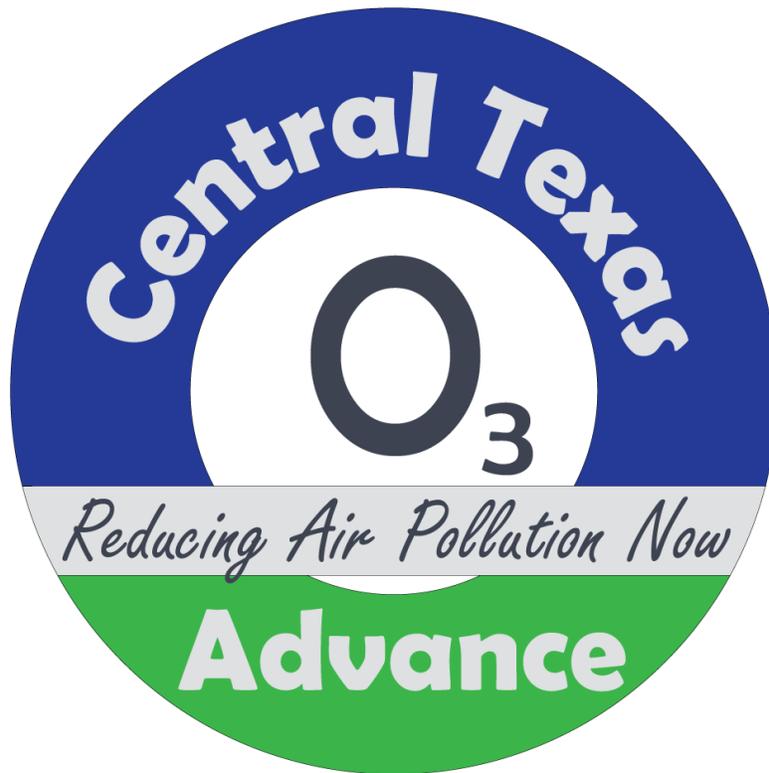


Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan

Adopted by the Central Texas Clean Air Coalition of the Capital Area Council of Governments

December 31, 2013



Executive Summary

Background

The Ozone Advance Program (OAP) Action Plan is the fourth voluntary, regional ozone reduction plan adopted by the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments (CAPCOG) for the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties. The OAP Action Plan builds on the work of previous plans – the One-Hour Ozone Flex Plan (2002), the Early Action Compact State Implementation Plan (2004), and the Eight-Hour Ozone Flex Plan (2008) – and is intended to keep the region in attainment of the current ozone standard of 75 parts per billion, reduce ozone levels enough to remain in attainment of anticipated future standards, and improve public health, particularly for vulnerable populations. The CAC consists of all five county governments in the Austin-Round Rock MSA and 13 city governments within the MSA. This plan also includes emission reduction commitments from 11 other governmental, non-profit, and business entities from the region.

Since the CAC began implementing voluntary ozone reduction plans in 2002, the Austin-Round Rock MSA has remained in attainment of federal ozone standards and experienced a larger decrease in ozone than any other Texas near-nonattainment area, while also experiencing some of the highest population growth in the country. This plan is designed to keep that momentum moving forward from 2014-2018.

In preparation for developing this plan, the CAC solicited extensive public input and conducted a thorough evaluation of technical data. Key findings of these efforts include the following:

- There is a high level of public awareness of air quality issues and broad support for existing ozone precursor emission reduction measures within the community.
- The region is poised to be in a position to meet a new ozone standard if it is set as high as 70 parts per billion by 2018, but would be challenged to meet one as low as 65 parts per billion.
- Reductions of nitrogen oxides NO_x emissions are much more important to reducing ozone levels than reductions of VOC.
- The vast majority of local NO_x emissions come from mobile on-road and non-road sources.

Action Plan

This Action Plan includes three categories of emission reduction measures: those intended for region-wide implementation; those implemented by the CAC member jurisdictions; and those implemented by other participating organizations.

Region-wide measures are those which, by definition, work best when implemented across jurisdictional boundaries at a regional level. They include, for example; the regional rideshare program; sharing technical/best practices information; and coordinating outreach efforts.

CAC members and other participating organizations have also made a total of **491 emission reduction commitments from 29 entities** such as: commute reduction programs; development policies; energy and resource efficiency measures; fleet and fuel efficiency measures; outreach, awareness, and education measures; regulation and enforcement measures; sustainable procurement and operations measures; and other measures specific to that organization. Each participating organization has selected measures that are appropriate for their own organization and community, and this plan reflects that

diversity. Their contributions are varied, reflecting the creativity and unique resources of the organizations.

Emission Reduction Commitments Included in the Action Plan

Emission Reduction Strategy	CAC Members	Other Entities	TOTAL
Commute Trip Reduction Measures	31	33	64
Development Measures	22	8	30
Energy and Resource Efficiency Measures	20	9	29
Fleet and Fuel Efficiency Measures	66	21	87
Outreach, Awareness, and Education Measures	59	34	93
Regulation and Enforcement Measures	24	0	24
Sustainable Procurement and Operation Measures	50	14	64
Transportation Emission Reduction Measures	63	37	100
TOTAL	335	156	491

Looking Forward

The OAP Action Plan will be in effect from January 1, 2014 - December 31, 2018. As it has done for previous plans, the CAC will submit annual reports by June 30 of each year of this plan reporting the implementation of measures in the previous year and providing updates on the status of air quality and air quality planning activities occurring in the region. One of the new focuses for these reports will be to begin quantifying these emission reduction measures to the extent practicable. New to the OAP Action Plan is the explicit decision to continually update this plan to account for new participants, new commitments, and new data. The plan will be a "living document," so that it can keep up with the most recent technical and planning information available. The CAC expects to submit updates to this plan annually no later than December 31st of each year to incorporate new commitments and other information. The CAC looks forward to continuing to work with the U.S. Environmental Protection Agency (EPA), the Texas Commission on Environmental Quality (TCEQ), and the local communities in the region to keep the Austin-Round Rock MSA in attainment of federal ozone standards.

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Chapter 1: Introduction

1.1: Action Plan Goals

This Ozone Advance Program Action Plan has been adopted by the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments (CAPCOG). The goals of this plan are to:

1. Stay in attainment of the 2008 eight-hour ozone National Ambient Air Quality Standards (NAAQS) of 75 parts per billion (ppb);
2. Continue reducing the region's 8-hour ozone design value to avoid being designated nonattainment for a new ozone NAAQS;
3. Put the region in the best possible position to bring the area into attainment of an ozone standard expeditiously if it does violate an ozone standard or gets designated nonattainment;
4. Reduce the exposure of vulnerable populations to air pollution when the region experiences high ozone levels, and
5. Minimize the costs to the region of any potential future nonattainment designation.

