results. Positive values in these plots mean that ozone concentrations decrease when certain emission sources are removed (zeroed-out). Therefore, this conclusion agrees with the DDM results.

Comment received from Jo Crumbaker of Maricopa County Air Quality Department dated November 12, 2008

1. **Comment:** Jo Crumbaker asked about the locations of the maximum future design values obtained from the unmonitored area analysis at the Air Quality Planning Team meeting.

   Response: The following email was sent to Jo on November 12, 2008.

From: Taejoo Shin
Sent: Wednesday, November 12, 2008 5:03 PM
To: Jo Crumbaker - AQDX
Subject: Your question on the locations of the maximum future design values for unmonitored area...

Hi Jo,

For your question at the Air Quality Planning Team meeting, we have investigated the unmonitored locations which have the 2025 peak design values.

The unmonitored locations of the peak design values are:

The June episode: 81 ppb of the maximum 2025 design value was located around the north-east boundary of Maricopa County (Tonto National Forest).

The July and August episodes: 79 ppb for the July episode and 83 ppb for the August episode was located in the area between North Phoenix and Pinnacle Peak monitoring sites.

Taejoo

References

EPA, 2007. "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze", EPA-454/B-07-002, April 2007.

ENVIRON, 2003. "Humidity and Temperature Correction Factors for NOx Emissions from Spark Ignited Engines", ENVIRON International Corporation, October 2003, Final Report, SwRI Project No. 03.10038.

Gopal Sistla, Kevin Civerolo, Winston Hao, and S. Trivikrama Rao, 2001. "A Comparison of Measured and Simulated Ozone Concentrations in Rural Areas of the Eastern United States during Summer 1995", Journal of the Air & Waste Management Association, Vol. 51, pg. 374 – 386, March 2001.

Jhumoor Biswas and S. Trivikrama Rao, 2001. "Uncertainties in Episodic Ozone Modeling Stemming from Uncertainties in the Meteorological Fields", Journal of Applied Meteorology, Vol. 40, pg. 117 – 136, February 2001.

Jinyou Liang, Philip T. Martien, Su-Tzai Soong, and Saffet Tanrikulu, 2004. "A Photochemical Model Comparison Study: CAMx and CMAQ Performance in Central California", 13th Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association, August 2004.

Steven D. Reynolds, Charles L. Blanchard, and Stephen D. Ziman, 2003. "Understanding the Effectiveness of Precursor Reductions in Lowering 8-Hr Ozone Concentrations", Journal of the Air & Waste Management Association, Vol. 53, pg. 195 – 205, February 2003.

APPENDIX B

APPENDIX B

EXHIBIT 1:

Public Hearing Process Documentation

CERTIFICATION OF HOLDING OF PUBLIC HEARING ON THE MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

I affirm that a public hearing was held jointly by the Arizona Department of Environmental Quality and the Maricopa Association of Governments (MAG) starting at 5:30 p.m. Thursday, January 22, 2009 at the MAG Offices, Saguaro Room, 302 North 1st Avenue, Phoenix, Arizona and that the hearing was held in accordance with the Arizona open meeting laws and 40 CFR 51.102 (d) to receive public comment on the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area.

Jan. 23, 2009
Date

Lindy Bauer
Lindy Bauer, ~~MAG~~
Environmental Director

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

Personally appeared before me the above-named Lindy Bauer known to me to be the same person who executed the foregoing instrument and to be the Environmental Director for the Maricopa Association of Governments and acknowledged to me that she executed the same as her free act.

SUBSCRIBED AND SWORN TO before me on this 23rd day of January 2009.

OFFICIAL SEAL
VALERIE DAY
NOTARY PUBLIC State of Arizona
MARICOPA COUNTY
My Comm. Expires Aug. 16, 2012

Valerie Day
Notary Public

My Commission Expires:

August 16, 2012

PUBLIC HEARING ON THE EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

January 22, 2009-5:30 p.m.
MAG Offices, Saguaro Room
302 N. 1st Avenue, Second Floor
Phoenix, Arizona 85003

The Arizona Department of Environmental Quality (ADEQ) and Maricopa Association of Governments (MAG) will jointly conduct a public hearing on the Draft Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area on January 22, 2009 at 5:30 p.m. The purpose of the hearing is to receive public comments.

