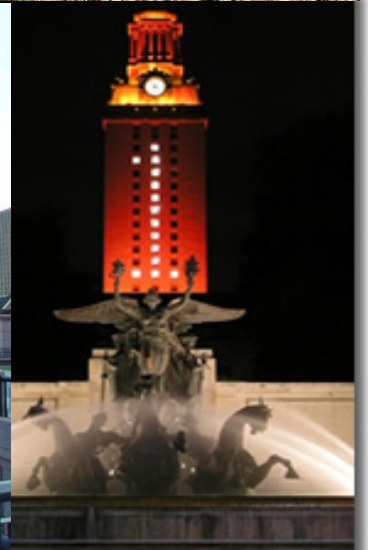


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# Hour Ozone Flex Program Austin-Round Rock Metropolitan Statistical Area

Final Draft

January 2008



# Draft 8-Hour Ozone Flex Program Austin-Round Rock MSA

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## Chapter One: Introduction

Local governments, community and business leaders, environmental groups, and concerned citizens in the Austin-Round Rock Metropolitan Statistical Area (MSA) are committed to ensuring good air quality. These groups work with the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency (EPA) to implement voluntary programs to assure continued attainment of the federal 8-hour standard for ground-level ozone ( $O_3$ ).

The 8-hour  $O_3$  Flex program is the latest in a series of regional initiatives and builds on the region's previous plans: the 1-hour  $O_3$  Flex program and the Early Action Compact. These voluntary initiatives allow the region to address regional ozone problems proactively rather than wait to address them through the prescribed federal nonattainment process. Through these efforts, directed by the elected officials of the Central Texas Clean Air Coalition (CAC), the region has maintained compliance with the federal ozone standard despite a growth rate that far exceeds the state and national average.

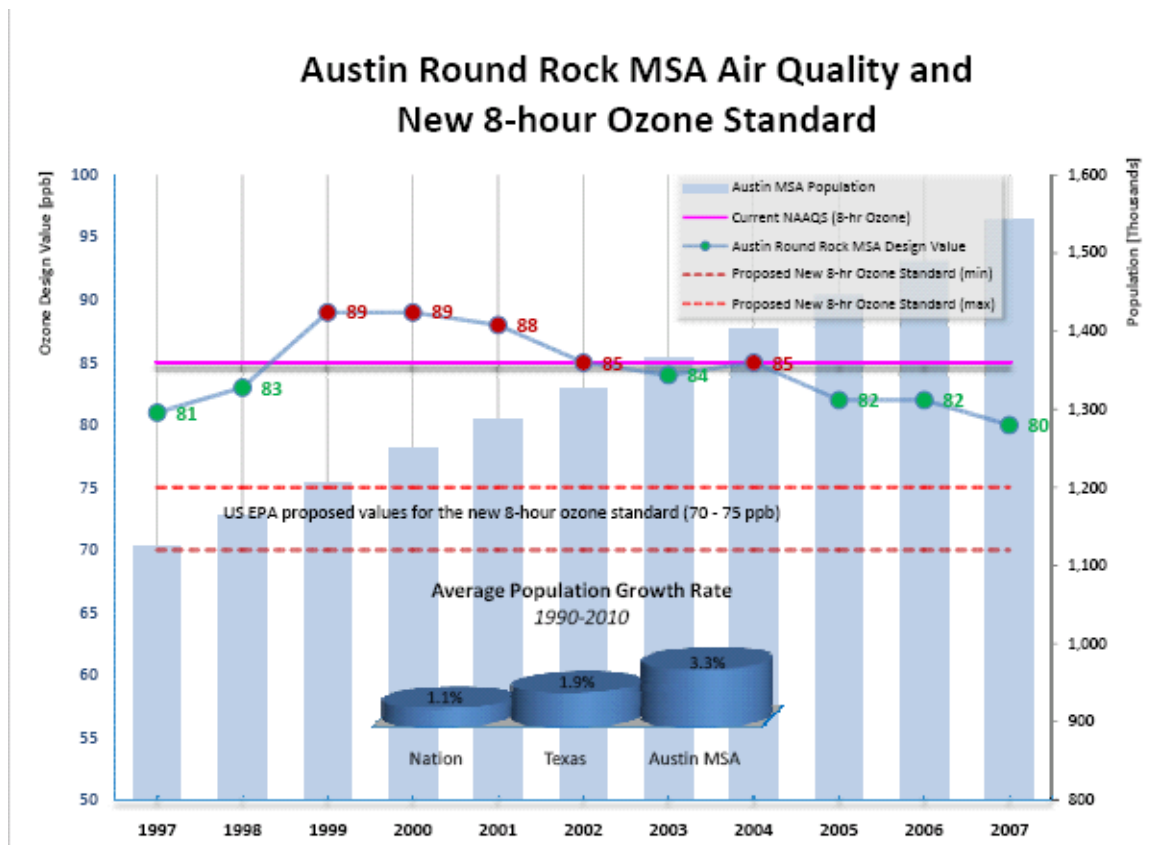


Figure 1.1 Austin Round-Rock MSA Air Quality and Population Growth Trends

## **1.1 Ground-level Ozone**

Implementing the 8-hour O<sub>3</sub> Flex program supports reduction of emissions that produce ozone. Ozone is a form of oxygen with three atoms instead of the usual two. It is a photochemical oxidant. At ground level, ozone is the main component of smog. Ozone is not emitted directly into the air but is formed through chemical reactions between natural and man-made emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) in the presence of heat and sunlight. Reducing ozone levels requires reductions in ozone precursors, predominantly VOCs and NO<sub>x</sub>.

## **1.2 Health and Environmental Effects**

Ground-level ozone can be a health hazard. People with lung disease, children, seniors, and people who are active outdoors can be affected when ozone levels are unhealthy. Studies link ground-level ozone exposure to:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone can have detrimental effects on plants and ecosystems. These effects include:

- interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, national parks, and recreation areas; and
- reducing crop yields and forest growth, potentially impacting species diversity in ecosystems.

## **1.3 Federal Ozone Standards**

The Federal Clean Air Act directs EPA to set National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. Ground-level ozone is one of the pollutants for which EPA has promulgated primary and secondary NAAQS. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and seniors. Secondary standards set limits to protect public welfare, including protection



against visibility impairment, damage to animals, crops, vegetation, and buildings.

The current primary and secondary ozone standards are set at 0.08 parts per million (ppm), or 84 parts per billion (ppb) using the accepted rounding conventions. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured annually at each regulatory monitor within an area must not exceed 0.08 ppm, or 84 ppb. The 3-year average is called the design value.

EPA and the states monitor ambient air quality by installing monitoring equipment and collecting air samples at specific monitoring sites. If the pollutants in the sampled air exceed levels allowed by the NAAQS, the area around the monitor (usually counties or MSAs) is determined to be non-compliant and may be designated as a nonattainment area for the non-compliant pollutant.

Nonattainment areas must follow a prescribed process for cleaning up their air and comply with additional federal requirements on industry and transportation. The additional requirements may make industrial operations more costly and can result in lost or delayed federal transportation funding.

## **1.4 Austin-Round Rock MSA's 8-Hour Ozone Flex Program**

According to EPA guidance, "The 8-Hour Ozone Flex (8-O<sub>3</sub> Flex) program is a voluntary agreement between Federal, State/Tribal and local communities to encourage 8-hour ozone attainment areas nationwide to reduce ozone emissions as needed to maintain the National Ambient Air Quality Standard (NAAQS) for ozone. The program will support and reward innovative, voluntary, local strategies to reduce ground-level ozone, thereby improving air quality and helping areas maintain attainment. In addition, the program will allow States and locals to receive "credit" for these efforts in the State/Tribal Implementation Plans, and help them avoid a violation of the 8-hour ozone standard."

The local governments of the Austin-Round Rock MSA expressed their intent to participate in the 8-hour O<sub>3</sub> Flex program in a letter from the CAC Chair, Austin Mayor Will Wynn, dated December 20, 2006, to U.S. EPA Regional Administrator Richard E. Green. (See Appendix A)

In compliance with EPA's May 2006 guidance the region's 8-hour O<sub>3</sub> Flex program comprises the following elements:

- Chapters 1 & 2 contain the required air quality history and technical data;
- Chapter 3 is the Action Plan. It includes voluntary emission reduction measures, contingency measures, coordination and public participation, and schedules/reporting; and

- Chapter 4 is the Memorandum of Agreement. It is the formal acceptance of the region's 8-hour O<sub>3</sub> Flex program by EPA, TCEQ, and the local governments. It includes general commitments and objectives, responsibilities, expected duration, conditions for modification or early termination, signature page and date.

## **1.5 Eligibility Requirements**

Participation in an 8-hour O<sub>3</sub> Flex program is available for areas that:

- currently are designated attainment or unclassifiable/attainment for the 8-hour ozone standard, as published on April 30, 2004 (69 FR 23858) and are monitoring attainment of the 1-hour ozone standard;
- were neither designated at the time of 8-hour designations nonattainment for the 1-hour ozone NAAQS nor designated attainment for 1-hour ozone standard with an approved 1-hour ozone maintenance plan;
- have not been redesignated to nonattainment for the 8-hour ozone standard;
- have a current design value which show attainment of the 8-hour ozone standard; and
- have air monitors in place and meet the requirements of 40 CFR 58 Appendix A, or the QA Handbook for Air Pollution Measurement System, Volume II (<http://www.epa.gov/air/oaqps/qa/index.html>).

The region meets all criteria in EPA's guidelines for participation in an 8-hour O<sub>3</sub> Flex program.

## **1.6 Geographic Boundaries**

The proposed 8-hour O<sub>3</sub> Flex program applies to the five counties included in the Austin-Round Rock MSA. These counties are Bastrop, Caldwell, Hays, Travis, and Williamson (Figure 1.2). For Central Texas, using the defined MSA is a reasonable and suitable approach to setting the area's air quality planning boundaries.

The predominant sources of anthropogenic VOC and NO<sub>x</sub> in the region are on-road, non-road, and area. The impacts of, and increases in, emissions from these sources are primarily related to the urban character of the region (e.g., population densities, urban/suburban growth, commuting patterns).

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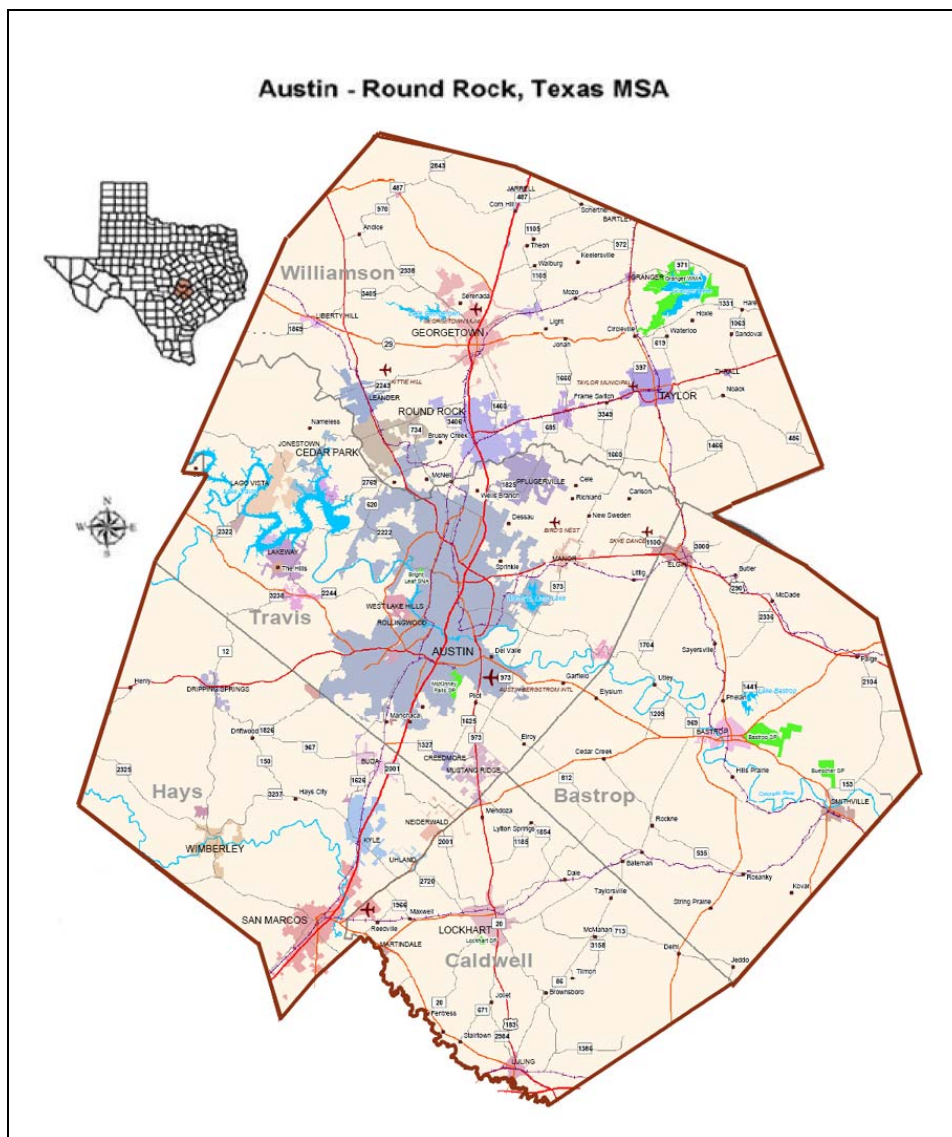


Figure 1.2 Map of Austin-Round Rock MSA

## 1.7 Participating Stakeholders

### 1.7.1 Signatory jurisdictions and participating agencies

Along with EPA and TCEQ, the following local governments are signatories of the Austin-Round Rock MSA 8-hour O<sub>3</sub> Flex Memorandum of Agreement (MOA):

City of Austin	City of Luling	Caldwell County
City of Bastrop	City of Round Rock	Hays County
City of Elgin	City of San Marcos	Travis County
City of Lockhart	Bastrop County	Williamson County

In addition to the government signatories, the following organizations participated in the development of this 8-hour O<sub>3</sub> Flex program. Several of these participants, denoted by the asterisk, have also made commitments to implement emission reduction measures. (See Appendix B for local government and participating agency commitments.)

\*Capital Area Metropolitan Planning Organization (CAMPO)

\*Capital Metropolitan Transportation Authority

\*Capital Area Council of Governments (CAPCOG)

Central Texas Clean Cities

Central Texas Regional Mobility Authority

Clean Air Coalition of Central Texas

CLEAN AIR Force of Central Texas

Clean Air Partners Program

Clean School Bus Program

Environmental Defense

Greater Austin Chamber of Commerce

\*Lower Colorado River Authority

\*Texas Department of Transportation (TxDOT), Austin District



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\*Texas Department of Transportation (TxDOT), Headquarters Office

\*Texas Commission on Environmental Quality, Austin Headquarters Office

University of Texas at Austin

Additional signatory jurisdictions and participating agencies may be added during the term of the MOA.

### **1.8 Building on Success**

Central Texas has a history of proactive air quality initiatives. Since 1996, the Texas Legislature has provided near-nonattainment area funding to the area for use in performing planning functions related to the reduction of ozone concentrations in the area. The region was among the first in the nation to adopt an O<sub>3</sub> Flex Agreement. Designed to help the region maintain compliance with the 1-hour standard, implementation of the O<sub>3</sub> Flex emission reduction measures started in the 2002 ozone season.