This plan describes the steps that participants plan to take to achieve these goals and to track performance over the period covered by the plan, January 1, 2014 – December 31, 2018.

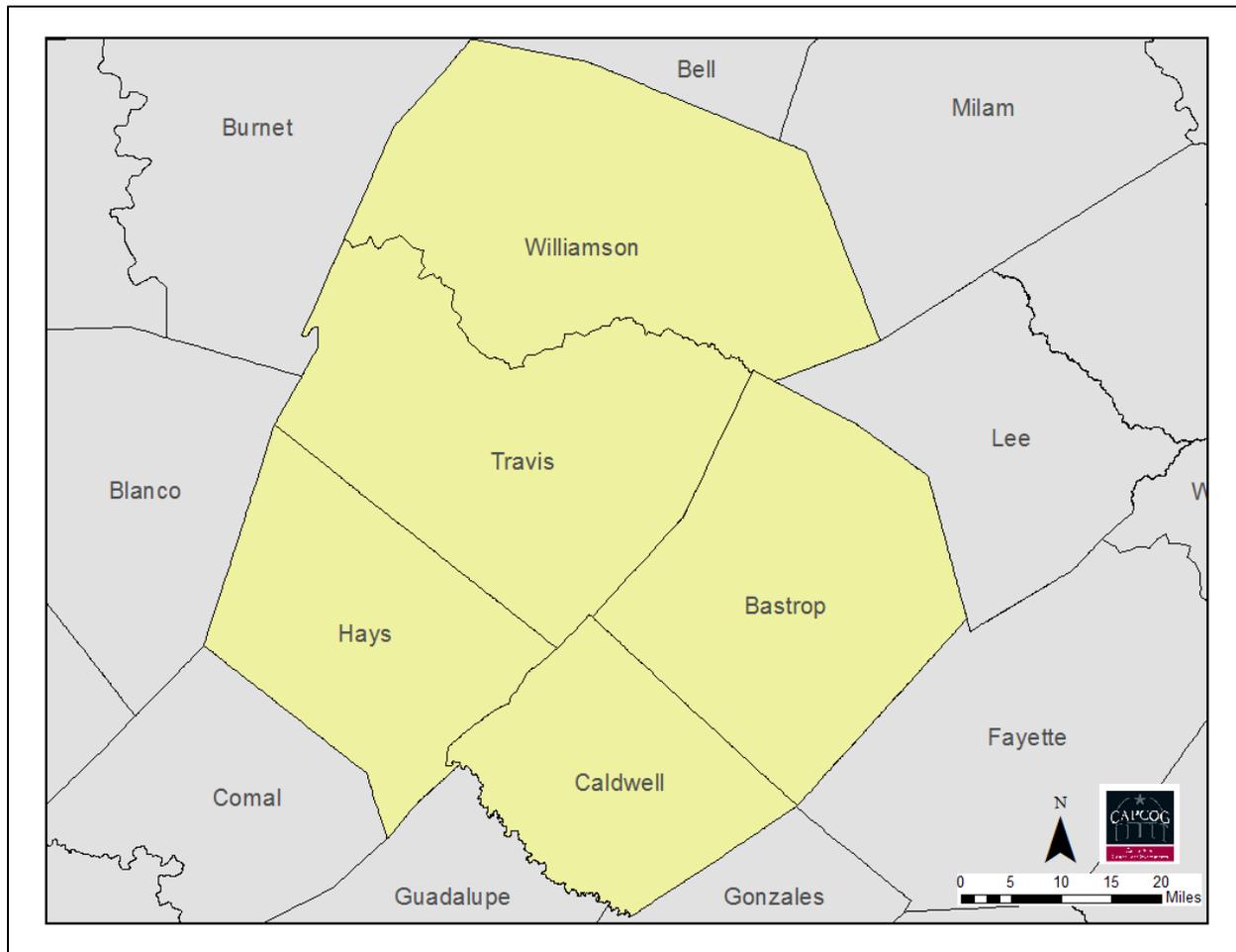
1.2: Geographic Boundaries

The geographic area covered by this plan includes Bastrop, Caldwell, Hays, Travis, and Williamson Counties in Texas, which make up the Austin-Round Rock Metropolitan Statistical Area (MSA).¹ If the U.S. Environmental Protection Agency (EPA) were to designate the area nonattainment for the ozone NAAQS, these counties would constitute the presumptive boundaries of the nonattainment area, based on the Federal Clean Air Act (CAA) and the most recent guidance from the EPA.²

¹ As defined by the U.S. Office of Management and Budget in its February, 2013 bulletin: Executive Office of the President, Office of Management and Budget. *OMB Bulletin No. 13-01. Subject: Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on uses of the Delineations of These Areas.* <http://www.whitehouse.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf>.

² Memorandum from Robert J. Meyers, Principal Deputy Assistant Administrator for the U.S. EPA's Office of Air and Radiation. *Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards.* December 4, 2008. http://www.epa.gov/glo/designations/2008standards/documents/Area_Designations_for_the_2008_Revised_Ozone_NAAQS.pdf

Figure 1-1: Austin-Round Rock MSA Boundaries



1.3: The Central Texas Clean Air Coalition of the Capital Area of Governments

The CAC is a group of county and municipal governments in the Austin-Round Rock MSA formed for the following purposes:

- To develop, adopt and implement a clean air plan to achieve and maintain compliance with federal ground-level ozone standards for the counties of Bastrop, Caldwell, Hays, Travis, and Williamson Counties;
- To establish and monitor a regional effort toward the improvement of air quality;
- To develop policies and strategies that will provide guidance for each of the CAC member jurisdictions' independent governing bodies about actions that will achieve clean air in Central Texas;
- To work cooperatively to achieve clean air standards that will protect public health and yet allow local governments the flexibility to select measures best-suited to each community's needs and resources; and
- To provide CAPCOG executive committee with recommendations for administering funding provided by local sources for the purpose of supporting the regional air quality plan or program implementation, assessment, and improvement activities.

The CAC meets at least once a quarter to review updates on implementation of ozone reduction measures, regulatory and legislative developments, and scientific research findings on local technical projects.

The CAC has been in existence since 2002, when it adopted its first voluntary, regional ozone reduction plan under EPA’s One-Hour Ozone Flex Program. It approved the region’s Clean Air Action Plan that formed the basis for the region’s Early Action Compact (EAC) State Implementation Plan (SIP) revision in 2004. After the EAC ended in 2007, the CAC adopted a new regional air quality plan under the EPA’s Eight-Hour Ozone Flex Program (8-O3 Flex).