ADEQ and MAG are requesting that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa nonattainment area to attainment for the eight-hour ozone standard of 0.08 parts per million. No violations of this eight-hour ozone standard have occurred since 2004. The modeling analysis in the ozone maintenance plan demonstrates that the standard will continue to be met through 2025 with federal, state, and local control measures that have already been implemented. The key measures include summer reformulated gasoline, vehicle emissions testing, traffic signal coordination, intelligent transportation systems, a ban on open burning during the ozone season, and expansion of Area A boundaries (HB 2538, 2001).

The draft document is available for review at the MAG Offices, third floor, from 8:00 a.m. to 5:00 p.m. Monday through Friday. Public comments are welcome at the hearing, or may be submitted in writing by 5:30 p.m. on January 22, 2009 to Lindy Bauer at the address below. After considering public comments, the MAG Regional Council may take action on the plan on February 25, 2009. The ADEQ may then adopt the plan for submittal to the EPA.

Contact Person: Lindy Bauer, MAG (602) 254-6300
302 N. 1st Avenue, Suite 300
Phoenix, AZ 85003
Fax: (602) 254-6490
Pub: December 23, 2008

AFFIDAVIT OF PUBLICATION

THE ARIZONA REPUBLIC

STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Mark Gilmore, being first duly sworn, upon oath deposes and says: That he is a legal advertising representative of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published at Phoenix, Arizona, by Phoenix Newspapers Inc., which also publishes The Arizona Republic, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates as indicated.

The Arizona Republic

December 23, 2008.

Sworn to before me this
24TH day of
December A.D. 2008

Marilyn Greenwood
Notary Public
Maricopa County, Arizona
My Comm. Expires 05-23-11

Notary Public

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490
E-mail: mag@mag.maricopa.gov ▲ Web site: www.mag.maricopa.gov

December 23, 2008

TO: Interested Parties for Air Quality

FROM: Lindy Bauer, Environmental Director

SUBJECT: PUBLIC HEARING ON THE MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

Public Hearing
January 22, 2009 at 5:30 p.m.
MAG Offices, Saguaro Room
302 North 1st Avenue, Second Floor
Phoenix, Arizona 85003

The Arizona Department of Environmental Quality (ADEQ) and Maricopa Association of Governments (MAG) will jointly conduct a public hearing on the Draft Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area on January 22, 2009 at 5:30 p.m. The purpose of the hearing is to receive public comments.

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For your information and convenience, a copy of the public hearing notice is enclosed. The draft document is available for review at the MAG Offices, third floor, from 8:00 a.m. to 5:00 p.m. Monday through Friday. In addition, the draft document is available for agency and public review on the MAG website at www.mag.maricopa.gov.

Attachment

PUBLIC HEARING ON THE EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

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MAG Offices, Saguaro Room
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Contact Person: Lindy Bauer, MAG (602) 254-6300
302 N. 1st Avenue, Suite 300
Phoenix, AZ 85003
Fax: (602) 254-6490

TITLE VI
LETTER EXAMPLE

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490
E-mail: mag@mag.maricopa.gov ▲ Web site: www.mag.maricopa.gov

December 23, 2008

Santo Bernasconi
Centro De Amistad Inc.
8202 Avenida Del Yaqui
Guadalupe, AZ 85283-1024

Dear Mr. Bernasconi:

You are cordially invited to a public hearing on the Draft MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area. The hearing will be held jointly by the Arizona Department of Environmental Quality (ADEQ) and Maricopa Association of Governments (MAG) on Thursday, January 22, 2009 at 5:30 p.m. in the Saguaro Room at the MAG Offices, 302 North 1st Avenue, Second Floor, Phoenix, Arizona 85003. The purpose of the hearing is to receive public comments. Written and verbal comments are welcomed at the public hearing. After considering public comments, the MAG Regional Council may take action on the plan on February 25, 2009.

ADEQ and MAG are requesting that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa nonattainment area to attainment for the eight-hour ozone standard of 0.08 parts per million. No violations of this eight-hour ozone standard have occurred since 2004. The modeling analysis in the ozone maintenance plan demonstrates that the standard will continue to be met through 2025 with federal, state, and local control measures that have already been implemented. The key measures include summer reformulated gasoline, vehicle emissions testing, traffic signal coordination, intelligent transportation systems, a ban on open burning during the ozone season, and expansion of Area A boundaries (HB 2538, 2001).