In March 2004, the region adopted an Early Action Compact (EAC) to support maintenance of the 8-hour ozone standard. Emission reduction measures implemented for the EAC include a Vehicle Inspection and Maintenance Program, Heavy-Duty Vehicle Idling Restrictions, additional state rules, and a comprehensive collection of voluntary locally implemented measures. The region met the EAC objective of compliance with the 8-hour standard by December 31, 2007.

The Central Texas Clean Air Coalition (CAC) directs the region's air quality policy. The CAC is a voluntary association comprising elected officials from all five counties of the Austin-Round Rock MSA. It is responsible for development, adoption, and implementation for the region's clean air plans.

Since 1993 the CLEAN AIR Force of Central Texas (CAF), a non-profit organization comprising business, government, environmental and community leaders, has coordinated public awareness and education campaigns. Since its inception, the CAF has been at the forefront of local outreach efforts. This has provided the public with a solid understanding of air quality issues. The CAF continues to expand public awareness of the issues through education campaigns and programs.

## Chapter Two: Background

### 2.1 Status of Air Quality

The ozone season for the Austin-Round Rock MSA begins April 1<sup>st</sup> and ends October 31<sup>st</sup>. The Austin-Round Rock MSA is designated in attainment of the NAAQS for ozone. The current design value is 80 ppb (calculated as an average of the 4<sup>th</sup> highest reading from 2005, 2006 and 2007). Figure 2.1 shows design value trend and fourth-highest readings at the two regulatory monitors in the Austin Round-Rock MSA.

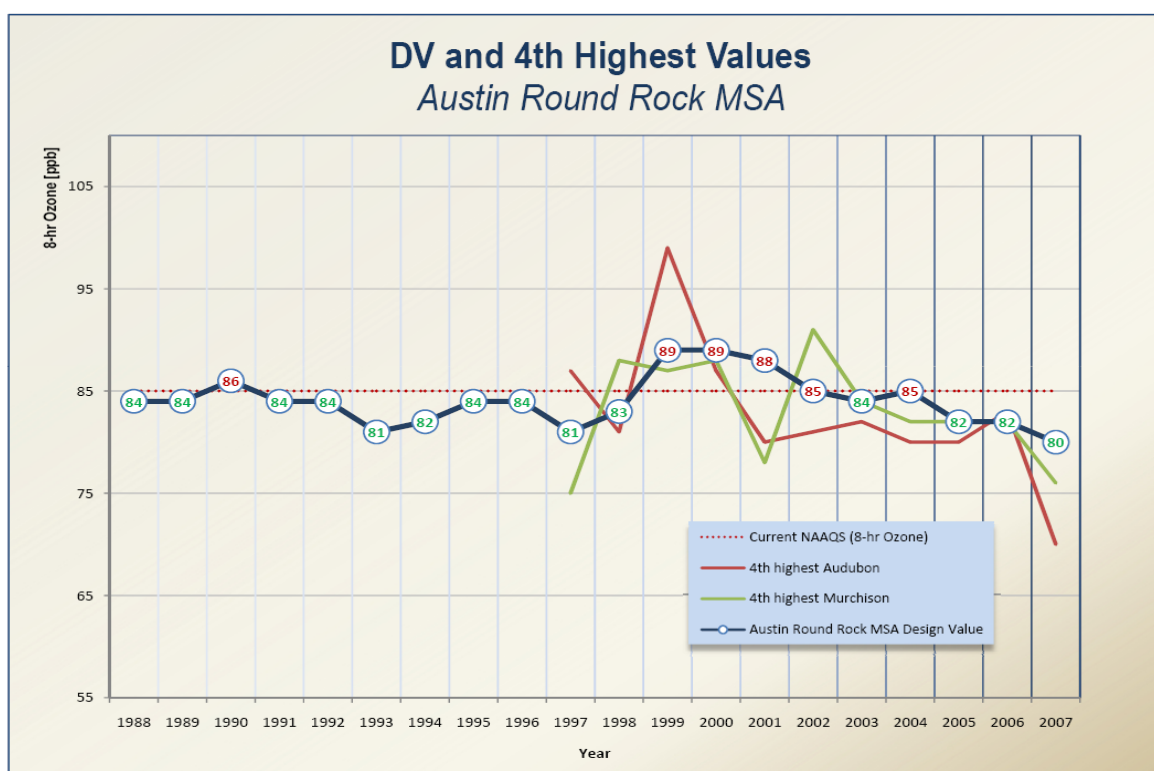


Figure 2.1 Austin Round Rock MSA 8-hr ozone design value historic trend. Note current 8-hr ozone design value is 80 ppb.

Figure 2.2 shows the number of days, from 1993 – 2006, that one or more monitoring stations measured a maximum ozone concentration of 75 ppb or greater. The number of high ozone days varied from a minimum of 6 in 1996 to a maximum of 34 in 1999. The trend in annual high ozone days must be interpreted with caution, as the locations and number of monitoring stations in the Austin monitoring network changed throughout the period. Figure 2.2 also presents the number of high ozone days using only the regulatory monitoring stations at Audubon (C38), and Austin NW / Murchison (C03). Note that the number of high ozone days is the same for all years with the exception of 2003 (13 versus 15) and 2006 (15 versus 18). The years 1995, 1997, 1999, and 2000

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were characterized by 33, 23, 34, and 24 high ozone days, respectively. Annual high ozone days for the remaining years varied: they ranged from 6 in 1996 to 18 in 2006 (*Austin Conceptual Model*, UT Austin 2007).

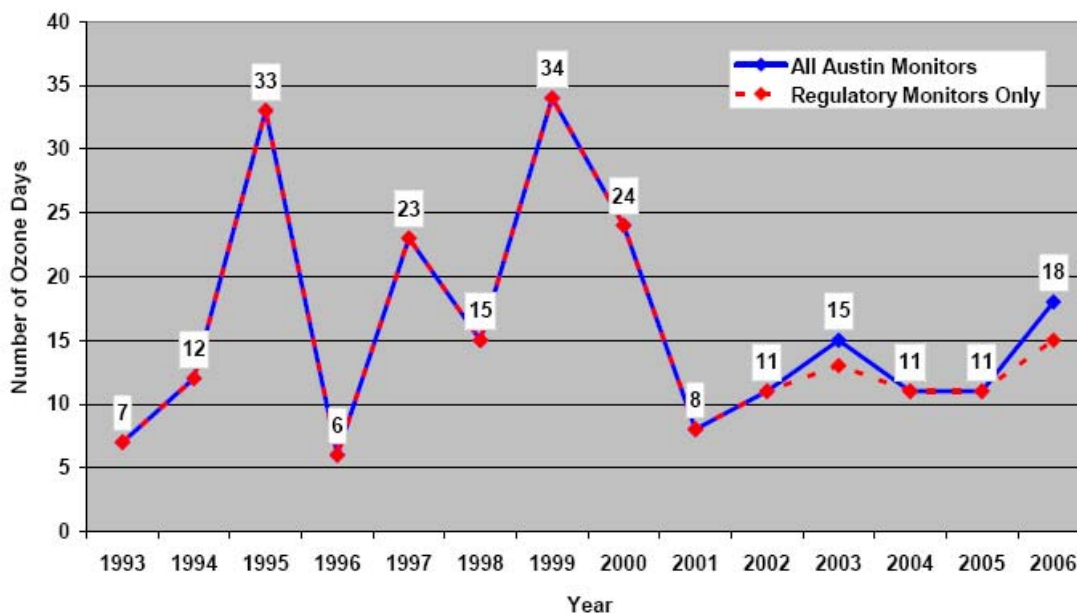


Figure 2.2 Annual number of days characterized by a maximum ozone concentration, averaged over 8 hours, of 75 ppb or greater at one or more Austin monitors, and at regulatory monitors only, during the 1993 through 2006 period.

Figure 2.3 presents the monthly frequency occurrence of high ozone days for 1993 - 2000 and for 2001 - 2006. Note the dramatic reduction in the frequency of occurrence of high ozone days during the July through October period. During 1993-2000, the average annual number of high ozone days in August/September was 11.9, compared to an average of 5.5 days during 2001-2006. In contrast, the May/June period was characterized by a relatively greater number of high ozone days in recent years. During May/June, the annual number of high ozone days for 2001-2006 was 5.5, compared to 2.6 days during 1993-2000. Although not shown, a similar trend was observed for days characterized by maximum ozone concentrations of 85 ppb or greater.

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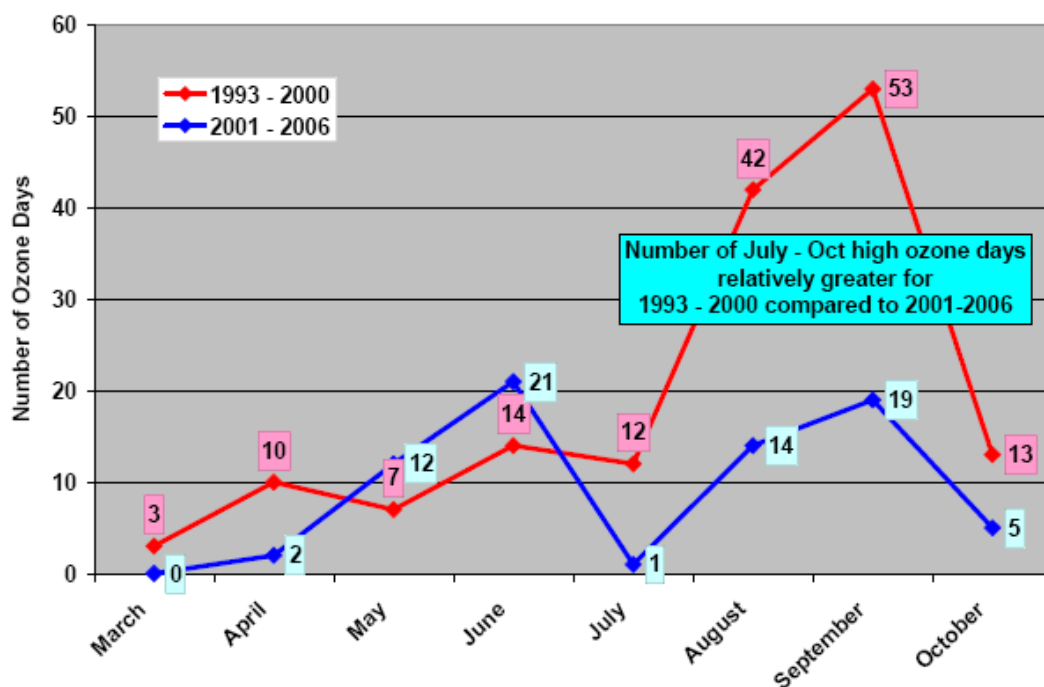


Figure 2.3 Number of days, by month, characterized by a maximum ozone concentration, averaged over 8 hours, of 75 ppb or greater at one or more Austin monitoring stations for the years 1993 - 2000 and for 2001 - 2006.

## 2.2 Sources of Pollutants

Ozone precursor emissions can result from both anthropogenic and biogenic sources and can be transported over long distances. The traditional emissions inventory (EI) accounts for ozone precursor emissions from point, area, mobile, and biogenic sources within a certain defined area, usually the MSA. The latest EI compiled for the Austin region represents 2002 emissions for the five-county MSA (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006) and is listed in Tables 2.1 & 2.2 for VOC and NO<sub>x</sub> emissions respectively. The most recent data on point source emissions for the MSA counties are listed in Table 2.4. Large point sources located outside MSA counties with potential impacts on the area, depending on wind directions, are listed in Table 2.5.

### **2.2.1 2002 Emissions Inventory**

This inventory encompasses the five Austin-Round Rock MSA counties, which includes Travis County, the most populous county of the region, and the four surrounding counties of Bastrop, Caldwell, Hays, and Williamson. (see Figure 1.2 for map)

The 2002 Austin-Round Rock MSA emissions inventory comprises five categories of emission sources. These include biogenic sources and four anthropogenic emission source categories: point, on-road mobile, non-road mobile, and area sources.

Tables 2.1 and 2.2 list NO<sub>x</sub> and VOC emissions in tons per average ozone weekday by major category for each of the five Austin-Round Rock MSA counties.



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### VOC

2002 Ozone Season tpd Emissions

COUNTY	Area	On-road Mobile	Non-Road Mobile	Point	Biogenic	Total	Anthropogenic
BASTROP	6.00	2.16	0.60	0.36	123.89	133.01	9.12
CALDWELL	15.95	1.09	0.54	0.06	80.95	98.59	17.64
HAYS	13.23	4.3	1.70	0.86	49.42	69.51	20.09
TRAVIS	57.22	31.11	20.16	0.99	71.64	181.12	109.48
WILLIAMSON	16.80	9.19	5.01	0.08	68.2	99.28	31.08
<b>Grand Total</b>	<b>109.21</b>	<b>47.85</b>	<b>28.02</b>	<b>2.35</b>	<b>394.1</b>	<b>581.51</b>	<b>187.41</b>

Table 2.1: 2002 VOC emissions by source category for each of the counties (all emissions are expressed in tons per day during an average ozone day) (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006).

### NOx

2002 Ozone Season tpd Emissions

COUNTY	Area	On-road Mobile	Non-Road Mobile	Point	Biogenic	Total	Anthropogenic
BASTROP	0.7	3.65	1.68	3.79	2.18	12.00	9.82
CALDWELL	0.72	2.06	1.24	2.46	4.93	11.41	6.48
HAYS	0.71	9.95	5.58	7.15	3.29	26.68	23.39
TRAVIS	3.77	58.33	17.45	6.56	4.78	90.89	86.11
WILLIAMSON	4.8	17.29	7.33	0.1	9.85	39.37	29.52
<b>Grand Total</b>	<b>10.7</b>	<b>91.28</b>	<b>33.30</b>	<b>20.06</b>	<b>25.03</b>	<b>180.35</b>	<b>155.32</b>

Table 2.2: 2002 NOx Emissions by Source Category for Each of the Counties (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006).

Figures 2.1 and 2.2 provide a graphical comparison of emissions of NOx and VOC by source category in tons per average ozone day (weekday).

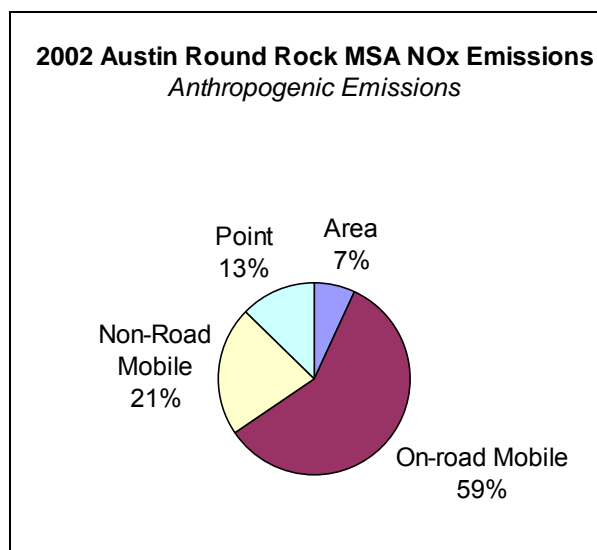


Figure 2.1 Austin-Round Rock MSA emissions inventory pie chart (2002 NOx emissions) (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006).