There are two categories of members of the CAC: general members and supporting members. General members, who have voting rights, are elected officials appointed by local governments or independent school districts within the Austin-Round Rock MSA who have ratified the regional air quality plan and committed to implementing selected emission reduction measures. Supporting members do not have voting rights, but do act within their individual jurisdictions or agencies to support the purpose of the CAC and report their actions to the CAC or CAPCOG upon request. The members of the CAC as of the adoption of this plan are shown in the table below.

Table 1-1: Clean Air Coalition Members as of December 11, 2013

County General Members	City General Members	Supporting Members
Bastrop County	City of Austin	City of Sunset Valley
Caldwell County	City of Bastrop	City of Taylor
Hays County	City of Cedar Park	
Travis County	City of Elgin	
Williamson County	City of Georgetown	
	City of Hutto	
	City of Lockhart	
	City of Luling	
	City of Round Rock	
	City of San Marcos	

From time to time, the CAC admits new jurisdictions as members. Other local governments within the MSA, including both city governments and independent school districts, may request to join the CAC at any time. Under the CAC bylaws, in order for a jurisdiction to be eligible for general membership in the CAC, it must ratify the region’s air quality plan and commit to implement emission reduction measures.

The CAC has an advisory committee (the Clean Air Coalition Advisory Committee – or CACAC), which consists of staff members from each jurisdiction, as well as staff members from other entities participating in regional air quality planning and other interested parties, including the Capital Area Council of Governments (CAPCOG), the Capital Area Metropolitan Planning Organization (CAMPO), the Capital Metropolitan Transportation Authority (CapMetro), the Texas Department of Transportation (TxDOT), the Lower Colorado River Authority (LCRA), Austin Energy, Green Mountain Energy, the CLEAN AIR Force, the Sierra Club, HOLT CAT, the Texas Commission on Environmental Quality (TCEQ), and the

U.S. Environmental Protection Agency (EPA). The CACAC meets once a month and provides policy advice, technical advice, and planning support to the CAC.

1.4: Other Participants in this Action Plan

Beyond the commitments that CAC members are making for their own jurisdictions, there are a number of other entities that have made commitments that are being incorporated into this plan. This includes commitments from the following organizations and agencies:

1. CAPCOG,
2. CAMPO,
3. CapMetro,
4. CTRMA,
5. TxDOT Austin District,
6. TxDOT Headquarters,
7. LCRA,
8. The CLEAN AIR Force of Central Texas,
9. Texas Lehigh Cement Company, and
10. The Texas Nursery and Landscaping Association.

The roles for these participants will be described later in this plan.

Chapter 2: Background

2.1: Status of Air Quality in the Austin-Round Rock MSA

2.1.1: Regulatory Monitors

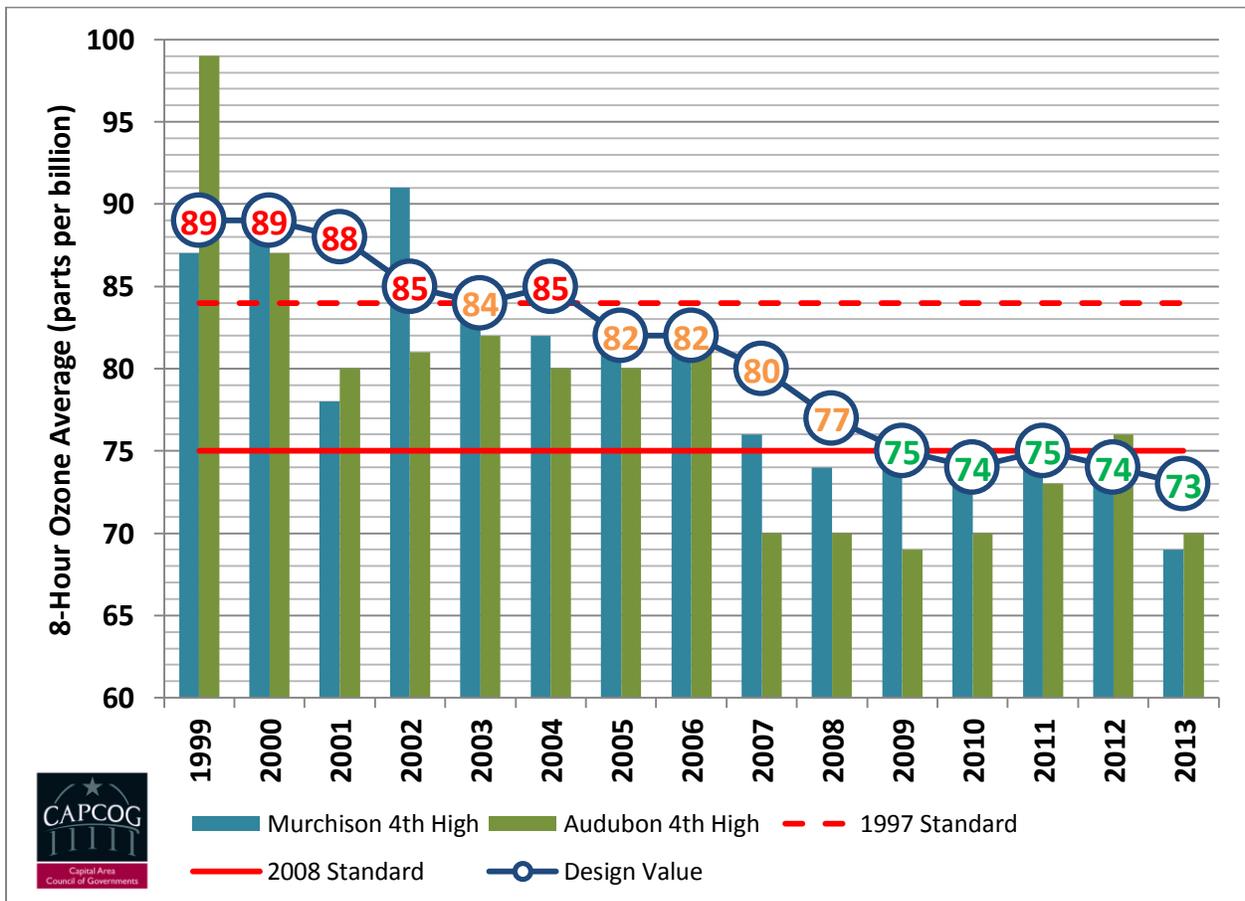
The Austin-Round Rock MSA’s certified 2012 ozone design value (DV) was 74 parts per billion, based on ambient ozone concentrations measured at the TCEQ’s two regulatory ozone monitors for the region from 2010-2012. Based on preliminary data reported on TCEQ’s website, the 4th highest daily eight-hour ozone average in 2013 for CAMS 3 (also known as Murchison) was 69 ppb, while the 4th highest average for CAMS 38 (also known as Audubon) was 70 ppb. If these values are certified by TCEQ, the 2013 DV for the region would be 73 ppb based on CAMS 38’s three-year average. The table below shows the fourth highest daily eight-hour ozone concentration for 2010, 2011, and 2012, and the DV for each of these monitors are shown in the table below.