The draft document is available for review at the MAG Offices, third floor, from 8:00 a.m. to 5:00 p.m. Monday through Friday. In addition, the draft document is available for agency and public review on the MAG website at www.mag.maricopa.gov. We hope to see you or your representative at the hearing and to include your input in future planning efforts. For your convenience, a copy of the public hearing notice is attached. If you have any questions or would like to set up a time for us to meet with your organization, please call me at (602) 254-6300.

Sincerely,

Lindy Bauer

Lindy Bauer
Environmental Director

PUBLIC HEARING ON THE EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

January 22, 2009-5:30 p.m.
MAG Offices, Saguaro Room
302 N. 1st Avenue, Second Floor
Phoenix, Arizona 85003

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December 23, 2008

TO: Leslie Rogers, Federal Transit Administration
Robert Hollis, Federal Highway Administration
Victor Mendez, Arizona Department of Transportation
Stephen Owens, Arizona Department of Environmental Quality
David Boggs, Regional Public Transportation Authority
Debbie Cotton, City of Phoenix Public Transit Department
Lawrence Odle, Maricopa County Air Quality Department
Maxine Leather Brown, Central Arizona Association of Governments
Donald Gabrielson, Pinal County Air Quality Control District
Wienke Tax, U.S. Environmental Protection Agency, Region IX

FROM: Lindy Bauer, Environmental Director

SUBJECT: TRANSMITTAL OF THE DRAFT MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

The Maricopa Association of Governments has prepared a Draft MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area. The draft document is available for review at the MAG Offices, third floor, from 8:00 a.m. to 5:00 p.m. Monday through Friday. In addition, the draft document is available for agency and public review on the MAG website. Any comments are requested by 5:30 p.m. on January 22, 2009.

The Arizona Department of Environmental Quality (ADEQ) and MAG are requesting that the U.S. Environmental Protection Agency (EPA) redesignate the Maricopa nonattainment area to attainment for the eight-hour ozone standard of 0.08 parts per million. No violations of this eight-hour ozone standard have occurred since 2004. The modeling analysis in the ozone maintenance plan demonstrates that the standard will continue to be met through 2025 with federal, state, and local control measures that have already been implemented. The key measures include summer reformulated gasoline, vehicle emissions testing, traffic signal coordination, intelligent transportation systems, a ban on open burning during the ozone season, and expansion of Area A boundaries (HB 2538, 2001).

On January 22, 2009, a public hearing will be conducted jointly by the ADEQ and MAG at the MAG Offices, Saguaro Room, Second Floor, Phoenix, Arizona at 5:30 p.m. After considering public comments, the MAG Regional Council may take action on the plan on February 25, 2009. The ADEQ may then adopt the plan for submittal to the EPA. If you have any questions, please do not hesitate to contact me at (602) 254-6300.

cc: Nancy Wrona, Arizona Department of Environmental Quality

PUBLIC HEARING ON THE EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

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Contact Person: Lindy Bauer, MAG (602) 254-6300
302 N. 1st Avenue, Suite 300
Phoenix, AZ 85003
Fax: (602) 254-6490

PUBLIC HEARING ON THE MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

Arizona Department of Environmental Quality and

Maricopa Association of Governments

Thursday, January 22, 2009

5:30 p.m.

ORIGINAL

TRANSCRIPT OF PROCEEDINGS

commenced at 5:30 p.m. on Thursday, January 22, 2009, at the Maricopa Association of Governments, 302 North 1st Avenue, Saguaro Room, Phoenix, Arizona, before Toni M. Gehm, a Notary Public in and for the State of Arizona.

* * *

A P P E A R A N C E S

Lyndy Bauer
Maricopa Association of Governments

Diane Arnst
Arizona Department of Environmental Quality

MS. BAUER: This public hearing is being held jointly with the Arizona Department of Environmental Quality and the Maricopa Association of Governments to receive public comments on the draft MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area. Those who are in the audience who parked in the garage can have their tickets validated by the MAG staff.

The public hearing this evening will begin with some introductory remarks from one of the members of the audience who has submitted a slip in order to make some remarks. Ms. Dianne Barker has requested an opportunity to present some public comments before we give the presentation this evening due to a commitment to a meeting that Ms. Barker has. So at this point in time I would like to ask Ms. Barker to come and give her comments. Thank you very much.