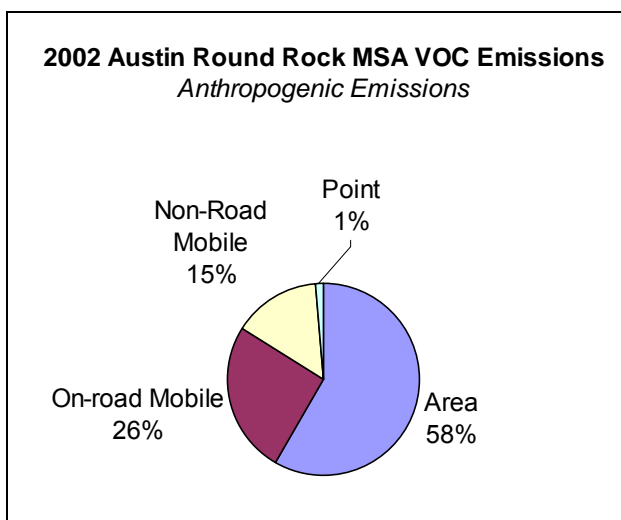


Figure 2.2 Austin-Round Rock MSA emissions inventory pie chart (2002 VOC emissions) (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006).

The on-road mobile category comprises the vehicles (e.g., cars, trucks, buses) traveling the regional roads and highways. Non-road mobile sources account for the emissions of mobile equipment operated in areas other than public thoroughfares. The non-road category includes farm vehicles, lawn and garden equipment, construction, mining, and industrial equipment, railroad locomotives, aircrafts, and others.

Area sources, such as gasoline stations, dry cleaners, or oil wells, are numerous and individually produce low levels of contaminants. Identification of discrete sources is untenable because individually these sources do not approach the threshold that triggers reporting requirements. Nevertheless, the cumulative impact of the area source contribution to overall emissions is significant.

Point sources are stationary emitters that produce pollution levels sufficient to warrant a description of each singular source. The TCEQ maintains records of point sources. This category is subdivided into major and minor point sources. Major point sources with actual emissions or the potential to emit over 100 tons/year (t/y) of a criteria air pollutant are subject to TCEQ annual emissions inventory (EI) reporting requirements. Minor point sources, which emit fewer than 100 t/y of a criteria pollutant, only report emissions when specifically required by TCEQ. Since 2002, TCEQ has requested EI reports of point sources in the Austin region emitting 10 t/y of VOC and 25 t/y NO<sub>x</sub>. Table 2.3 lists point sources in the Austin MSA and their 2002 emissions. Tables 2.4 and 2.5 show 2005 emissions, collected by TCEQ, for the Austin-Round Rock MSA and surrounding counties respectively.

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County	Company Name	TCEQ Acc	NOx [tpd]	VOC [tpd]	CO [tpd]
Bastrop	Acme Brick Company	BC0059O	0.16	0.13	0.65
	Bastrop Energy Partners (Bastrop Clean Energy)	BC0083R	0.57	0.04	0.19
	GenTex Power Corp and Calpine (lost Pines 1)	BC0082T	0.55	0.03	0.46
	Lower Colorado River Authority	BC0015L	2.46	0.09	0.07
	LCRA Hilbig Gas Storage	BC0057S	-	0.06	-
	Tiffany Brick Company LP	BC0018F	0.04	0.02	0.17
<b>Bastrop Total</b>			<b>3.78</b>	<b>0.37</b>	<b>1.54</b>
Caldwell	JL Davis	CA0011B	0.25	0.03	0.37
	Oasis Pipeline Co TX LP (Prairie Lea Compressor St.)	CA0027J	2.21	0.04	0.15
<b>Caldwell Total</b>			<b>2.46</b>	<b>0.07</b>	<b>0.52</b>
Hays	Texas Leigh Cement Co. (Portland Cement Mfg.)	HK0014M	6.09	0.51	9.52
	SW Texas State Univ. (Central Heating & Utilities)	HK0036C	0.63	0.08	0.24
	Hays Energy Project	HK0108C	0.43	0.26	0.7
<b>Hays Total</b>			<b>7.15</b>	<b>0.85</b>	<b>10.46</b>
Travis	3M Minnesota Mining and Manufacturing	TH0243G	0.12	0.03	0.42
	Austin White Lime Company	TH0010I	1.03	0.01	0.48
	Austin Hot Mix	TH0015V	0.01	0.09	0.05
	Motorola, Inc	TH0065G	0.05	0.14	0.02
	City of Austin Decker Creek Power Plant)	TH0004D	2.51	0.02	0.13
	City of Austin (Holly Power Plant)	TH0006W	0.75	0.001	0.04
	University of Texas at Austin (Hal C Weaver PP)	TH0104V	1.78	0.04	0.53
	Advanced Micro Devices	TH0142N	0.06	0.12	0.05
	Motorola Integrated Circuit	TH0172E	0.05	0.07	0.04
	Samsung Electronics	TH0602A	0.03	0.12	0.02
	Sand Hill Energy	TH0760E	0.1	0.001	0.17
	Koch Pipeline Co	TH0310Q	0.01	0.21	0.03
	Austin Research Laboratory	TH0052P	0.04	0.03	0.05
	Tyco Printed Circuit Group LP	TH0093B	0.01	-	-
	Austin American Statesman	TH0191A	-	-	-
	BFI Waste Systems	TH0232L	0.01	0.04	0.04
	Austin Counter Tops	TH0247V	-	0.04	-
	Lithoprint Company Inc	TH0732J	-	0.01	-
	Press Corps Inc	TH0765R	-	0.02	-
<b>Travis Total</b>			<b>6.56</b>	<b>0.99</b>	<b>2.07</b>
Williamson	Aquatic Industries Inc	WK0116E	-	0.1	-
	Seminole Pipeline Co	WK01480	0.1	0.01	0.07
	Laboratory Tops Inc	WK0171T	-	0.07	-
<b>Williamson Total</b>			<b>0.10</b>	<b>0.18</b>	<b>0.07</b>
<b>TOTAL</b>			<b>20.1</b>	<b>2.4</b>	<b>14.7</b>

Table 2.3 Summary in tons/day of Point Source Emissions for 2002 (*Austin-Round Rock MSA 2002 Ozone Precursor Emissions Inventory*, Final revision Dec 2006)

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RN	ACCOUNT	SITE	COUNTY	REGION	SIC	VOC [tpy]	NOX [tpy]
RN102038486	BC0015L	LOWER COLORADO RIVER AUTHORITY	BASTROP	11	4911	31.77	428.02
RN101056851	BC0083R	BASTROP ENERGY CENTER	BASTROP	11	4911	12.89	237.27
RN100723915	BC0082T	LOST PINES 1 POWER PLANT	BASTROP	11	4911	8.30	200.44
RN100225846	BC0059O	ELGIN PLANT	BASTROP	11	3251	47.09	60.35
RN100212034	BC0018F	HANSON BRICK ELGIN FACILITY	BASTROP	11	3251	7.86	26.64
RN102204427	BC0057S	HILBIG GAS STORAGE FACILI	BASTROP	11	1311	23.33	0.64
RN100220177	CA0027J	PRAIRIE LEA COMPRESSOR STATION	CALDWELL	11	4922	38.38	981.30
RN100212018	CA0011B	LULING GAS PLANT	CALDWELL	11	1321	16.19	171.13
RN102597846	HK0014M	TEXAS LEHIGH CEMENT CO.	HAYS	11	3241	198.42	2168.00
RN100221480	HK0036C	CENTRAL HEATING & UTILITI	HAYS	11	8221	22.10	174.42
RN100211689	HK0108C	HAYS ENERGY PROJECT	HAYS	11	4911	15.35	165.49
RN100211945	HK0046W	PARKVIEW METAL PRODUCTS	HAYS	11	3469	27.68	
RN102533510	TH0104V	HAL C. WEAVER POWER PLANT	TRAVIS	11	4911	15.43	693.68
RN100214337	TH0010I	AUSTIN WHITE LIME COMPANY	TRAVIS	11	3274	7.94	647.06
RN100219872	TH0004D	DECKER CREEK POWER PLANT	TRAVIS	11	4911	33.39	518.32
RN100215052	TH0760E	SAND HILL ENERGY CENTER	TRAVIS	11	4911	1.98	283.31
RN100220045	TH0006W	HOLLY POWER PLANT	TRAVIS	11	4911	0.36	241.07
RN100218692	TH0243G	3M AUSTIN CENTER	TRAVIS	11	8731	12.68	50.62
RN101992246	TH0522W	SUNSET FARMS ELECTRIC	TRAVIS	11	4911	5.56	38.63
RN100215938	TH0502F	AUSTIN COMMUNITY RECYCLING AND DISPOSAL FACILITY	TRAVIS	11	4953	7.86	19.21
RN102752763	TH0172E	INTEGRATED CIRCUIT MFG	TRAVIS	11	3674	13.77	17.44
RN100723741	TH0142N	ADVANCED MICRO DEVICES	TRAVIS	11	3674	30.81	17.33
RN100843747	TH0065G	ED BLUESTEIN SITE	TRAVIS	11	3674	21.42	15.40
RN100518026	TH0602A	AUSTIN FABRICATION FACILI	TRAVIS	11	3674	43.24	10.17
RN100542752	TH0232L	SUNSET FARMS LANDFILL	TRAVIS	11	4953	17.29	7.60
RN102776994	TH0015V	AUSTIN HOT MIX	TRAVIS	11	2951	30.15	3.06
RN101059673	TH0310Q	AUSTIN TERMINAL	TRAVIS	11	5171	54.43	1.25
RN100805662	TH0093B	AUSTIN DIVISION	TRAVIS	11	3672	2.30	0.16
RN101957769	TH0191A	AUSTIN AMERICAN STATESMAN	TRAVIS	11	2711	0.85	0.01
RN100216746	TH0247V	AUSTIN COUNTER TOPS	TRAVIS	11	3089	25.13	
RN100725712	WK0148O	SEMINOLE PIPELINE COUPLAN	WILLIAMSON	11	4619	2.41	27.62
RN100728179	WK0171T	DURCON LABORATORY TOPS INCORPORATED	WILLIAMSON	11	3821	13.98	3.17
RN100215193	WK0116E	AQUATIC INDUSTRIES INC	WILLIAMSON	11	3088	30.30	

Table 2.4 Point source emissions in tons/year in the Austin Round Rock MSA (data from 2005 Point Source Emissions Inventory; TCEQ)

RN	ACCOUNT	SITE	COUNTY	REGION	SIC	VOC [tpy]	NOX [tpy]
RN101612083	BF0129I	FORT HOOD	BELL	9	9711	274.60	73.00
RN100228196	BF0053Q	TEMPLE PLANT	BELL	9	3086	231.44	3.52
RN100217975	BG0057U	SOMMERS DEELY SPRUCE POWER	BEXAR	13	4911	146.75	9434.08
RN100220474	BG0259G	1604 PLANT	BEXAR	13	3241	34.24	2407.41
RN100211507	BG0045E	PORTLAND CEMENT	BEXAR	13	3241	148.79	2176.14
RN100217835	BG0186I	VH BRAUNIG PLANT	BEXAR	13	4911	54.41	1188.86
RN102605375	CS0022K	BALCONES PLANT	COMAL	13	3241	12.54	2060.70
RN100212067	CS0018B	HUNTER PLANT	COMAL	13	3241	52.94	1288.95
RN100552454	CS0020O	BULK MINERAL HANDLING	COMAL	13	3274	5.51	575.94
RN100226844	FC0018G	FAYETTE POWER PROJECT	FAYETTE	11	4911	211.77	6834.16
RN100213776	FC0033K	GIDDINGS PLANT	FAYETTE	11	1321	91.00	462.39
RN100215136	FC0051I	LAGRANGE PLANT	FAYETTE	11	1321	11.06	209.10
RN100542927	LI0027L	RELIANT ENERGY LIMESTONE	LIMESTONE	9	4911	249.51	11879.00
RN100221472	MM0001T	ALCOA SANDOW PLANT	MILAM	9	3334	1190.09	7747.99
RN102147881	MM0023J	SANDOW STEAM ELECTRIC	MILAM	9	4911	77.49	4779.40
RN100226570	RI0035C	TWIN OAKS POWER ELECTRIC STATION	ROBERTSON	9	4911	1.83	2184.92

Table 2.5 Large point source emissions in tons/year in the surrounding and upwind counties (data from 2005 Point Source Emissions Inventory; TCEQ)

## 2.3 Monitoring

### 2.3.1 Number and locations of air quality monitors

TCEQ has two regulatory monitors (Audubon C38 and Austin NW / Murchison C03) in the Austin-Round Rock MSA. CAPCOG maintains the following additional ozone monitors:

- The Dripping Springs monitor (C614) has been in place since March 2003
- The San Marcos (C675) and the Round Rock (C674) monitors came on-line in June 2006
- CAPCOG started maintaining the Fayette County C603 monitor in 2002
- The McKinney Roughs monitor (C684) came on-line in August 2006
- CAPCOG installed a monitor at a Lake Georgetown site which started operating in September 2007. The Lake Georgetown site replaces the monitoring site at the Pflugerville Wastewater Treatment Plant, which began operations in December 2002 and was deactivated in November 2006.

Data from six of the sites is accessible on-line from TCEQ's Monitoring Operations website:

[http://www.tceq.state.tx.us/cgi-bin/compliance/monops/site\\_info](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/site_info)

The locations of the Austin area ozone monitors are shown below:

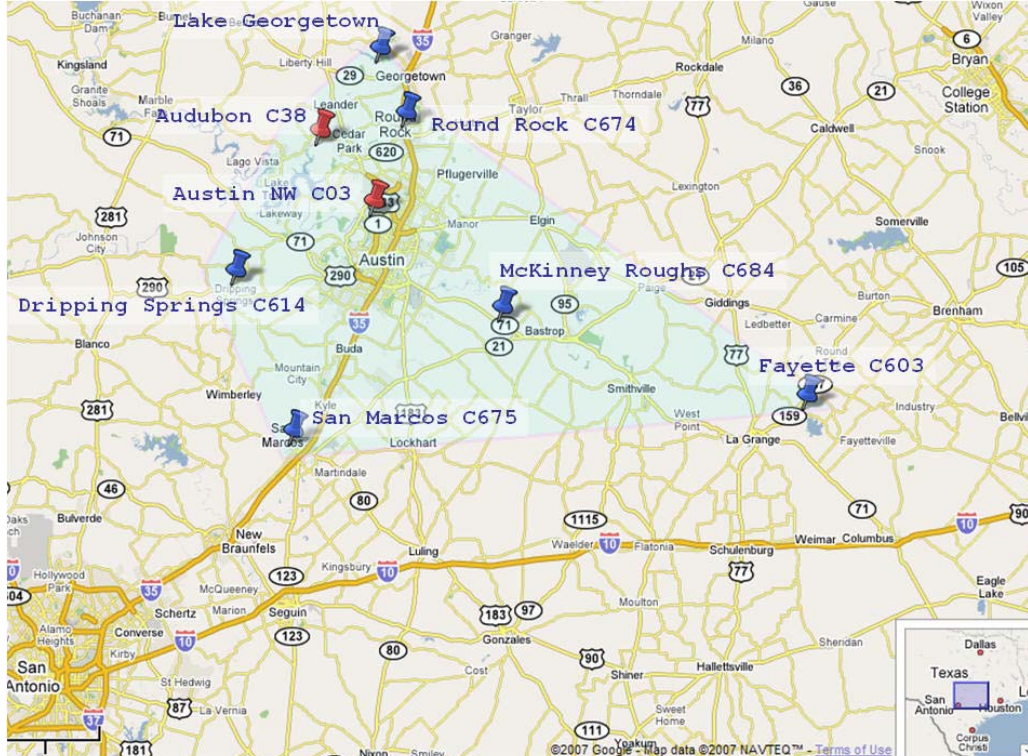


Figure 2.3 Austin Round-Rock MSA ozone monitoring network with regulatory monitors Audubon and Austin NW (red markers) and additional ozone monitors (blue markers)



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Figure 2.4 shows readings from all Austin-Round Rock MSA ozone monitors during 2007 ozone season. Note that during the 2007 ozone season the region experienced unusually low ozone readings.