Table 2-1: 2012 4th Highest Daily Maximum Eight-Hour Ozone Averages 2010-2013 and 2012 Design Value

Station	EPA Number	2010 4th High	2011 4th High	2012 4th High	2012 Design Value	2013 4th High	2013 Design Value
Murchison CAMS 3	484530014	74 ppb	75 ppb	74 ppb	74 ppb	69 ppb	72 ppb
Audubon CAMS 38	484530020	70 ppb	73 ppb	76 ppb	73 ppb	70 ppb	73 ppb

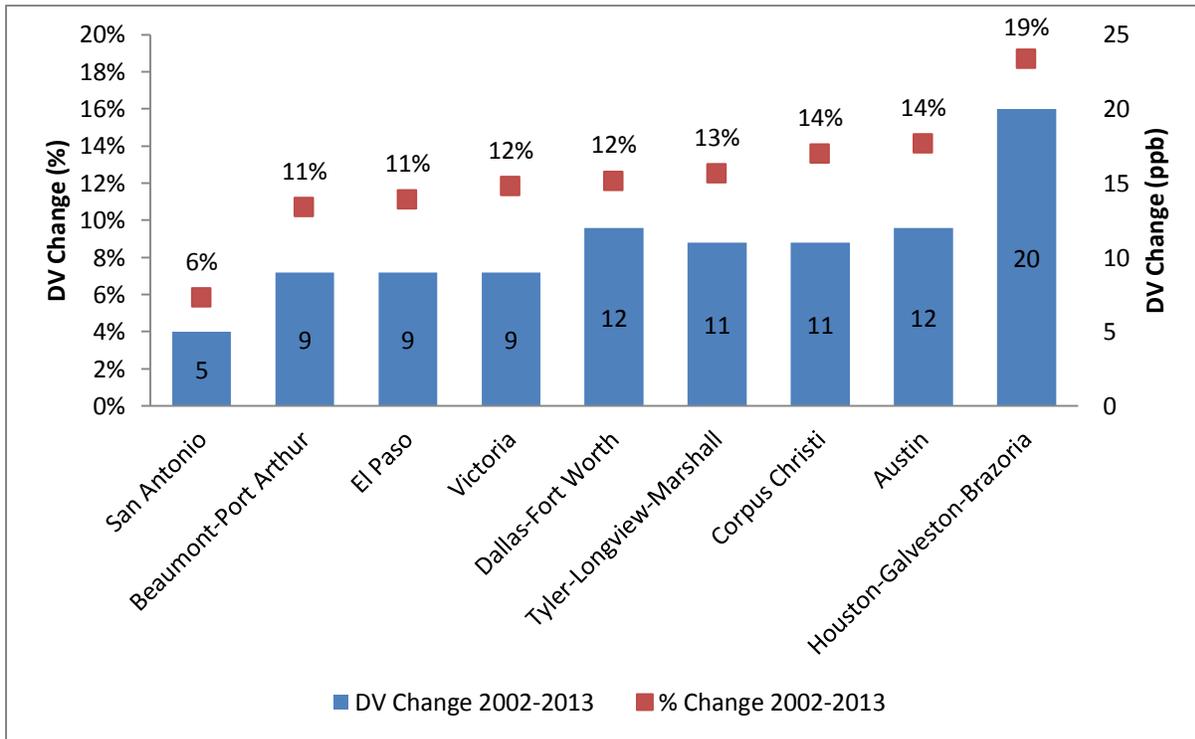
The following chart shows the trend in ozone levels at the region’s regulatory monitors from 1999 to 2013 in comparison to the 1997 and 2008 eight-hour ozone averages.

Figure 2-1: Austin-Round Rock MSA Ozone Design Values and 4th Highest Daily Eight-Hour Ozone Averages, 1999-2013



Since the first voluntary ozone plan was adopted in 2002, the Austin-Round Rock MSA has experienced a larger decrease in ozone than any of the other near-nonattainment areas (areas with a design value of 85% of the NAAQS or higher that are not currently designated nonattainment), and even experienced reductions in ozone levels that were comparable to those achieved in the Dallas-Fort Worth area, a region about 5 times larger than the Austin-Round Rock MSA.

Figure 2-2: Changes in 8-Hour Ozone Design Values 2002-2013 in Texas Nonattainment and Near-Nonattainment Areas



2.1.2: Non-Regulatory Monitors

In addition to the two regulatory monitors operated by TCEQ, the Austin-Round Rock MSA also has five permanent, continuous research ozone monitors that are operated by CAPCOG during ozone season each year. These monitoring stations do not meet EPA’s requirements for being used in formal regulatory decisions such as ozone designations, but they do provide valuable data on regional ozone levels. The table below shows each site’s fourth highest daily eight-hour ozone average for 2011 – 2013 and the “design value” that would be calculated for that site if it were a regulatory monitor (technically, a “design value” is a regulatory term, and since these are not regulatory monitors, these do not meet the definition of a design value).