MS. BARKER: Thank you, Ms. Bauer, and MAG. My name is Dianne Barker. I'm at 3219 East Camelback Road, Number 393, in Phoenix, 85018. I've lived in the Valley for 23 years. I did come down here today by the natural gas bus and the light rail system and I'll be headed to Tempe on that light rail and use the bus and I also have a little folding bicycle. I add that just to let you know that I do do part of that not only for

expediency to get around downtown, but I have personal goals in regards to cleaner air and I do believe those activities add to that.

After reading some of your materials in the library explicitly December 2008 Draft Eight-Hour Ozone on page 213, I have a concern and it's in regards to fuel which is one of the main sources of your contingent -- of your measures for control for the eight-hour plan. It says in quote: "MVTB has been the primary oxygenate used in Arizona." And this is because they claim there was difficulty in blending ethanol. I've long time had a concern about MVTB. Others may have heard about some of the problems of it getting into the ground. I am not an expert on that fuel; however, in 1988 I was on a Valley Citizens Committee. I submitted that using alternative fuels can add to carcinogens and major pollutants that are of concern and can hurt people. So I submit that to you. I think we need to have further study.

I'm also submitting an article today about how cleaner air -- it's one of the first studies by EPA funded -- does create longer lives. But Phoenix isn't mentioned in here, so I have a concern for them looking into this area and seeing what we're doing and if the measures are helping. They don't explicitly talk about the Eight-Hour Ozone, but they talk about air pollution

and the particulates in that.

And the other thing in your draft plan that I am concerned about is as you used a contingency provision page 322 on the same document that I have spoken on and we know that after we reach .084 parts per million and any monitor there is a violation. I will sum this up. This is an IT contingency provision. I'd like to see if in fact the IT we're using on the light rail and the other ITs for traffic are helping, do they help more, or do we need to look at that on a caution basis.

So thank you for your time and have a happy new year.

MS. BAUER: Thank you very much, Ms. Barker.

Now we'll return to the normal order of our public hearing process. We're glad we were able to accommodate you. The public hearing will begin with some introductory remarks. We wanted to ask DEQ if they would like to offer any remarks at this time.

MS. ARNST: We don't have any remarks at this time.

MS. BAUER: Thank you very much. We'll have an overview presentation by the MAG staff. Following the presentation hearing participants are invited to make comments for the public record. The

court reporter is present to provide an official record of the hearing. Written comments are also welcome this evening.

For those participants wishing to speak, please fill out a form on the table and place it in the box. If you need to speak early, just let us know and we will accommodate you. As you come up to the podium, please state some information for the formal record: your name and who you represent. We do have a timer to assist the public with their presentations. It has a three minute time limit. When two minutes have elapsed, the yellow light will come on notifying the speaker they have one minute to sum up. At the end of the three minute period the red light will come on.

So now I will give a presentation on the Eight-Hour Ozone Redesignation Request and Maintenance Plan.

Thank you very much. My name is Lindy Bauer and I'm with the Maricopa Association of Governments. And, again, I welcome you to the hearing. Ground level ozone is a summertime air pollution problem. Ozone is formed by a chemical reaction that occurs between volatile organic compounds and nitrogen oxides in the presence of sunlight. You need very warm temperatures and minimal wind for ozone to form. In general, motor vehicle

emissions, industrial emissions, gasoline vapors, chemical solvents, and even natural vegetation, such as plants, trees can also contribute to ozone formation.

In 1997, the Environmental Protection Agency established an eight-hour ozone standard of .08 parts per million. The Maricopa nonattainment area was designated as a nonattainment area for this pollutant at that concentration in 2004. And you'll see the nonattainment area boundary in green. Collectively the nonattainment area boundary represents approximately 4,880 square miles. It includes portions mostly in Maricopa County and Apache Junction in Pinal County.

Now over time there has been significant progress made to reduce ozone in the MAG region and in this nonattainment area. This bar chart indicates that there have been no violations of this eight-hour ozone standard since the year 2004. So this has been due to the measures that have been implemented over time by the state, the local governments, and Maricopa County, and the private sector.

Since there have been no violations for several years of this standard, the Maricopa Association of Governments is now officially requesting that this region be redesignated to attainment status. There are basically four steps to redesignation to attainment.

First, EPA determines that the standard has been met. And this is as measured at the monitors. Secondly, EPA has to determine that the air quality improvement is due to permanent and enforceable reductions in emissions. Third, EPA has to determine that the state has met the Clean Air Act requirements for plans. And lastly EPA has to take approval action on the maintenance plan. Now the maintenance plan demonstrates that the eight-hour ozone standard will continue to be met through 2025 with existing measures that are already in place.