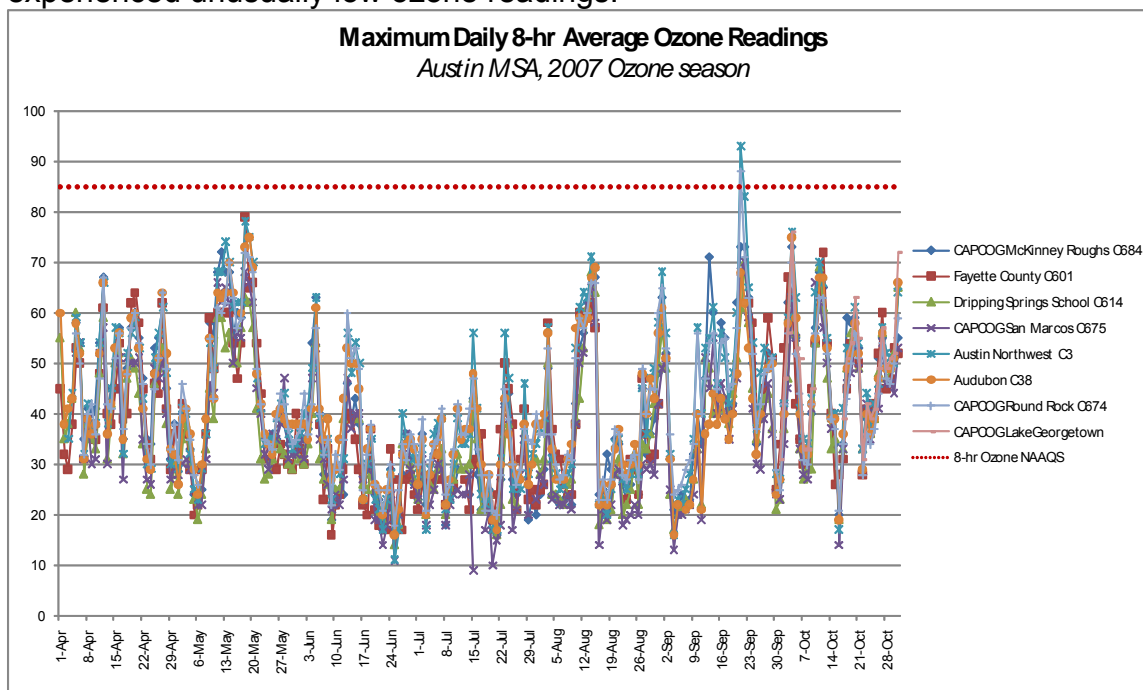


Figure 2.4 Maximum daily 8-hr ozone averages in the Austin MSA during the 2007 ozone season

## 2.4 Analysis of High Ozone Episodes

The HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) model was used to investigate the potential source regions of air entering the Austin Area. HYSPLIT uses meteorological model forecast data from the National Centers for Environmental Prediction (NCEP) archived by Air Resources Laboratory (ARL). Figures 2.5 and 2.6 present the residence time maps for the 20% highest ozone days for June and September based on the maximum ozone concentration at either the Murchison or Audubon monitoring station during the years 2001 through 2005. These back trajectories suggest long-range transport of continental air into Central Texas from upwind areas located to the east and northeast of Texas. Multi-day high ozone episodes are often associated with a ridge of high pressure that extends southwestward into Texas. The transport pattern prior to high ozone days is consistent with the large-scale clockwise circulation around this high pressure ridge. This high pressure ridge is often associated with local meteorological conditions that are favorable for the formation and accumulation of ground-level ozone. In addition, the continental air mass transported into Austin likely contains elevated concentrations of ozone and its precursor compounds associated with both biogenic and anthropogenic emissions from sources located in states and other areas of Texas upwind of Austin (*Austin Conceptual Model*, UT Austin, 2007).

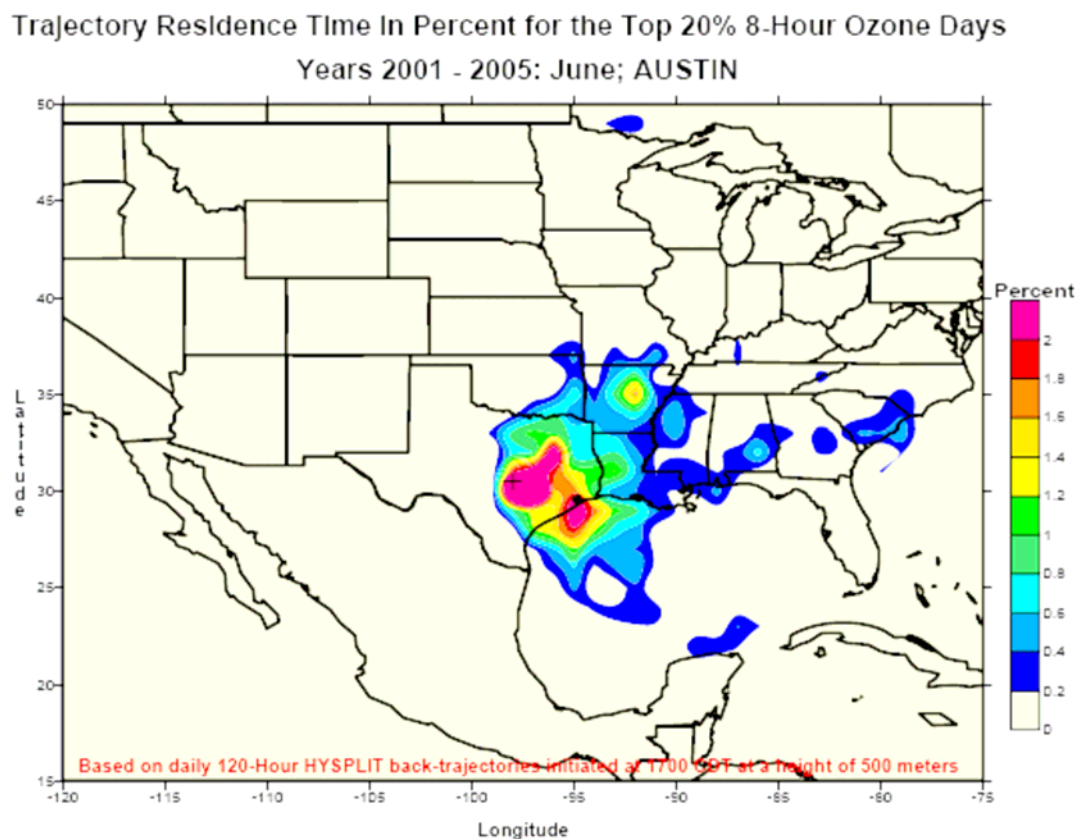


Figure 2.5 Trajectory residence time in percent for the highest 20% ozone days in June from 2001 to 2005.

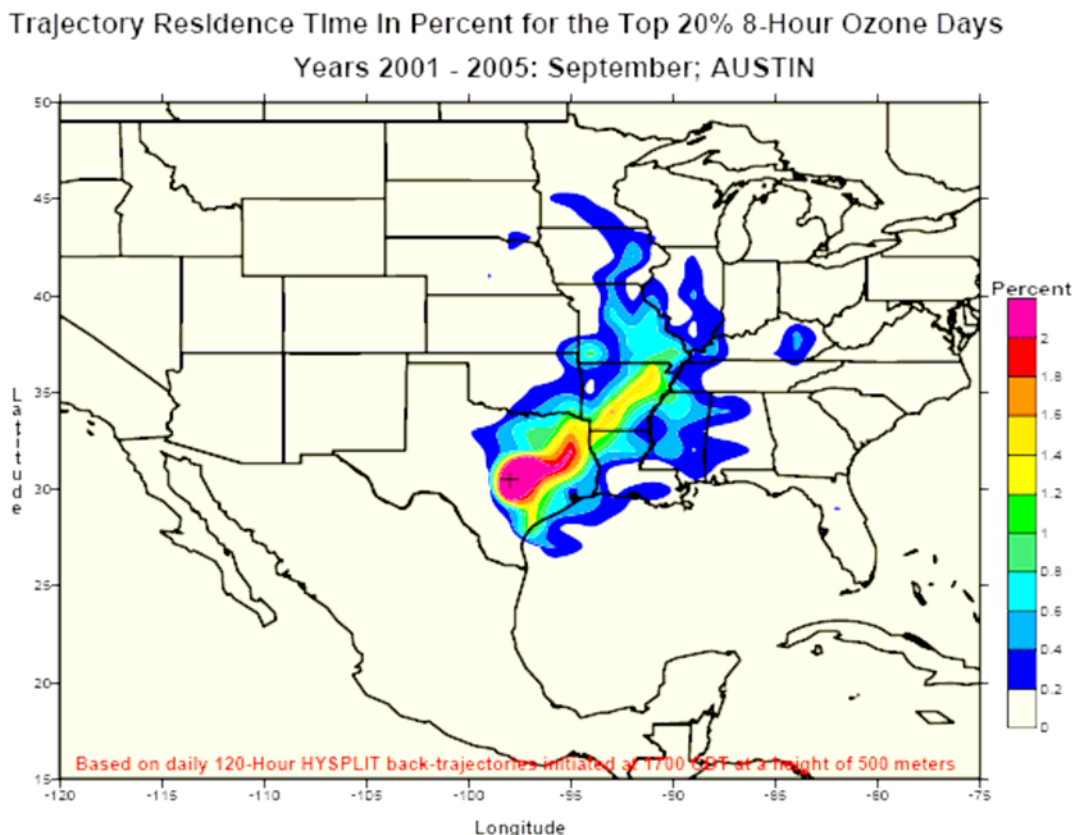


Figure 2.6 Trajectory residence time in percent for the highest 20% ozone days in September from 2001 to 2005.

According to the Austin Ozone Conceptual Model (*The University of Texas at Austin, July 26, 2007*), from 1993 through 2006, one or more monitoring stations measured 75 ppb or greater on 228 days. The number of high ozone days varied from a minimum of 6 in 1996 to a maximum of 34 in 1999. The frequency of occurrence of high ozone days over the course of a typical ozone season is characterized by a bi-modal distribution, with a primary peak in the frequency of high ozone days during the August through early October period and a secondary peak during late May and June. In recent years (2001 through 2006) the average number of late summer high ozone days declined substantially. The frequency of occurrence of high ozone days was equally distributed between the May/June and August/September peaks.

The common meteorological condition occurring with high ozone is a clockwise circulation around a surface ridge of high pressure, often centered over the Central Plains or Ohio/Mississippi River Valleys. It generates northeasterly or easterly wind that transports continental air and haze into eastern Texas. This continental air mass is often characterized by reduced visibility, and likely contains elevated concentrations of ozone and its precursor compounds associated with both biogenic and anthropogenic emissions. High ozone concentrations are often measured at monitoring stations throughout the eastern half of Texas.

In the Austin-Round Rock MSA, monitoring data collected during these episodes shows background ozone concentrations of typically 80-85% of the observed local maximum. Based on these analyses, the enhancement of ozone concentrations due to emissions from sources within the Austin-Round Rock MSA generally ranged between 10 ppb and 20 ppb on individual high ozone days, with an average enhancement of 15 ppb. With background concentrations ranging from 65 ppb to 75 ppb, even relatively small contributions of ozone formed from local source emissions in the Austin-Round Rock MSA would have resulted in an exceedance of the 8-hour ozone NAAQS.

## **2.5 Regional Photochemical Modeling**

Over the past eight years, the region has utilized its resources from the Texas Near Non-attainment Areas Grant Program to develop photochemical models for air quality planning. In 2001, Austin collaborated with San Antonio, Victoria, Corpus Christi, and TCEQ to develop a multi-day high ozone episode for photochemical modeling. The September 13-20, 1999 high ozone episode was selected for development with the Comprehensive Air Quality Model with Extensions (CAMx) photochemical grid model. The September 13-20, 1999 modeling episode fulfills both the requirements of the EPA guidance for modeling 8-hour ozone concentrations and the EPA's Protocol for Early Action Compacts.

The Austin and San Antonio areas used the episode to analyze the emission reductions from various control strategies being considered in the development of the EACs. In addition, the Austin, Corpus Christi, San Antonio, and Victoria near-nonattainment areas have used the episode for various air quality planning activities, including work on:

- sensitivity of ozone formation to reductions of VOC and NO<sub>x</sub> precursors;
- response of ozone to various VOC and NO<sub>x</sub> control strategies;
- comparisons with airborne ozone sampling data;
- comparisons with airborne ozone lidar data;
- development of programs to perform VOC sampling;
- the role of long range point source impacts on local ozone formation; and
- the role of transport on local ozone formation.

In addition to modeling the EAC measures, sensitivity analyses have been run using the 1999 modeling episode to evaluate both potential control strategies and potential sources of emissions growth. Those include runs to investigate the impact from local emission reduction measures included in the State Implementation Plan (SIP). Figure 2.7 demonstrates the emission reductions predicted by the vehicle Inspection and Maintenance program and the Texas Emission Reduction Plan (TERP) projects. Similar modeling analyses were conducted to investigate the impact from potential and new sources in the locations upwind from Austin-Round Rock MSA. Figure 2.8 shows potential

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ozone impacts related to emissions from a proposed coal-fired power plant (Oak Grove).