Table 2-2: 4th Highest Daily Maximum Eight-Hour Ozone Averages and Design Values at Non-Regulatory Monitors

Station	EPA Number	2011 4th High	2012 4th High	2013 4th High	2013 “Design Value”
Dripping Springs CAMS 0614	482090614	77 ppb	73 ppb	67 ppb	72 ppb
McKinney Roughs CAMS 0684	480210684	72 ppb	71 ppb	64 ppb	69 ppb
Lake Georgetown CAMS 0690	484910690	73 ppb	73 ppb	75 ppb	73 ppb
San Marcos CAMS 675/1675³	482090675 482091675	78 ppb	72 ppb	70 ppb	73 ppb
Hutto CAMS 6602	484916602	75 ppb	69 ppb	69 ppb	71 ppb

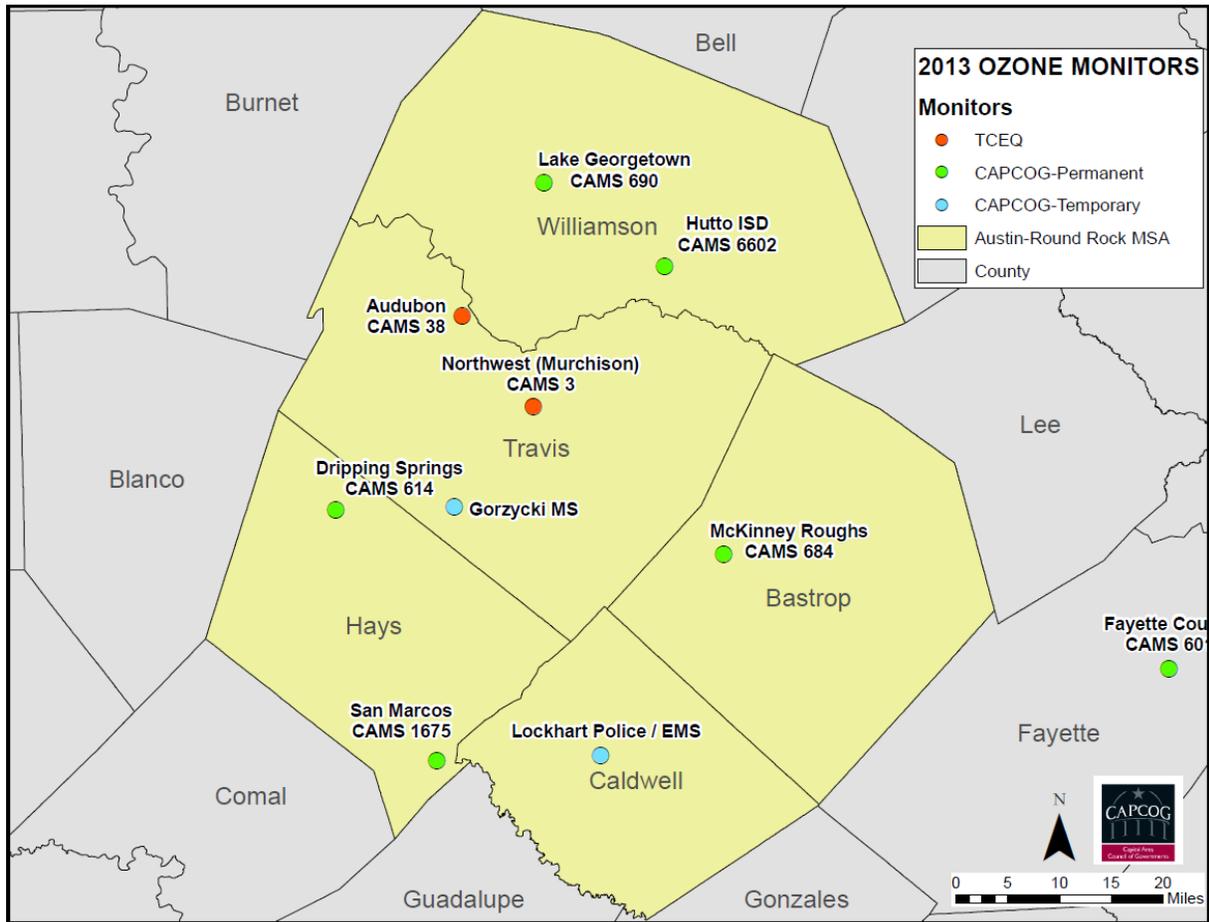
In addition to these sites, in 2012 and 2013, CAPCOG has also operated temporary monitoring stations in the region that did not report data to TCEQ’s website. In 2012, CAPCOG conducted temporary monitoring in Liberty Hill and Elroy, and in 2013, CAPCOG conducted temporary monitoring in Lockhart and Southwest Austin at Gorzycki Middle School. Data from those monitoring projects are available upon request from CAPCOG.

2.1.3: Locations of Regional Ozone Monitors

The map below shows the locations of all of the ozone monitors that were in operation in the region in 2013.

³ Note that in September 2011, CAPCOG relocated CAMS 675 from one part of San Marcos to another, and the site was redesignated as CAMS 1675. The fourth highest eight-hour average listed for this site for 2011 (78 ppb) represents the consolidated fourth highest average between the two sites. The actual 4th highest average measured at CAMS 675 for 2011 was 77 ppb, and the actual 4th highest average measured at CAMS 1675 for 2011 was 66 ppb.

Figure 2-3: Regional Ozone Monitors in Operation in 2013



2.2: Ozone Formation in Central Texas

One of the areas that CAPCOG provides support to the CAC is the development and analysis of air quality data on ozone formation and its sources. These research activities include developing ozone conceptual models, photochemical modeling, and emissions inventory development and analysis.