In order to reduce ozone, we focus on reducing volatile organic compound emissions and also nitrogen oxide emissions. Now this chart indicates the measures and their impact that we are using for the maintenance demonstration showing that this region will continue to meet the eight-hour ozone standard through the year 2025.

So these are the variety of measures that we have in place. Most of them have to do with motor vehicles. We have summertime fuel reformulation. We also have the federal nonroad emissions standards which are designed to reduce emissions from equipment along the roadways. We have improvements to the vehicle emissions testing program. And we have banned open burning during the ozone season because even though there is some burning going on during the ozone season, this can be a

problem, so this is another measure in the plan. And as I mentioned, most of these have an impact on the motor vehicle.

This is another measure that I would like to explain. Expansion of Area A. Now this was in legislation passed by the legislature in 2001. Area A applies to portions of Maricopa and Pinal and Yavapai Counties and the thinking of the legislature was to incrementally over time add measures to Area A in order to prevent violations of the ozone standard and the other pollutants.

Now I'd like to turn to the impacts of those same measures on nitrogen oxides. You can see the impact of the measures. They are in slightly different order because they have a little bit different impact on nitrogen oxides than they do on volatile organic compounds. And these are the impacts in both slides on man-made emissions.

Next I would like to show you some pie charts to show you that in the maintenance year 2025 what the distribution of emissions looks like by source. Often we're asked in the maintenance year or in the attainment year do we still have sources and emissions, and the answer is yes, but in those years we are predicting that we will still be maintaining the standard. So you can

see the distribution for 2025 for VOC emissions with measures in place.

The next pie chart is the impact of the measures on the sources in the year 2025 only this time taking a look at reductions in nitrogen oxides. In this plan we also have contingency measures. These are measures above and beyond the measures that we're using to demonstrate maintenance of the standard in 2025. These measures are going to be implemented and have been implemented right along with the regular maintenance plan measures.

Generally the approach taken in this nonattainment area has been to implement contingency measures along with plan measures that's your best chance of success from preventing violations. Most of these measures are improvements to the component of the vehicle emission and inspection program. There are some measures here for coordinating traffic signals and developing intelligent transportation systems. This maintenance plan also establishes a budget for motor vehicles.

Under the Clean Air Act there are requirements for transportation conformity. The air quality plans actually set motor vehicle emission budgets. Under the Clean Air Act this is a requirement to prevent transportation plans, programs, and projects from causing air quality violations.

So in this maintenance plan there is a new budget for volatile organic compounds of 43.8 metric tons per day and a budget for nitrogen oxides 101.8 metric tons per day. Now these new budgets will be used in the conformity analyses after they are found to be adequate or they are approved in the plan by the Environmental Protection Agency.

The schedule for the eight-hour plan is as follows: The document was available for public review on December 23rd, 2008. Tonight is the public hearing. The MAG Air Quality Technical Advisory Committee is scheduled to meet on January 26, 2009. And at that time the committee will be reviewing comments made and a response to comments. And then it is anticipated they may make a recommendation on the plan. Their recommendation would go to the MAG Management Committee on February 11th, 2009. And then it would go to the MAG Regional Counsel for action on February 25, 2009. MAG would then provide the plan to the Arizona Department of Environmental Quality. And at the end of February the Arizona Department of Environmental Quality anticipates submitting the plan to the Environmental Protection Agency.

Now once this plans goes into EPA, MAG will begin working on the planning effort for the new

eight-hour ozone standard. This standard was established by the Environmental Protection Agency in March 2008. The new toughened standard is .075 parts per million which is different than this one, so I wanted to call your attention to that. We'll be working on yet another plan. And now I'd be glad to return to the table and take public testimony. Thank you.

At this point in our process public comments are invited. If you would like to speak, again, please fill out a form and adhere to the three minute time limit. I've been advised that we have no additional forms, so I will look at the audience one more time here and see if anyone would like to offer any comments.

Seeing none, the Maricopa Association of Governments appreciates your interest in regional air quality issues. Your comments will be presented to the MAG Air Quality Technical Advisory Committee at the January 29th, 2009 meeting at 1:30 p.m. And again, a response to comments will be prepared and included in the plan documents.

Thank you again for coming to our hearing this evening. Thank you. The hearing is now closed.