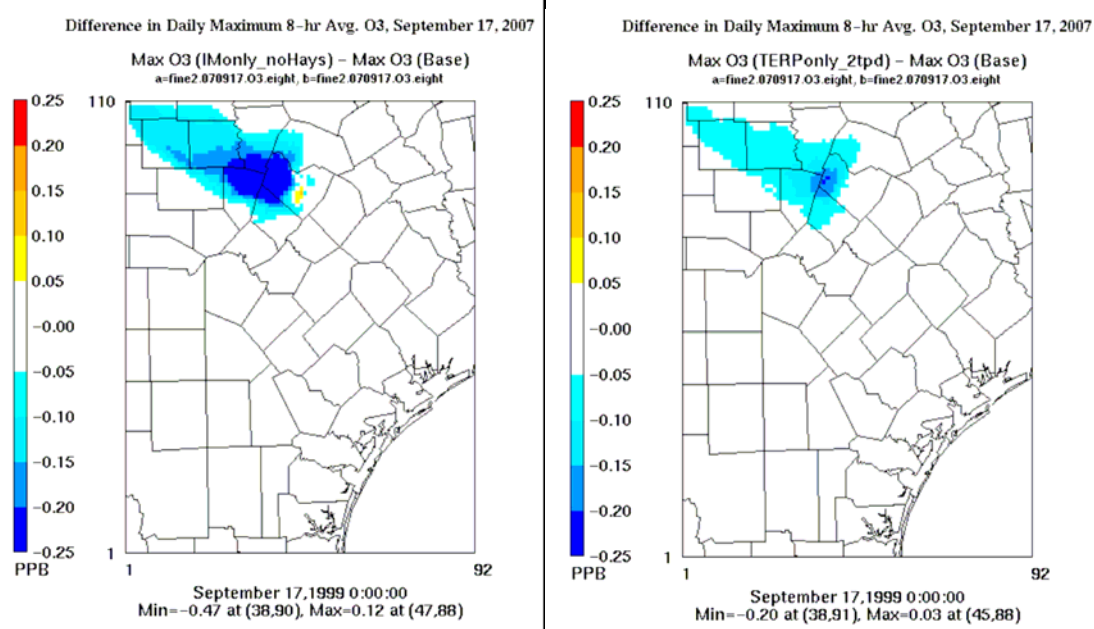


Figure 2.7 Difference in predicted daily maximum 8-hour averaged ozone concentrations on September 17 between the 2007 Future Case with no local controls applied but with I&M programs in Travis and Williamson Counties (left); TERP measures only (right).

### Oak Grove Power Plant Ozone Contribution

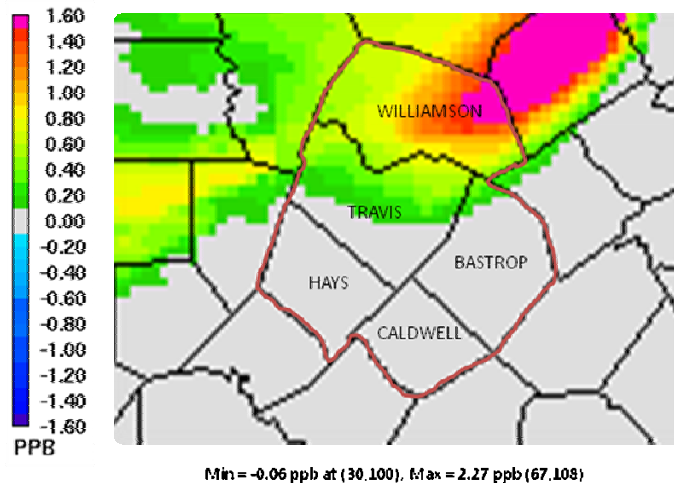


Figure 2.8 Difference in predicted daily maximum ozone concentration with and without Oak Grove Power plant averaged over 8 hours on September 15.



## 2.6 Trends and Measures of Success

The Austin-Round Rock MSA 2002 – 2015 emissions trend analysis is an upgrade from the 2003 Early Action Compact (EAC) analysis “*Emissions Inventory Comparison and Trend Analysis for the Austin-Round Rock MSA: 1999, 2002, 2005, 2007, & 2012.*” The existing document was upgraded by adding the final year (2015) to the on-road and non-road mobile, area and point source inventories and by adjusting the intermediate year emissions with a new base year (2002).

The 2015 emissions for the on-road mobile sources are from the Texas Transportation Institute (TTI) report: “*Austin Early Action Compact Region On-Road Mobile Source Emissions Inventories: 2007, 2015, And 2030: Revised Emissions Results*”, TTI, February 2007. Emissions for 2002, 2005, 2007 and 2012 are from “*Austin/San Marcos Metropolitan Statistical Area On-road Mobile Source Emissions Inventories: 1995, 1999, 2002, 2005, 2007, and 2012*”, TTI, August 2003.

Emission trends for the non-road mobile sources were developed by applying newly developed growth factors to the base year inventory (2002). The non-road growth factors were developed by running the US EPA NONROAD model for years 2002, 2005, 2007, 2012 and 2015. The area and point source emission trends were developed by applying growth factors obtained from the 2003 EAC document. The 2015 trends emission trends were developed by using the interpolation method (reference) for both area and point source categories.

Emissions data were used in the development of air quality trends within the MSA. These emissions are presented in the following categories: area source, non-road mobile source, point source and on-road mobile source. Figure 2.9 shows the total emissions trends of NO<sub>x</sub> and VOC in the Austin-Round Rock MSA. Figures 2.10 to 2.13 show separate emission trends of area sources, non-road and on-road mobile sources, and point sources, respectively.

Due to continued emission reductions from the federal mobile source control program, reductions in the non-road and on-road mobile source emissions are expected to be sufficient to offset projected increases in stationary source emissions. On a cautionary note, new construction of large point sources within or upwind of the region could adversely impact the area’s ability to remain in compliance with the 8-hour ozone NAAQS.

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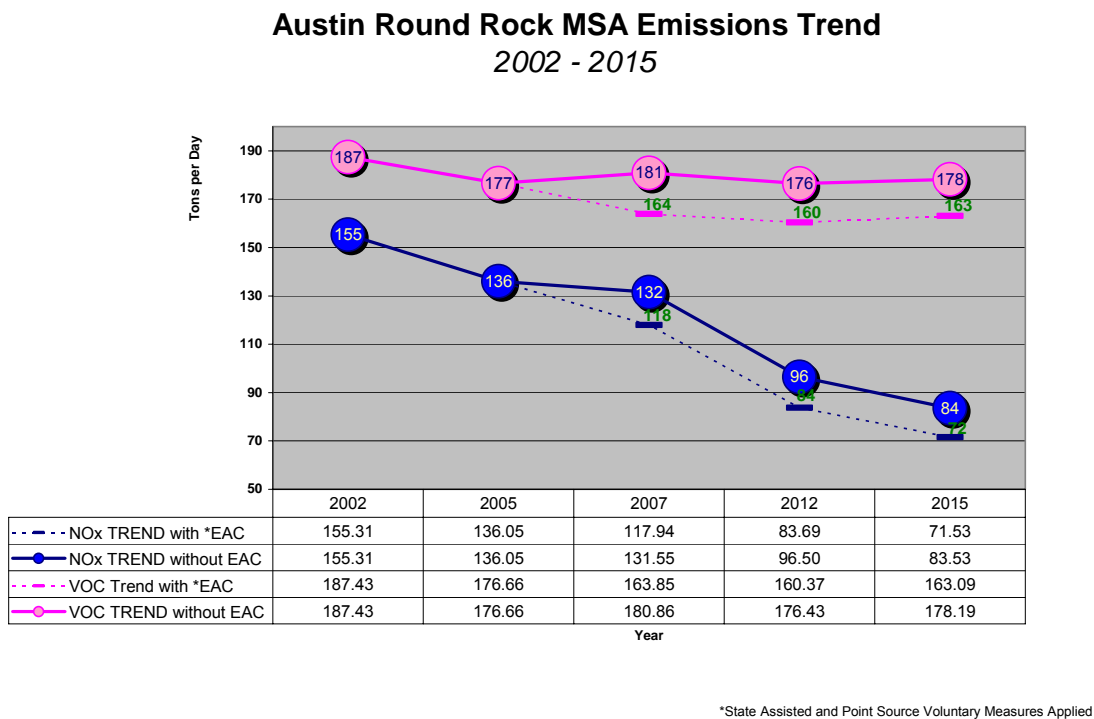


Figure 2.9 Total NOx and VOC emissions trends in the Austin-Round Rock MSA

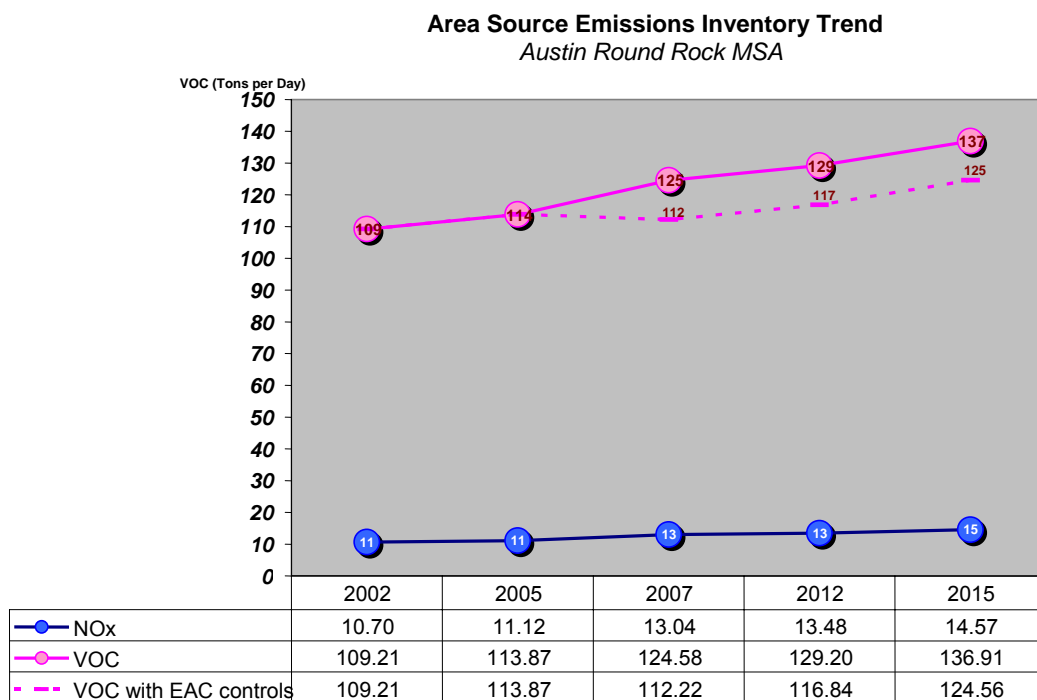


Figure 2.10 Area source emissions trends in the Austin-Round Rock MSA

**Nonroad Mobile Source Emissions Inventory Trend**  
*Austin Round Rock MSA*

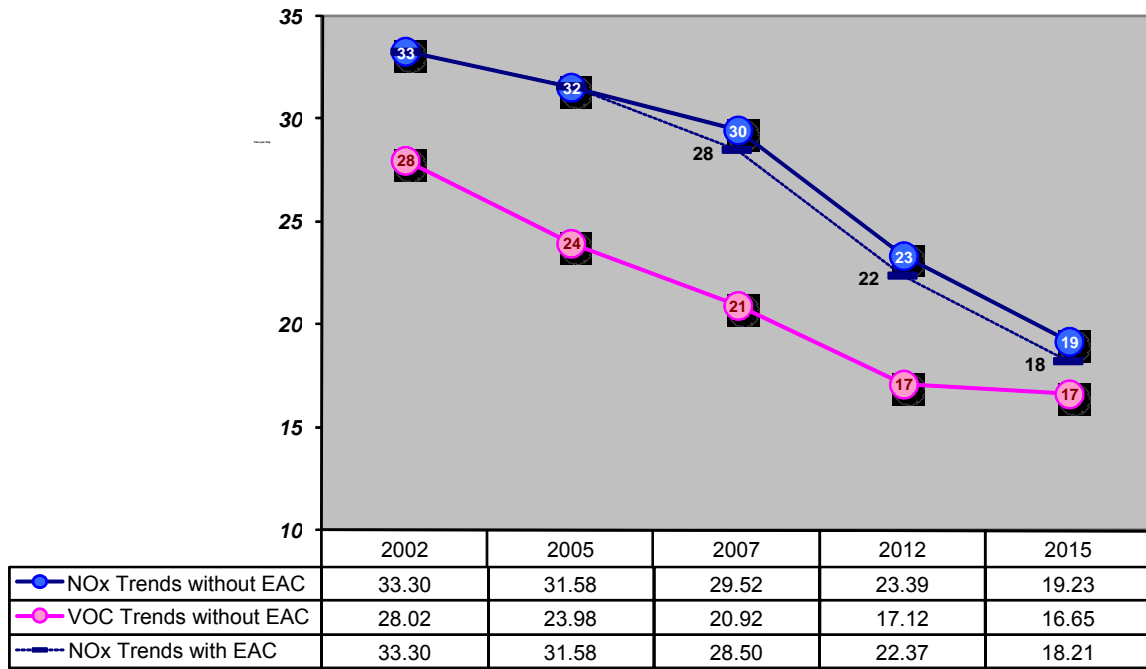


Figure 2.11 Non-road mobile source emissions trends in the Austin-Round Rock MSA

**Onroad Mobile Source Emissions Inventory Trend**  
*Austin Round Rock MSA*

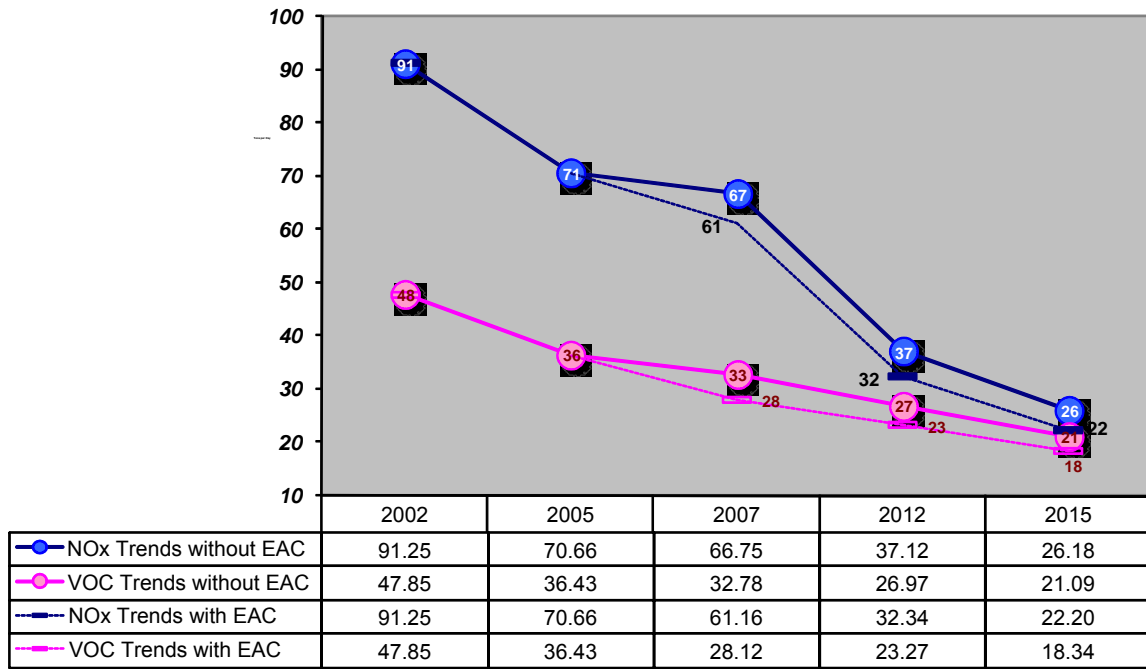


Figure 2.12 On-road mobile source emissions trends in the Austin-Round Rock MSA

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Point Source Emissions Inventory Trend  
Austin Round Rock MSA