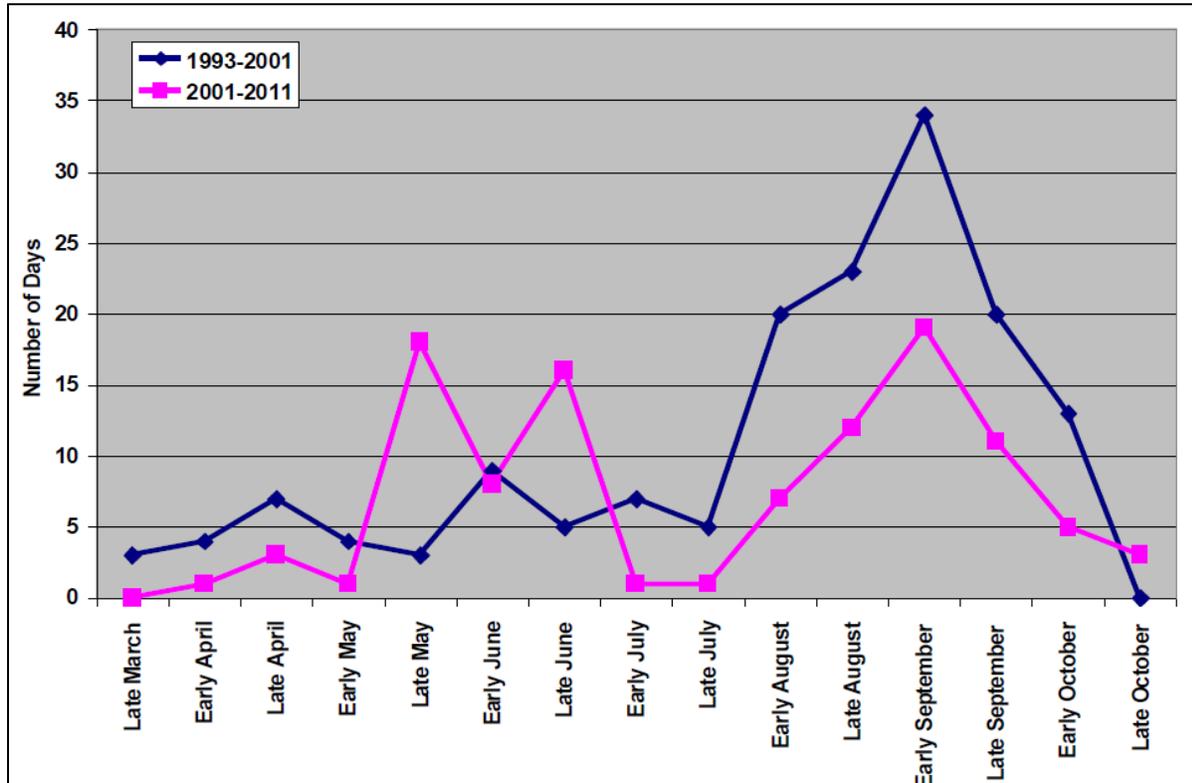
2.2.1: 2012 Ozone Conceptual Model

The most recent ozone conceptual model was prepared by the University of Texas at Austin (UT-Austin) for CAPCOG in 2012, using monitoring data from 2006-2011.⁴

⁴ http://www.capcog.org/documents/airquality/reports/2013/Task_1-Austin_Area_Conceptual_Model_2012.pdf

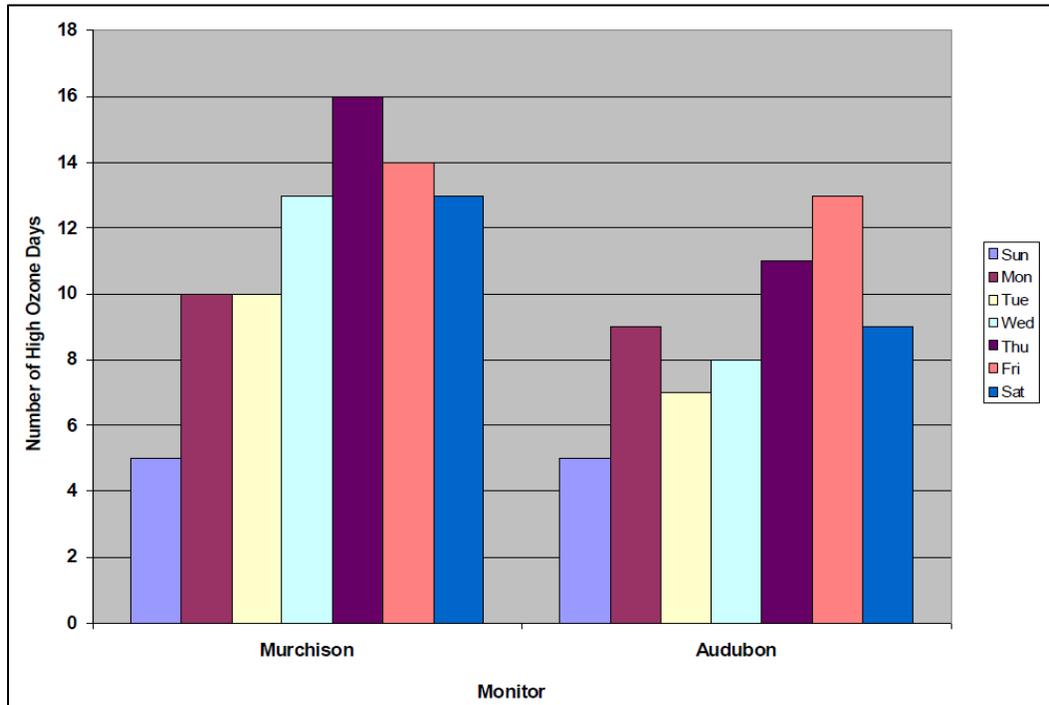
The chart below shows the distribution of high ozone days by month. It shows that high ozone levels tend to occur primarily from late May through late June, and from late August through late September. There are very few high-ozone days in July and early August. During this time period, local meteorological conditions are influenced primarily from a maritime air flow, which tends to have stronger winds and higher humidity.

Figure 2-4: Frequency of High Ozone by Month, 1993-2011



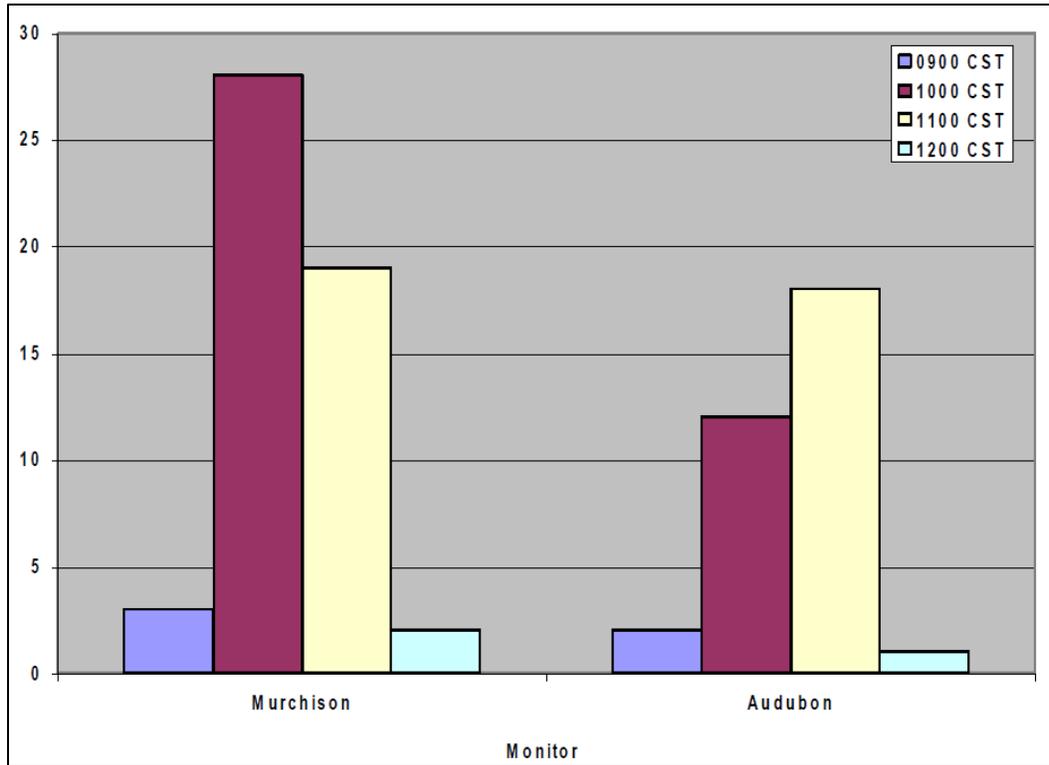
The conceptual model also includes an analysis of the frequency of occurrence of high-ozone days by day of the week. Interestingly, while Sunday is clearly the day with the lowest number of high-ozone days, it appears that it is about as likely to see high ozone on a Saturday as it would be to see it on any weekday.