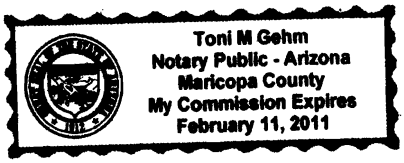
(Public Hearing concluded at 5:50 p.m.)

STATE OF ARIZONA)
)
COUNTY OF MARICOPA)

BE IT KNOWN that the foregoing proceedings were taken before me, Toni M. Gehm, a Notary Public in and for the State of Arizona; that the foregoing pages contain a full, true, accurate transcript of all proceedings had, all done to the best of my skill and ability.

I FURTHER CERTIFY that I am in no way related to any of the parties hereto, nor employed by any of the parties hereto, and have no interest in the outcome thereof.

DATED at Phoenix, Arizona, this 22nd day of January, 2009.



Toni M. Gehm
Notary Public

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490
mag@mag.maricopa.gov

Meeting: Public Hearing on the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan

Room: Saguaro Room

Date: January 22, 2009

PLEASE SIGN IN BELOW:

NAME	ORGANIZATION/AFFILIATION	MAILING ADDRESS
Steven Peplau	ADEQ	1110 W. Washington ~~Ste~~ Phx, AZ 85007
Dan Catlin	Fort McDowell Yavapai Nation	P.O. Box 17779 Fountain Hills, AZ 85269
Dianne Barker	Citizen	3219 E. Camelback Rd #~~378~~ PHX, AZ 85018
Diane Arnst	ADEQ	1110 W. Washington St Phoenix, AZ 85007

MARICOPA ASSOCIATION of GOVERNMENTS

PUBLIC HEARING ON THE
MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

Date Jan. 22, 2009 January 22, 2009

Name Dianne Barker
(Please Print)

Address 3249 E. Camelback Rd. #393 PHAZ 85018 Phone 602 999-4448

Title Citizen

Representing
(Organization, etc.)

Do you wish to be heard? Yes ☐ No ☐ If Necessary ☐

DD Barker
Signature

RESPONSE TO PUBLIC COMMENTS ON THE DRAFT MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

JANUARY 22, 2009 PUBLIC HEARING

The Maricopa Association of Governments (MAG) appreciates the comments made during the public comment period for the Draft MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area. An advertised public hearing was held on January 22, 2009. Verbal testimony was presented at the public hearing. No written comments were received during the comment period. The following represents the MAG response to the comments received.

COMMENTS FROM DIANNE BARKER (Testimony at the January 22, 2009 public hearing)

Comment: I've lived in the Valley for 23 years. I did come down here today by the natural gas bus and the light rail system and I'll be headed to Tempe on that light rail and use the bus and I also have a little folding bicycle. I add that just to let you know that I do part of that not only for expediency to get around downtown, but I have personal goals in regards to cleaner air and I do believe those activities add to that.

Response: The Maricopa Association of Governments appreciates the efforts Ms. Barker is making to improve air quality by using alternative modes such as light rail, buses, and bicycles.

Comment: After reading some of your materials in the library, explicitly December 2008 Draft Eight-Hour Ozone on page 2-13, I have a concern and it's in regards to fuel, which is one of the main sources of your measures for control for the eight-hour plan. It says "MTBE has been the primary oxygenate used in Arizona." And this is because they claim there was difficulty in blending ethanol. I've long time had a concern about MTBE. Others may have heard about some of the problems of it getting into the ground. I am not an expert on that fuel; however, in 1988 I was on a Valley Citizens Committee. I submitted that using alternative fuels can add to carcinogens and major pollutants that are of concern and can hurt people. So I submit that to you. I think we need to have further study.

Response: The paragraph on page 2-13 of the Draft Eight-Hour Ozone Redesignation Request and Maintenance Plan that refers to methyl tertiary butyl ether (MTBE) states: "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."

This text indicates that Senate Bill 1504 eliminated the need to use MTBE in summertime cleaner burning gasoline (CBG) in Maricopa County. However, to make it clearer that the oxygenation of Maricopa County summertime gasoline has not been required since 2000,

the verb in the last sentence has been changed from “has” to “had.”

Although the text states that Senate Bill 1504 eliminated the “maximum” oxygenate requirement for summertime gasoline, this is not correct; the Bill eliminated the “minimum” oxygenate requirement. So this correction has also been made to the document.