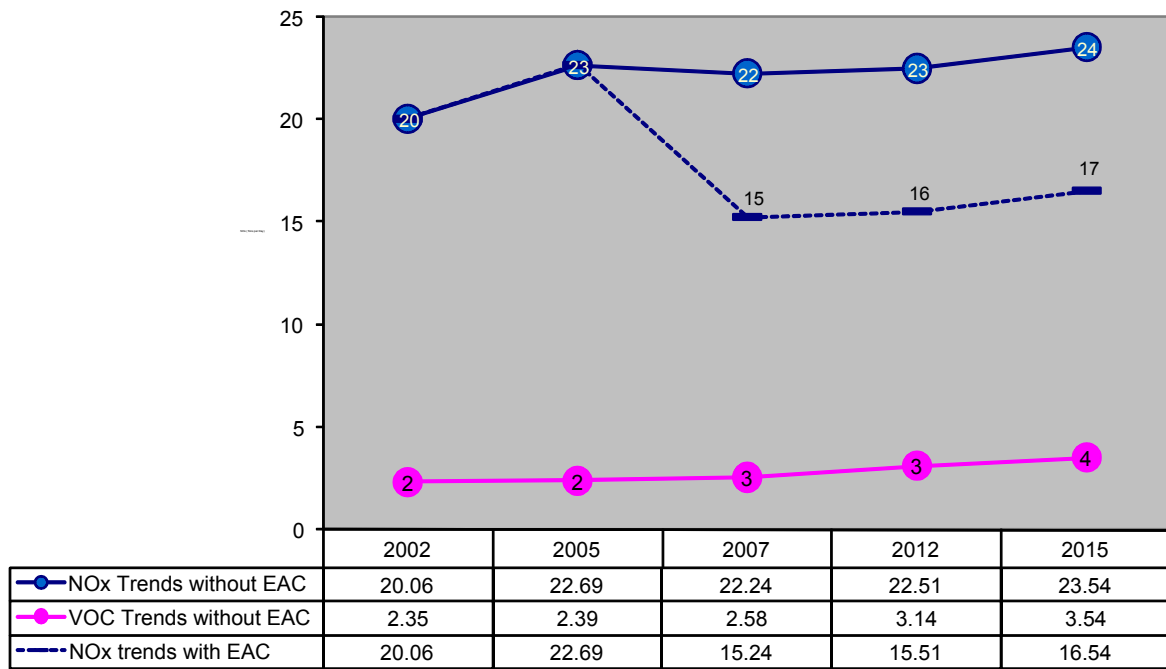


Figure 2.13 Point source emissions trends in the Austin-Round Rock MSA



## **Chapter Three: Action Plan**

The action plan charts the course for the region's air quality management through 2013. It outlines a collaborative, on-going management process that determines the appropriate response to defined implementation triggers and ensures the response is implemented. The action plan can be revised if necessary. While the action plan focuses on NO<sub>x</sub> and VOC emission reductions, many of the measures implemented will also reduce greenhouse gas emissions and petroleum-based fuel use, providing substantial co-benefits.

### **3.1 Planning measures**

#### **3.1.1 Air Quality Planning Activities**

The Capital Area Council of Governments (CAPCOG) is committed to coordinating technical planning activities in support of the jurisdictions represented on the Clean Air Coalition, and to providing good science for assessing regional air quality problems. CAPCOG is enabled by the near-nonattainment (NNA) grant contract with TCEQ and uses funding provided by the Texas Legislature.

CAPCOG will continue to monitor the region's ozone levels and develop and refine the technical analysis required to develop successful control strategies. It will monitor control strategy performance and provide technical support for successful implementation of both voluntary and State-assisted measures adopted in the EAC SIP and/or 8-O<sub>3</sub> Flex program. Tasks included in the FY 08-09 NNA contract work plan are summarized as follows:

##### Monitoring air pollution levels

- Collect ozone concentration and meteorological data within the region by operating six ozone monitoring and meteorological data collection stations. Data collected will be reported to TCEQ's LEADS (IPS MeteoStar Leading Environmental Analysis and Display System) to supplement data collected at the two regulatory monitors operated in the area by TCEQ.
- Evaluate the patterns of ozone transport in Central Texas using aircraft-based instrumentation on planned routes to assess transported ozone, significant point sources and locally generated ozone distribution. Variability in ozone concentration and distribution of high ozone readings in the area may also be assessed using a mobile, ground-based monitoring platform.
- Continue VOC sampling program during the ozone season using canisters designed to capture VOCs in early morning ambient air prior to active photochemistry occurring. The data will be used for comparison with the VOC modeling emissions inventory for assessing emissions trends and for evaluating performance of the EAC VOC emission reduction measures.

#### Emissions Inventory Development

- Update the non-road mobile source emission inventories using the latest Non-road Emission Model and activity data to obtain accurate estimates of non-road emissions, e.g., lawn mowers, agricultural implements, pleasure boats.
- Coordinate with CAMPO and TCEQ to improve and update on-road mobile emissions estimates using the most recent travel demand model and MOBILE input data, including local fuel characteristics.
- Estimate emissions from area sources through a targeted outreach and compliance survey, current population data, or employment data.
- Review and confirm major point source emissions and update minor point source emissions from TCEQ permit files and local business data listings.
- Analyze regional growth trends and land use using data from Envision Central Texas and other studies to project future land uses and employment growth. The rural areas of the CAPCOG region have been transitioning to urban economies over the last decade. Residential and employment growth trends and land use allocations will be used in conjunction with the latest GIS data layers to update and spatially locate 2015 emission inventories, employment, and population projections.

#### Photochemical Modeling Tasks

- Use ozone monitoring and meteorological data for the 2007 and 2008 ozone seasons to update the conceptual model which characterizes meteorological conditions resulting in high ozone levels in the Austin region. Incorporate results of TxAQS II projects and airborne sampling to better characterize emissions source regions and meteorological components contributing to high ozone events in the region. Analyze conceptual model for completeness of the existing photochemical modeling episodes and determine if new episodes are needed for photochemical modeling analysis.
- Work with TCEQ and other NNAs to select and develop a joint modeling episode. The episode may be selected from the TxAQS time period since enhanced modeling input data is available. An additional modeling episode is needed to supplement the existing September 1999 episode model in order to evaluate high ozone events which occur earlier in the season, usually June or early July. This episode could also be used in conjunction with the 1999 episode for attainment analysis required if the area does not monitor attainment in the future.

#### Early Action Compact SIP and Ozone Flex Plan Implementation

- Provide contractor funding to continue existing, local voluntary emission reduction measure program commitments.
- Clean Air Partners Program – a CAPCOG subcontractor, in coordination with the CLEAN AIR Force of Central Texas, administers this program. The program provides guidance to over 100 companies with over 170,000

employees on the implementing measures aimed at reducing commute-related emissions by 10%. Results are provided annually.

- Regional Rideshare Program – CAPCOG, CAMPO, and the Alamo Area Council of Governments selected the GreenRide system developed by Ecology and Environment, Inc. as the framework for a shared regional web-based ride-matching program to reduce emissions from single-occupant vehicles.
- Energy conservation measure outreach efforts – SB 12 includes a requirement for local governments to implement energy conservation measures which will reduce demand for new electric generating units. This task provides staff and subcontractor assistance to member local governments in selecting effective energy conservation measures along with developing effective implementation plans.
- Provide program design and contractor funding assistance to support any enhancements for existing voluntary programs or implementation of new programs required by the 8-hour O<sub>3</sub> Flex program
- Provide updated analysis of the 8-hour O<sub>3</sub> Flex program Action Plan emission reduction measures. These may include analysis of recently developed measures, such as the GreenRide regional rideshare program, increased use of plug-in hybrid vehicles, or new analysis of existing control measures such as the vehicle I&M and remote sensing programs using updated EPA-approved software and/or emission factors. Perform analysis of any additional emission reduction measures for consideration in the 8-hour O<sub>3</sub> Flex program, as needed for contingency measures.
- Provide semi-annual performance analysis of adopted emission reduction measures, verify modeling inputs (particularly growth assumptions), evaluate impacts of transportation trends, collect and assess progress reports from local government 8-hour O<sub>3</sub> Flex program signatories and develop semi-annual reports required by EAC and the subsequent 8-hour O<sub>3</sub> Flex program.
- Monitor permit applications and other sources for proposed new or expanding business or industrial operations in the Austin area or adjacent regions. Monitoring consists of identification of new or expanding plants, verification of building schedules with anticipated dates of startup, and conducting emission inventories. Where appropriate, work with identified new or expanding businesses or industries by providing assistance, outreach materials, and information on voluntary control strategies designed to help mitigate proposed emissions increases. This will include, as appropriate, an impact analysis under the proposed revised ozone standard.

### Public Outreach – CLEAN AIR Force of Central Texas

Support matching funding from CAMPO for CLEAN AIR Force of Central Texas program specialist to continue public involvement and public education designed to promote awareness of air quality issues and their solutions.

## **3.2 Primary Measures**

These emission reduction measures are designed to be sufficient to prevent violations of the current 8-hour ozone standard through 2009. Although many of the measures will be implemented through 2013 as part of the 8-hour O<sub>3</sub> Flex program, analysis of expected emissions growth indicates additional emission reduction measures will be needed beginning in 2010. The additional 2010 measures are included as maintenance for growth offset measures.

Implementation dates for the primary measures vary; many measures are on-going, while others will be implemented within one year of the effective date of the 8-hour O<sub>3</sub> Flex program. The following state and local measures will be continued through 2013 as part of the 8-hour O<sub>3</sub> Flex program.

### **3.2.1 On-going Local EAC Measures**

These measures include the renewed commitments of local governments and participating agencies to over 100 ongoing EAC emission reduction measures. The commitment to continue implementation of ongoing EAC measures through 2013 is triggered by the signing of the 8-hour O<sub>3</sub> Flex program Memorandum of Agreement (MOA).

These measures include specific measures implemented by local governments and participating agencies to reduce emissions from their operations and within their communities. Example measures include ozone action day education and response programs, fleet and fuel improvements, employee commute reduction, e-government, and transportation system and land-use improvements. Many of these measures were initially implemented as EAC or 1-hour O<sub>3</sub> Flex measures. All of the on-going measures are above and beyond those required by state and federal law. Measure specifics vary by jurisdiction, so emission reductions from the on-going local measures have not been quantified or included in the photochemical modeling. The on-going emission reduction measures implemented by local governments and participating agencies are found in Appendix B.

### EAC Transportation Emission Reduction Measures (TERMS)

TERMs are transportation projects designed to reduce vehicle use, improve traffic flow, or reduce congested conditions. A transportation project that adds single-occupancy vehicle (SOV) capacity is not considered a TERM. General categories of TERMS include intersection improvements, traffic signal synchronization improvements, bicycle and pedestrian facilities, high-occupancy

vehicle lanes, major traffic flow improvements, park and ride lots, intelligent transportation system (ITS) and transit projects.

TERMS are similar to transportation control measures (TCMs) except that TCMs apply to non-attainment areas. TCMs are subject to nonattainment area SIP and transportation conformity requirements while TERMS are not.

Several jurisdictions and agencies committed to and implemented numerous TERMS in various locations in the MSA. Most of these TERMS will continue to reduce emissions past 2007.

**2007 Emission Reductions: 0.72 tpd NOx, 0.83 tpd VOC (in EAC SIP)**

#### Commute Solutions –

CAMPO hosts the Commute Solutions Coalition, a regional program to encourage alternatives to the drive-alone commute that will reduce congestion and improve air quality. Coalition members attend numerous events and provide information on commute alternatives. Commute Solutions also offers employers free training for employee transportation coordinators. The program also provides seed money for projects that provide or encourage commute alternatives through the Innovator Grant Program. And every year, Commute Solutions holds the Commuter Challenge, a month long contest where participants log their alternative commutes in order to be eligible for prizes. Commute Solutions also has a website: [www.commutesolutions.com](http://www.commutesolutions.com).

#### CLEAN AIR Force of Central Texas

Founded in 1993, the CLEAN AIR Force of Central Texas (CAF) is a 501(c) (3) organization of business, government, environmental and community leaders united in the common goal of finding workable solutions for improving air quality in Central Texas. The CAF conducts and coordinates public awareness and education campaigns and implements voluntary programs to reduce emissions. Some of the programs the CAF implements include the High School Public Service Announcement (PSA) Contest, the Electric Lawn Mower Discount Program, the Ozone Action Day Alert Program, the Car Care for Clean Air Program that provides free emission testing and maintenance information, the Clean Air Partners Program, and the Clean School Bus Program. See also: [www.cleanairforce.org](http://www.cleanairforce.org).

#### Clean Air Partners Program

The Clean Air Partners Program assists employers in reducing emissions through a variety of strategies, while promoting their clean air success stories to the community. Clean Air Partners is a program of the CLEAN AIR Force of Central Texas (CAF), which helps with its coordination and marketing. By becoming a Partner, employers volunteer to carry out employee clean air programs and other clean business practices to reduce the emissions that contribute to unhealthy air in our region by 10% over three years. Common strategies include employee commute solutions programs (encouraging transit

use, vanpooling, carpooling, teleworking, biking, walking , flexible schedules), use of cleaner fleets, clean energy practices (e.g., GreenChoice), low-emission construction or landscaping activities, water conservation practices, and many other activities that can contribute to cleaner air. Employers report their achievements once a year through an online reporting tool. The Clean Air Partners Program currently consists of 106 Central Texas businesses, organizations and government entities, representing over 170,000 regional employees. See also: [www.cleanairpartnerstx.org](http://www.cleanairpartnerstx.org).

#### Clean School Bus Program

The Clean School Bus Program is a cooperative partnership among the CLEAN AIR Force of Central Texas, CAPCOG, TCEQ, EPA, and school districts in Central Texas. The program helps school districts reduce schoolchildren's exposure to Particulate Matter (PM) and NOx from school buses. Emission reductions are achieved by retrofitting, replacing, or re-powering older diesel school buses. The program also encourages policies and practices to eliminate unnecessary school bus idling. See also: [www.cleanschoolbus.net](http://www.cleanschoolbus.net).

#### Clean Cities

Clean Cities is a program designed to assist the United States to use its own renewable fuels and to cut dependence on foreign oil. The Department of Energy is committed to energy use in America's transportation sector that is more efficient, less dependent on foreign oil, less environmentally disruptive, sustainable and safe. By encouraging alternative fuel and vehicle use, the Clean Cities program helps enhance energy security and environmental quality at both the national and local levels.

Respondents to a 2006 survey of Central Texas Clean Cities members reported operating 1804 alternative fuel or clean technology vehicles. Members also reported using 98,527 gasoline gallon equivalents (GGEs) of compressed natural gas (CNG) and 6,178, 664 GGEs of liquefied petroleum gas, or propane. Alternative fueled mowers are also encouraged by Clean Cities members. One member reported using 2,450 gallons of alternative fuels to power mowers in 2006. The public can access alternative fuels through the three ethanol (E85), 36 bio-diesel, and 13 propane public fueling stations in the region. See also: [www.ci.austin.tx.us/cleancities/](http://www.ci.austin.tx.us/cleancities/).