Figure 2-5: Frequency of High Ozone by Day of Week



The conceptual model also includes an analysis of the distribution of the beginning hour of high eight-hour ozone averages. The figure below shows the distributions for CAMS 3 and CAMS 38. As the figure shows, peak eight-hour ozone typically will be measured from 10 am – 6 pm or 11 am – 7 pm. Due to its proximity to the urban core, CAMS 3 typically has high ozone measurements earlier in the day than CAMS 38.

Figure 2-6: Frequency of High Ozone by Start Hour of 8-Hour Ozone Average



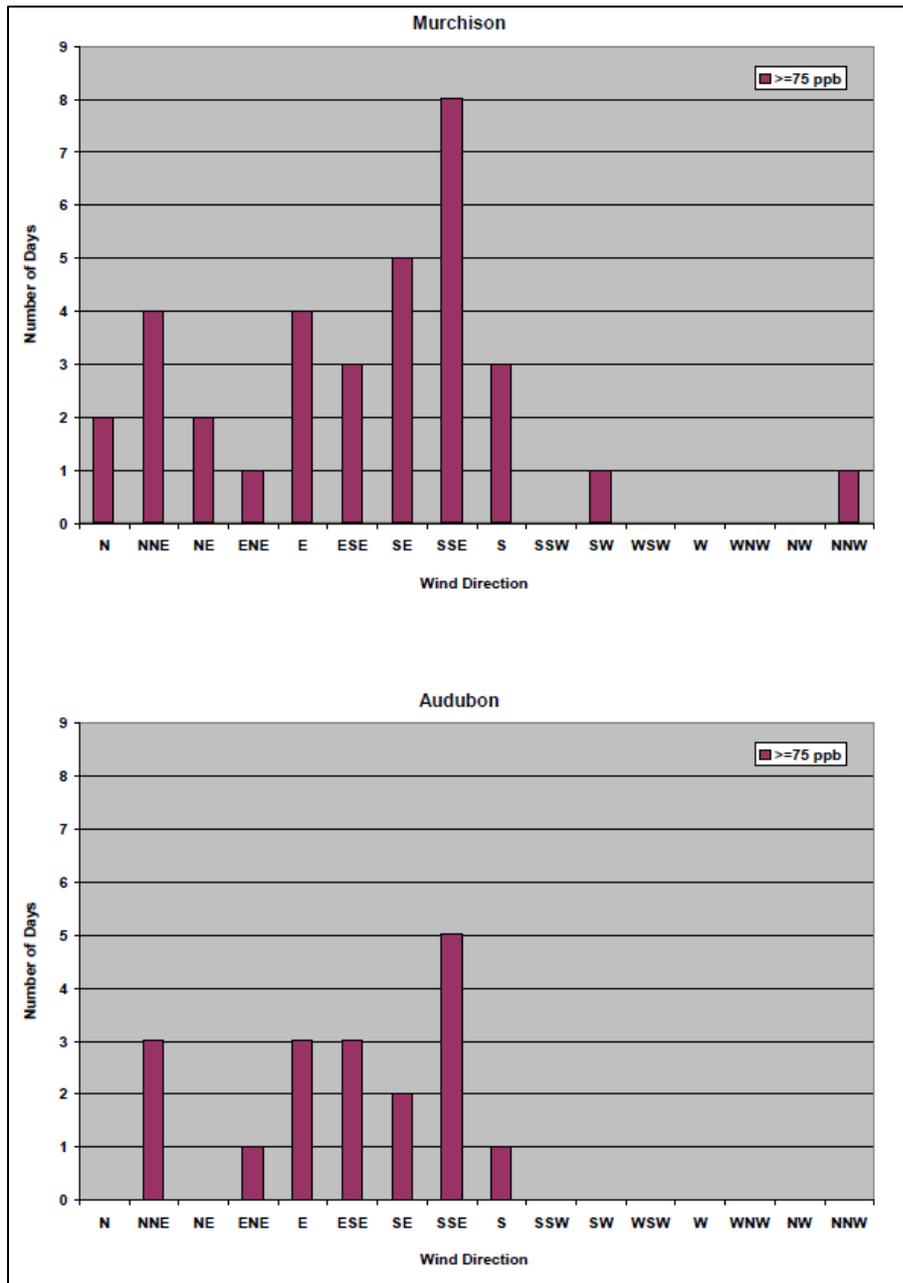
The conceptual model also included a detailed analysis of the meteorological conditions under which high ozone typically occurs. The table below shows the average and 95th percentile values for peak ambient temperature, average wind speed, and relative humidity on days with high eight-hour ozone.

Table 2-3: Key Meteorological Factors for Ozone Formation in the Austin-Round Rock MSA

Condition	Average	95th Percentile
Peak Ambient Temperature (°F)	92.6	81.4
Average. Wind Speed (miles per hour)	5.0	6.8
Relative Humidity	44.4%	59.4%

Finally, the conceptual model also provided information about wind direction on high ozone days. The most common wind direction for high ozone days is south-southeast, although the wind direction generally ranges from north clockwise to south, with almost no high ozone when winds come out of the west.