Comment: I’m also submitting an article today about how cleaner air - it’s one of the first studies by EPA funded - does create longer lives. But Phoenix isn’t mentioned in here, so I have a concern for them looking into this area and seeing what we’re doing and if the measures are helping. They don’t explicitly talk about the eight-hour ozone, but they talk about air pollution and the particulates in that.

Response: The air quality monitors located in Phoenix and the surrounding areas of Maricopa County indicate that measured concentrations of carbon monoxide, ozone and particulate pollution are declining over time. Since the air quality is improving at the same time the regional population, employment and vehicle travel continue to grow, it is evident that the numerous federal, state and local control measures that have been implemented in the Maricopa area have been successful in decreasing air pollution.

Comment: And the other thing in your draft plan that I am concerned about is as you used a contingency provision on page 3-22 of the same document that I have spoken on and we know that after we reach 0.084 parts per million and any monitor there is a violation. I will sum this up. This is an IT contingency provision. I’d like to see if in fact the IT we’re using on the light rail and the other ITs for traffic are helping, do they help more, or do we need to look at that on a caution basis.

Response: “Develop Intelligent Transportation Systems” is one of the six contingency measures identified on page 3-22 of the Draft Eight-Hour Ozone Redesignation Request and Maintenance Plan. Section VI-7-2 of the Technical Support Document describes this measure as follows: “Nearly all of the local jurisdictions are 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). This measure reduces VOC and NOx emissions by increasing vehicle speeds and reducing congestion.”

“Develop Intelligent Transportation Systems,” as well as the other five contingency measures in the Draft Eight-Hour Ozone Redesignation Request and Maintenance Plan, have already been implemented in the Maricopa area. While no credit for these contingency measures has been taken in modeling maintenance of the eight-hour ozone standard, early implementation of these measures provides additional confidence that the standard will be maintained through 2025. If any air quality monitor records a violation of the eight-hour ozone standard of 0.08 ppm after EPA redesignates the Maricopa area to attainment, page 3-22 of the draft document states that “additional control measure will be considered, which may include the strengthening of existing contingency measures”.

APPENDIX B

EXHIBIT 2:

Certification of Adoption

RESOLUTION TO ADOPT THE MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

WHEREAS, the Maricopa Association of Governments (MAG) is a Council of Governments composed of twenty-five cities and towns within Maricopa County and the contiguous urbanized area, the County of Maricopa, the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, Fort McDowell Yavapai Nation, Arizona Department of Transportation, and Citizens Transportation Oversight Committee; and

WHEREAS, the Governor of Arizona designated MAG as the regional air quality planning agency and metropolitan planning organization for transportation in Maricopa County; and

WHEREAS, the Environmental Protection Agency designated the Maricopa nonattainment area in 2004 for the eight-hour ozone standard of .08 parts per million in accordance with the Clean Air Act; and

WHEREAS, the Maricopa nonattainment area has had no violations of the eight-hour ozone standard of .08 parts per million since 2004; and

WHEREAS, MAG has prepared the Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area, including the modeling maintenance demonstration; and

WHEREAS, A.R.S. 49-406 H. requires that the governing body of the metropolitan planning organization adopt the maintenance area plan.

NOW THEREFORE, BE IT RESOLVED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS REGIONAL COUNCIL as follows:

SECTION 1. That the MAG Regional Council adopts the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area and authorizes the submission of the plan to the Arizona Department of Environmental Quality and the U.S. Environmental Protection Agency.

SECTION 2. That the MAG Regional Council further requests that the U.S. Environmental Protection Agency redesignate the Maricopa nonattainment area to attainment status for the eight-hour ozone standard of .08 parts per million.

PASSED AND ADOPTED BY THE REGIONAL COUNCIL OF THE MARICOPA ASSOCIATION OF GOVERNMENTS THIS TWENTY-FIFTH DAY OF FEBRUARY 2009.

Peggy Neely, Chair
MAG Regional Council

ATTEST:

Dennis Smith
Executive Director

CERTIFICATION OF ADOPTION OF THE
MAG EIGHT-HOUR OZONE REDESIGNATION REQUEST AND
MAINTENANCE PLAN FOR THE MARICOPA NONATTAINMENT AREA

An Excerpt from the February 25, 2009, MAG Regional Council Meeting Minutes

Mayor Boyd Dunn moved to adopt the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area. Vice Chair Thomas Schoaf seconded, and the motion carried unanimously.

I certify that on February 25, 2009, the MAG Regional Council adopted the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area.

Dennis Smith
MAG Executive Director

04/06/09
Date