#### The Austin Climate Protection Plan

The City of Austin's Climate Protection Plan is an aggressive plan to reduce or eliminate greenhouse gases. Many of the measures to reduce greenhouse gases will also reduce ozone-forming emissions, providing an implementation co-benefit. The Austin Climate Protection Plan uses a five-pronged approach:

- Municipal Plan – Make all City of Austin facilities, fleets and operations 100% carbon-neutral by 2020.
- Utility Plan – Increase efforts in conservation, energy efficiency and renewable energy programs and implement requirements for carbon



neutrality on any new generation. Offset need for 700 MW power plant through energy efficiency and meet 30% of power needs in Austin through renewable energy by 2020.

- Homes and Buildings Plan – Enhance building codes maximize energy efficiency. Implement zero net-energy capable standard for all new home construction and increase energy efficiency by 75% in all other new construction by 2015.
- Community Plan – Develop a comprehensive community plan to reduce greenhouse gas emissions through a network of stakeholders and technical advisors. Form a Climate Action Team to assess greenhouse gas emissions from community activities. Collaborate with stakeholders and technical experts to develop short- and long-term goals.
- “Go Neutral” Plan – Provide tools and resources for individuals and businesses to reduce their carbon footprint to zero. Develop an online carbon footprint calculator and a recognition program for those that achieve carbon neutrality.

See also: [www.coolaustin.org](http://www.coolaustin.org)

### **3.2.2 State Rules Implemented Through the EAC**

The following emission reduction measures are implemented through state rule as part of the EAC. All these measures are above and beyond state and federal requirements:

Locally Enforced Idling Limitations – This measure limits idling of gasoline and diesel-powered engines in heavy-duty motor vehicles within the jurisdiction of any local government in the state that has signed a Memorandum of Agreement (MOA) with TCEQ to delegate enforcement to that local government.

The MSA’s initial MOA to locally enforce idling limits began with the EAC and expires January 2, 2008. It is scheduled to be renewed through 2013 prior to the beginning of the 2008 ozone season.

- Administrative Code: Title 30, Subchapter J, *Operational Controls for Motor Vehicles, Division 1 Motor Vehicle Idling Limitations*, new Sections §§114.510-114.512, and 114.517

#### **2007 Emission Reductions: 0.67tpd NO<sub>x</sub> (in EAC SIP)**

Vehicle Emission Inspection & Maintenance – A version of the State vehicle emissions Inspection and Maintenance (I/M) program has been implemented in Travis and Williamson Counties. This version uses on-board diagnostics and a tailpipe test instead of the more expensive dynamometer test required in the Dallas and Houston nonattainment areas. Travis and Williamson counties administer an associated Low Income Repair Replacement Assistance Program (LIRAP).

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- Administrative Code: Title 30, Subchapter C, *Vehicle Inspection and Maintenance and Low Income Vehicle Repair Assistance, Retrofit, and Accelerated Vehicle Retirement Program, Division 1 Vehicle Inspection and Maintenance*, Sections §§114.80-114.87

**2007 Emission Reductions: 3.22 tpd NO<sub>x</sub>, 3.83 tpd VOC (in EAC SIP)**

Stage 1 Vapor Recovery - Amendments to existing rules lowered the exemption level for facilities subject to Stage I vapor recovery controls from 125,000 gallons in a calendar month to 25,000 gallons of gasoline in a calendar month.

- Administrative Code: Title 30, Chapter 115, Subchapter C, *Volatile Organic Compound Transfer Operations, Division 2, Filling of Gasoline Storage Vessels (Stage I) for Motor Vehicle Fuel Dispensing Facilities*, Sections §§115.227 and 115.229

**2007 Emission Reductions: 4.88 tpd VOC (in EAC SIP)**

Degreasing Requirements - Amendments to existing rules extend restrictions on certain solvents.

- Administrative Code: Title 30, Chapter 115, Subchapter E, *Solvent-Using Processes, Division 1, Degreasing Processes*, §§115.412, 115.413, 115.415-115.457, and 115.419

**2007 Emission Reductions: 5.55 tpd VOC (in EAC SIP)**

Cut-back Asphalt Restrictions - Amendments to existing rules extend restrictions on the use of certain paving substances to the Austin-Round Rock MSA.

- Administrative Code: Title 30, Chapter 115, Subchapter F, *Miscellaneous Industrial Sources, Division 1, Cutback Asphalt*, Sections §§115.512, 115.516, 115.517, and 115.519

**2007 Emission Reductions: 1.03 tpd VOC (in EAC SIP)**

Low Emission Gas Cans – State rule established requirements relating to the design criteria for portable fuel containers and portable fuel container spouts and the sale or distribution of the portable fuel containers.

- Administrative Code: Title 30, Subchapter G, *Consumer-Related Sources, Division 2, Portable Fuel Containers*, Sections §§115.620-115.622, 115.626, 115.627, and 115.629

**2007 Emission Reductions: 0.89 tpd VOC (in EAC SIP)**

Texas Emission Reduction Plan (TERP) – This existing TCEQ program, created by the State Legislature in 2001, provides grants and other incentives to improve air quality. TERP can provide funding for:

- i. Cleaner on- and off-road engines
- ii. Cleaner fuels and other infrastructure programs
- iii. Research and development of new technologies

A list of approved TERP grants in the MSA is found in Appendix C.

**2007 Emission Reductions: 2.26 tpd NO<sub>x</sub> (2 tpd in EAC SIP)**

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The Texas Legislature provided funding for the TERP program through 2013. TCEQ will continue to notify potential TERP participants in the MSA of upcoming funding opportunities through 2013. Governments and businesses in the MSA will continue to apply for TERP grants when available and appropriate. Emission reductions from projects funded during the term of the MOA will be reported in the applicable 8-hour O<sub>3</sub> Flex program progress reports.

Local Power Plant Reductions – Austin Energy, LCRA and UT agreed to specific reductions in their EAC commitments.

**2007 Emission Reductions: 1,866 tons per year NOX, approximately 7 tpd (in EAC SIP)**

Other State and Federal Measures - In addition to the state measures listed previously, the following state and federal measures apply to the MSA.

<b>Federal Measures</b>	<b>Description</b>
Area and Non-Road Measures	EPA has implemented a series of strategies for area and non-road sources. Some of these include the gas engine rule and marine recreational engine standards.
On-Road Measures	EPA has implemented a series of strategies for on-road vehicles. Tier 1 and Tier 2 vehicle standards, low-sulfur diesel standards, and National Low Emission Vehicle standards
<b>State Measures</b>	<b>Description</b>
California Gasoline Engines	California standards for non-road gasoline engines 2.5 horsepower or larger
Gas-Fired Heaters and Small Boilers	Rule limiting NOx emissions from these small-scale residential and industrial sources.
Low Reid Vapor Pressure Gasoline	Low RVP gasoline is fuel that is refined to have a lower evaporation rate and lower volatility than conventional gasoline. It also reduces the evaporative emissions generated during vehicle refueling and reduces VOCs.

### 3.2.3 New Measures for the 8-hour O<sub>3</sub> Flex Program

The region is implementing the following new measures designed to keep ozone levels below the current 8-hour standard. These measures will be implemented within one year of the MOA signing, unless otherwise specified.

The Regional Web-based Rideshare Matching program, described below, will be fully implemented and quantified within the first year of the 8-hour O<sub>3</sub> Flex Program, as required.

#### Regional Web-based Rideshare Matching Program

The Capital Area Metropolitan Planning Organization (CAMPO) and the Alamo Area Council of Governments (AACOG) are partnering with Ecology and

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Environment, Inc. to implement an inter-regional web-based rideshare matching and transportation information system covering 22 counties, including the Austin-Round Rock MSA. This program will help reduce drive-alone commutes in and between Austin and San Antonio, as well as throughout the 22-county region. This will reduce NO<sub>x</sub> and VOC emissions in both Austin and San Antonio. Program implementation began in late 2007. At a minimum, the Austin MSA portion of the program will continue through 2013 as part of the 8-hour O<sub>3</sub> Flex Program.

River Cities Rideshare, [www.rcride.com](http://www.rcride.com), is a web and map-based ridesharing program designed for ease-of-use by commuters and administrators in order to maximize participation and usefulness. After accepting the Terms of Use Agreement, the user can access instant, map-based rideshare matches, as well as bus-route, biking or walking information. The program provides the user with a template email to send to prospective matches and an email notification feature if matches are identified in the future. The program is available in both English and Spanish.

Both the user and the program administrator can track and quantify miles and dollars saved, emissions reduced, and calories burned. The program administrator can use the program's incentive management feature to encourage participation. The amount of NO<sub>x</sub> and VOC reduced by the program will depend on participation rates and vary over time. Current daily emission reductions for the Austin area are estimated at 1215 grams per day VOC and 1541 grams per day NO<sub>x</sub>. This estimate will be updated and reported as part of the 8-hour O<sub>3</sub> Flex program progress report.

### Expanded Clean Air Coalition

The Clean Air Coalition will invite at least five additional cities in the MSA to join the Coalition and implement emission reduction measures appropriate to their circumstances. The invitation will include information on regional ozone and offer support and technical assistance in determining appropriate emission reduction measures. At a minimum, potential members will be encouraged to implement an Ozone Action Day (OZAD) Education and Response Program. The CLEAN Air Force of Central Texas provides regional support for OZAD program implementation.

The CAC will extend invitations no later than one year after the MOA effective date. New members will implement any emission reduction measures they determine appropriate within one year of joining the CAC. New measure implementation will be quantified to the extent possible and included in the next applicable 8-hour O<sub>3</sub> Flex program progress report.

#### Ozone Watch and Warning System

The CAC requested TCEQ implement an ozone watch and warning system for the MSA in a letter dated October 2, 2007(see Appendix A). An ozone watch and warning system notifies participants when high ozone levels are expected to occur and sends a warning when high ozone levels are actually occurring. This system would replace the current ozone watch only system and offer extra protection for individuals sensitive to high ozone levels.

The CAC is hopeful that TCEQ can implement the MSA's Ozone Watch and Warning System within one year of the MOA effective date, however, TCEQ will determine the implementation date. Once implemented, program status will be included in the next applicable 8-hour O<sub>3</sub> Flex program progress report.

#### Primary TERMS

Various governments and agencies in the MSA commit to implement TERMS in the 2008 and 2009 timeframe as primary 8-hour O<sub>3</sub> Flex program measures. A list of the primary TERMS is found in Appendix D. The primary TERMS' status and emission reductions will be reported in the 8-hour O<sub>3</sub> Flex program progress report.

#### AirCheck Texas Local Initiative Projects

The state has authorized excess LIRAP funds to be used to develop and implement new air control strategies designed to assist local areas in complying with state and federal air quality rules and regulations, as well as programs to enhance and improve the AirCheck vehicle inspection and maintenance program. Travis and Williamson Counties, in cooperation with TCEQ, will develop and implement emission reduction measures using excess LIRAP funds. The measures will be implemented as expeditiously as practicable, quantified to the extent possible, and included in the next applicable 8-hour O<sub>3</sub> Flex program progress report.

#### Paving of Unpaved Roads

An in-use vehicle study conducted by the Texas Transportation Institute (TTI) indicates that vehicles emit more pollutants on unpaved roads, with other variables held constant. The study is found in Appendix E. Local governments will identify candidate road-paving projects and potential funding sources. Roads will be paved if sufficient funding is secured.

#### Voluntary Local Measures

In addition to continuing EAC measures, some governments and agencies are committing to implement new measures for the 8-hour O<sub>3</sub> Flex program. For example:

- The City of Austin will implement a carpool matching system for employees to its numerous on-going commitments.

- Travis County will implement a carpool parking incentive and an Ozone Action Day sign program at the County's drive through facilities to its on-going commitments.

One new agency, the Central Texas Regional Mobility Authority, committed to implement voluntary emission reduction measures. (See Appendix B)

Other measures

Other planning or emission reduction measures mutually agreed to by the signatory parties may be implemented. Once implemented, measure status will be included in the 8-hour O<sub>3</sub> Flex program progress report.

### **3.3 Maintenance for Growth Offset Measures**

Implementation of one or more of these measures, intended to address expected emissions growth, will be implemented no later than December 31, 2010. The MOA signatories will evaluate the most recent emissions estimates and other relevant factors to determine the appropriate measure(s) to implement no later than January 1, 2010.

TERP

Local governments and businesses will continue to apply for TERP funding when available and as appropriate. TCEQ will notify the MOA signatories when TERP grant funding is available. Emission reductions from projects funded during the term of the MOA will be reported in the applicable 8-hour O<sub>3</sub> Flex program progress reports.

Maintenance for Growth TERMS

Various governments and agencies in the MSA commit to implement TERMS in the 2010 to 2013 timeframe. The specific 2010 to 2013 TERMS selected as growth offset measures will be determined no later than January 1, 2010. The status and emission reductions from these TERMS will be reported in the 8-hour O<sub>3</sub> Flex program progress report.

Further Expand the Clean Air Coalition

The CAC will invite all cities in the MSA with populations ≥ 10K to join the Clean Air Coalition and implement emission reduction measures appropriate to their circumstances. The invitation will include information on regional ozone and offer support and technical assistance in determining appropriate emission reduction measures. At a minimum, potential members will be encouraged to implement an Ozone Action Day (OZAD) Education and Response Program. The CLEAN Air Force of Central Texas provides regional support for OZAD program implementation.

Energy efficiency and conservation programs

Measures to reduce energy use through efficiency and conservation programs also reduce NO<sub>x</sub> and other pollutants generated as a by-product of energy

production. These measures will also reduce greenhouse gases and petroleum fuel use, providing an implementation co-benefit. Local governments, working through the Clean Air Coalition, CAPCOG and the EAC Task Force, will develop an inventory of energy efficiency and conservation programs implemented in the MSA by electric generation and/or distribution companies, state and local government agencies and other entities with available information. At a minimum, the inventory will be evaluated for adequacy, geographic coverage and effectiveness, and the emissions reductions quantified to the extent possible. Local governments may request assistance from TCEQ, the State Energy Conservation Office and the Texas A&M Energy Systems Lab in developing and evaluating the inventory. As part of the evaluation, local governments, working with implementing agencies, stakeholders and other interested parties, will determine whether the implemented measures are sufficient or improvements are needed.

Local governments will share the evaluation findings with implementing agencies, signatory parties, stakeholders and the public and recommend improvements if needed. Local governments will also provide citizens with information on applicable energy efficiency and conservation programs and encourage citizens to reduce energy use. The status of implemented measures will be included in the 8-hour O<sub>3</sub> Flex program progress report beginning with the next applicable report.

#### Other measures

Other emission reduction measure not specifically listed may be implemented as an emissions growth offset measures if the signatory parties agree to do so. The MOA signatories will identify and evaluate specific measures for consideration by July 1, 2010. Implementation dates and quantification possibilities will vary depending on measure specifics. The status of measures implemented will be included in the 8-hour O<sub>3</sub> Flex program progress report beginning with the first report after the measures are selected.

### **3.4 Tier I Contingency Measures**

In addition to the Maintenance for Growth Offset Measures, which address anticipated increases in emissions due to growth, the region has prepared a series of contingency measures for implementation in the event that the region's design value reaches specified trigger levels.

Should the region's design value reach 84 ppb, the signatory parties will implement one or more of the following Tier I contingency measures. Within 90 days of a regulatory monitor recording a reading that would result in a design value of 84 ppb, the parties will work cooperatively to determine the cause of the increase and to select a specific Tier I contingency measure(s) that will be implemented. The Tier I measure(s) will be implemented as expeditiously as practicable, but no later than two years from the date of the trigger (i.e., the date



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that one of the region's regulatory monitors records a reading that, if valid, would result in a 3-year design value of 84).

### Voluntary Mobile Source Emission Reduction Program (VMEP)

Local governments will implement a VMEP consisting of one or more voluntary mobile source emission reduction measures. VMEP measures that may be implemented as a Tier 1 contingency measure include expanding, upgrading and/or promoting the regional web-based rideshare matching program, [www.rcride.com](http://www.rcride.com), and/or the Clean Air Partners Program to increase participation and associated emissions reductions. Other VMEP measures may be implemented if mutually agreed upon by the signatory parties. Tier I Contingency VMEP emission reductions will be included in the 8-hour O<sub>3</sub> Flex program progress report.

### TERP

Governments and businesses in the MSA will continue to apply for TERP grants when available and as appropriate, although TERP finds are not guaranteed beyond the current funding/fiscal cycle (2008-2009). TCEQ will notify the MOA signatories when TERP grant funding is available. Emission reductions from projects funded during the term of the MOA will be reported in the applicable 8-hour O<sub>3</sub> Flex program progress reports.

### NOx emissions-reducing additives

The MOA signatories will encourage area fleets, school districts and other businesses with non-road diesel vehicles to voluntarily use diesel fuel that has been enhanced with a NOx emission-reducing additive to become Texas Low Emission Diesel (TxLED) equivalent fuel during all or part of the ozone season. Local governments will use diesel fuel with the NOx emission reduction additive or other form of TxLED equivalent fuel in their own operations during ozone season to the extent possible. The MOA signatories will work with MSA businesses and stakeholders to secure commitments and begin using the additive as expeditiously as practicable.

### TERMS

Various governments and agencies in the MSA will commit to implement additional TERMS if the MSA design value reaches 84 ppb or higher. The Tier I contingency TERMS will be additional TERMS not previously committed to the 8-hour O<sub>3</sub> Flex Program as primary TERMS. Governments and implementing agencies will identify Tier 1 contingency TERMS. Tier I TERMS will be implemented as expeditiously as practicable and according to the implementation schedule. The status and emission reductions from the Tier I contingency TERMS will be reported in the 8-hour O<sub>3</sub> Flex program progress report.

### Expand participation in Locally Enforced Idling Limitations

The CAC will encourage other municipalities in the MSA to enter into a MOA with TCEQ to locally enforce idling limits for gasoline and diesel-powered engines in

heavy-duty motor vehicles within their jurisdiction. The CAC will invite new CAC members and other municipalities to consider participating in the MOA. TCEQ will give prompt consideration to locally enforced idling limit MOAs requested by local governments in the MSA.

#### Other Measures

Other planning or emission reduction measures mutually agreed to by the signatory parties may be implemented. Once implemented, measure status will be included in the 8-hour O<sub>3</sub> Flex program progress report.

### **3.5 Tier II Contingency Measures**

Should the region's design value reach or exceed 85 ppb, the signatory parties will implement one or more of the following Tier II contingency measures. Within 90 days of a regulatory monitor recording a reading that would result in a design value of 85 ppb, the parties will work cooperatively to determine the cause of the increase and to select a specific Tier II contingency measure(s) that will be implemented. The Tier II measure(s) will be implemented as expeditiously as practicable, but no later than two years from the date of the trigger (i.e., the date that one of the region's regulatory monitors records a reading that, if valid, would result in a 3-year design value of 85 or greater).

Tier II contingency measure(s) will be quantified to the extent possible and implementation status will be included in the applicable 8-hour O<sub>3</sub> Flex program progress report.

#### Additional Tier I Measures

The signatory parties will consider implementing one or more of the Tier I measures that were not previously implemented.

#### Vehicle Inspection and Maintenance Program

MOA signatories will evaluate the vehicle inspection and maintenance program in Travis and Williamson Counties to determine if the program can reasonably be revised to increase vehicle emission reductions achieved by the program. Program revisions that may be considered include additional remote sensing and testing diesel vehicles. Other program revisions may also be considered.

The program could be expanded to Bastrop, Caldwell or Hays Counties if the county and largest city in the county request that TCEQ include that county in the program.

#### TERMS

Various governments and agencies in the MSA will commit to implement additional TERMS. The Tier I contingency TERMS will be additional TERMS not previously committed to the 8-hour O<sub>3</sub> Flex program. The specific TERMS

selected as Tier 1 contingency measures will be determined as expeditiously as practicable. The status and emission reductions from the Tier I contingency TERMS will be reported in the 8-hour O<sub>3</sub> Flex program progress report.

#### Other measures

Other planning or emission reduction measures mutually agreed to by the signatory parties may be implemented. Once implemented, measure status will be included in the 8-hour O<sub>3</sub> Flex program progress report.

If unforeseen circumstances dictate the appropriateness of an emission reduction strategy not found in the plan, the signatory jurisdictions reserve the right to submit the alternative strategy to EPA for approval. Should an alternative strategy be submitted, its emission reductions will be equivalent or greater to those of the strategy it replaces.

### **3.6 Coordination and Public Participation**

The CAC established an EAC Task Force (EACTF) composed of staff from signatory jurisdictions, participating agencies, and including representatives of business and advocacy organizations, to develop EAC recommendations. The EACTF continues to meet regularly and to facilitate EAC implementation and reporting. The CAC directed the EACTF to build on the success of the EAC and to prepare recommendations for an 8-hour O<sub>3</sub> Flex program.

The EACTF developed the 8-hour O<sub>3</sub> Flex program elements in consultation with its full membership. The CLEAN Air Force of Central Texas coordinated a print advertising campaign to introduce the proposed plan and to encourage public comments and suggestions. The newspaper ads ran in all five MSA counties. (See Appendix F)

Each jurisdiction will follow its own standard public involvement process. The complete plan will be posted on the CAF website, as well as on various other regional sites.

The EACTF will continue to assist local governments and participating agencies with implementing, tracking, and documenting the emission reduction measures associated with their jurisdiction's commitments. The Capital Area Council of Governments (CAPCOG) coordinates reporting requirements and quantifies results to the extent possible

## 3.7 Schedules and Reporting

### 3.7.1 Schedule of Activities and Milestones

Proposed Central Texas 8-Hour Ozone Flex Program (2008-2013)			
TRIGGER	LEVEL	Implement one or more of the following MEASURE(S)	IMPLEMENTATION PERIOD
Signing of 8 - Hour O3 Flex MOA	Selected Primary Emission Reduction Measures	Continue EAC SIP-Level and Voluntary Emission Reduction Measures	Ongoing, 2008--2013
		Continuation of analysis of measures' effectiveness and emissions growth	Ongoing, 2008--2013
		Continuation of area-wide programs such as Commute Solutions, Clean Cities, Clean School Bus	
		Renewal of Idling MOA	Prior to 2008 ozone season
Signing of 8 - Hour O3 Flex MOA	Primary Emission Reduction Measure(s)	Apply for TERP funding (as available)	Within 24 months
		TERMS	Within 1 year or as scheduled
		Regional RideShare Program	Within 1 year
		Invite 5 or more additional cities to join CAC & become 8-hour O3 Flex Program signatories	Within 1 year
		Request TCEQ implement Watch/Warning ozone alert system	As appropriate
		Implement AirCheck Texas Local Initiative Projects with LIRAP funds	As appropriate
		Pave unpaved roads	As appropriate
		Other measures identified and mutually agreed upon	Within 1 year
January 1, 2010	Maintenance for Growth Offset Measures	Apply for TERP funding (as available)	By December 31, 2010
		Invite all nonparticipating cities in MSA with populations ≥ 10K to join CAC & become 8-hour O3 Flex Program signatories	By December 31, 2010
		TERMS	By December 31, 2010
		Other measures identified and mutually agreed upon	As appropriate
		Energy efficiency and conservation programs	By December 31, 2010
84 ppb Ozone Design Value	Tier I Contingency Measure(s)	Apply for TERP funding (as available)	Within 24 months
		TERMS	Within 24 months
		Invite additional cities to join idling MOU	Within 24 months
		VMEP: Upgrade Regional RideShare Program & Clean Air Partner Program	Within 24 Months of 84 ppb DV
		Other measures identified and mutually agreed upon	As appropriate
		Voluntary use of NOx emissions-reducing additive to area fleets, school district buses, and/or non-road vehicles	Within 24 Months of 84 ppb DV
85 ppb or Greater Ozone Design Value (Violation)	Tier II Contingency Measure(s)	Tier I Contingency Measures not already implemented	Within 24 months of violation
		At the request of the county and its principal city, expand Inspection & Maintenance Program to Bastrop, Caldwell and/or Hays counties.	Within 24 months of violation
		Request upgrade of I&M Program to include additional remote sensing & inclusion of diesel testing	Within 24 months of violation
		TERMS	Within 24 months of violation
		Other measures identified and mutually agreed upon	Within 24 months of violation

### **3.7.2 8-hour O<sub>3</sub> Flex Program Progress Report**

In accordance with EPA guidance, all signatories and participating agencies will review 8-hour O<sub>3</sub> Flex program activities twice yearly. The progress report will track and document, at a minimum, the latest information on implementation of control measures, ozone monitoring data, and the success of current measures. CAPCOG has primary responsibility for report generation and will provide appropriately detailed technical analysis.

CAPCOG, or its designee, will file reports with the TCEQ and EPA by June 30 and December 31 of each required reporting year; reporting periods will be from May 1 to October 31, and November 1 to April 30, to allow for adequate public notice and comment.

If, following submittal of the first progress report, the area's design value is maintained at 80 ppb or lower, or if the design value is not increasing, or is on the decline each year, the area will request EPA approval to submit reports annually.

## **Chapter Four: Memorandum of Agreement**

This Memorandum of Agreement (MOA) is between the local governments representing Bastrop, Caldwell, Hays, Travis and Williamson Counties and the cities of Austin, Bastrop, Elgin, Lockhart, Luling, Round Rock and San Marcos (herein after referred to as the local governments), the Texas Commission on Environmental Quality (TCEQ), and the United States Environmental Protection Agency (EPA). The purpose of the MOA is to reduce ground-level ozone concentrations in the Austin-Round Rock Metropolitan Statistical Area (MSA) through adoption of an 8-hour O<sub>3</sub> Flex program as described in this document.

The 8-hour O<sub>3</sub> Flex program emphasizes local flexibility in selecting and implementing emissions reduction measures. Given the varied emissions contributions and socioeconomic characteristics of the entities in the MSA, not all measures can or should be implemented by all entities. Rather, each entity will implement the measures that work for its specific jurisdiction and, when added together, work for the region as a whole. Note that certain measures (e.g., Regional Rideshare Program, Watch/Warning Ozone Alert System), would apply region-wide.

### **4.1 General Provisions**

The signatory parties commit to develop, implement and maintain this 8-hour O<sub>3</sub> Flex program according to applicable EPA guidelines and adhere to all terms and conditions stated in the guidelines.

### **4.2 EPA and TCEQ Responsibilities**

4.2.1 Regulations that apply to an area would still apply under the 8-hour O<sub>3</sub> Flex program. The 8-hour O<sub>3</sub> Flex program does not shield an area from being redesignated nonattainment for the 8-hour ozone standard if the area is in violation of that standard. Should a violation occur, EPA would consider factors in section 107(d)(3)(A) of the Act. These include “air quality data, planning and control considerations, or any other air quality-related considerations the Administrator deems appropriate,” including time to allow the implemented contingency measures to work. As long as the 8-hour O<sub>3</sub> Flex program and control measures in its Action Plan are being fully implemented, EPA would consider that circumstance in exercising its discretion in making a decision to redesignate the area to nonattainment.

4.2.2 The signatories' intent in entering into this MOA is to maintain the area's attainment designation and proactively implement and sustain air quality improvement strategies that are tailored to local conditions and are effective, practical and measurable in reducing ground-level ozone concentrations. This MOA should in no way be construed as a strategy to avoid or to defer a regulatory requirement.

4.2.3 EPA and TCEQ commit to informing the local governments of all available options and flexibility, to the extent allowed by the Federal Clean Air Act, in the event that the area, or any portion of the area, is monitoring exceedances or violations of the 8-hour ozone standard for the duration of this agreement.

4.2.4 EPA supports flexible approaches that account for the complex nature of ozone formation and has provided State Implementation Plan (SIP) credit for communities that adopt quantifiable measures for ozone reduction plans that may be required in the future. EPA will, consistent with the Federal Clean Air Act, allow the Austin-Round Rock MSA appropriate SIP credit for eligible strategies implemented under the terms of this Agreement.

4.2.5 If the regions design value reaches or exceeds 85 ppb, EPA and TCEQ commit to adopting into the SIP one or more of the Tier II Contingency Measures as selected by the local governments.

4.2.6 This MOA's terms do not abrogate any state or federal legal requirement. The TCEQ and the EPA enter this Agreement solely for the purpose of their responsibilities under Section 107(d)(3)(A) through (D) of the Federal Clean Air Act.

### **4.3 Local Government Responsibilities**

4.3.1 As specified by EPA guidelines, the 8-hour O<sub>3</sub> Flex program developed by the MSA contains sections describing the region's air quality; an action plan; existing control measures; contingency measures; coordination and public participation process; schedules and reporting; and an MOA with signature and date page. These sections and associated appendices further define the commitments and actions of the local governments and participating entities.



4.3.2 The local interests may continue to conduct photochemical modeling to the extent that it informs and allows the area to better target contingency measures. However, there is no EPA requirement for photochemical modeling in support of or as a condition of participation in the 8-hour O<sub>3</sub> Flex program.

4.3.3 The local governments will continue to develop and regularly update area emissions inventories through CAPCOG. Note that, after consultation with EPA, the base year 2002 will be used for emissions inventories and for future emissions projections

4.3.4 The MSA is an EAC area. Therefore, in order to participate in the 8-hour O<sub>3</sub> Flex program, the area agrees to continue its existing EAC requirements. Specifically, the MSA agrees to keep the "Maintenance for Growth" requirement in place through 2012 as agreed to in the area's Early Action Compact with TCEQ and EPA.

4.3.5 The local governments have detailed in an Action Plan the events that will trigger a requirement to implement one or more contingency measures and have specified when those measures will be implemented. The local governments commit to revise or update these contingency measures if state/tribal or federal laws change during the MOA period.

4.3.6 The local governments agree to implement one new, voluntary emissions reduction measure within one year of the signing of the MOA.

#### **4.4 Expected Memorandum of Agreement Duration**

The signature date of this MOA is the start date of the agreement's term. This agreement remains in effect until December 31, 2013.

#### **4.5 Conditions for Modification or Early Termination**

This MOA may be modified or terminated by mutual consent of all signatory parties.

4.5.1 Any signatory party may withdraw from the MOA if provisions of the agreement are not carried out by the other signatory parties. As a voluntary program, the area can choose to end its participation at any time.

4.5.2 Failure to abide by the terms of the MOA, should violation of the 8-hour standard occur, could lead to redesignation as nonattainment for the 8-hour standard.