Figure 2-7: Resultant Wind Direction for High Ozone Days, 2006-2011



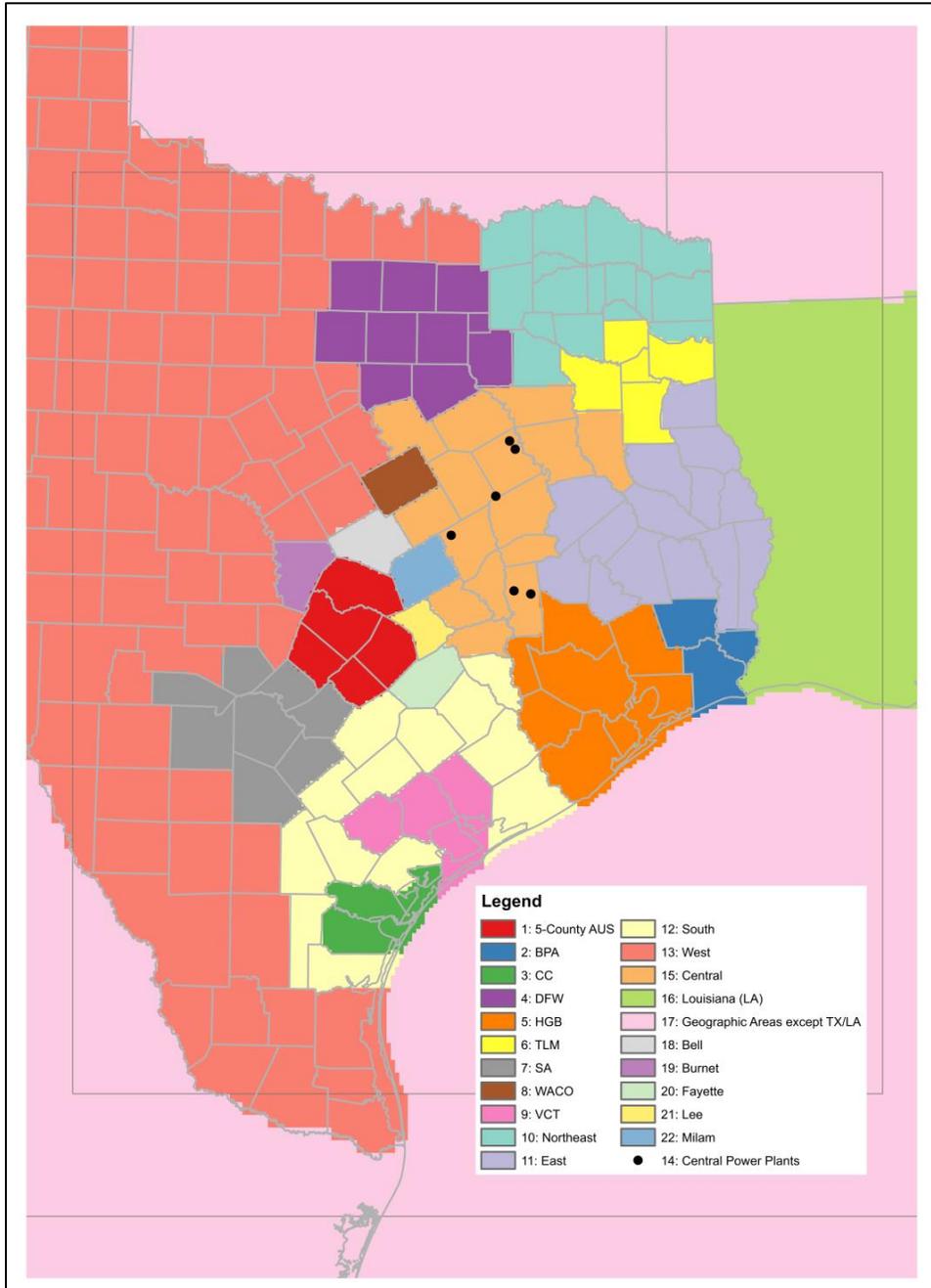
2.2.2: Photochemical Analysis of Source Region Contribution to 8-Hour Ozone Levels

CAPCOG, through UT-Austin, obtained an analysis of the contributions of various source regions to 8-hour ozone averages at CAMS 3, CAMS 38, and across Travis County, where both of the regulatory monitors are located. CAPCOG and UT divided the modeling domain into a number of different regions to analyze their impacts on modeled ozone levels on days when eight-hour ozone levels measured over 75 ppb.⁵ This analysis helps demonstrate the extent to which reducing emissions in the Austin-Round

⁵ http://www.capcog.org/documents/airquality/reports/2013/Task_8.3-APCA_Analysis_Final.pdf

Rock MSA and other areas can produce reductions in ambient ozone concentrations. The following figure shows the source regions used for the analysis.

Figure 2-8: Source Regions Modeled in APCA Photochemical Modeling Analysis of June 2006 Ozone Episode on Austin Area



The table below shows the average modeled contribution of each source region to the peak 8-hour ozone levels modeled at CAMS 3, CAMS 38, and across all Travis County grid cells on episode days with measured 8-hour ozone averages over 75 ppb.

Table 2-4: Modeled Impacts of Anthropogenic Emissions by Source Area on Local Ozone Levels

Area	CAMS 3	CAMS 38	Travis County
Austin-Round Rock MSA	16.78 (20.5%)	17.38 (21.3%)	13.17 (16.9%)
Bell County	0.44 (0.5%)	0.24 (0.3%)	0.39 (0.5%)
Burnet County	0.69 (0.8%)	1.08 (1.3%)	0.12 (0.2%)
Fayette County	0.35 (0.4%)	0.33 (0.4%)	0.51 (0.7%)
Lee County	0.05 (0.1%)	0.17 (0.2%)	0.65 (0.8%)
Milam County	0.46 (0.6%)	0.84 (1.0%)	0.99 (1.3%)
Dallas-Fort Worth	0.71 (0.9%)	0.87 (1.1%)	0.75 (1.0%)
Houston-Galveston-Brazoria	3.69 (4.5%)	3.24 (4.0%)	3.74 (4.8%)
Beaumont-Port Arthur	0.44 (0.5%)	0.39 (0.5%)	0.45 (0.6%)
Corpus Christi	0.71 (0.9%)	0.66 (0.8%)	0.70 (0.9%)
San Antonio	1.65 (2.0%)	1.77 (2.2%)	1.83 (2.4%)
Tyler-Longview-Marshall	1.28 (1.6%)	1.34 (1.6%)	1.26 (1.6%)
Victoria	0.46 (0.6%)	0.49 (0.6%)	0.51 (0.7%)
Waco	0.09 (0.1%)	0.19 (0.2%)	0.09 (0.1%)
Rural East Texas	7.83 (9.6%)	7.91 (9.7%)	8.09 (10.4%)
West Texas	2.34 (2.9%)	2.10 (2.6%)	2.41 (3.1%)
Louisiana	4.34 (5.3%)	4.00 (4.9%)	4.24 (5.4%)
Geographic Area Outside Texas and Louisiana	15.45 (18.9%)	15.14 (18.6%)	15.43 (19.8%)
Modeling Boundary Conditions	22.43 (27.4%)	22.68 (27.8%)	22.52 (28.9%)

These modeling results show that the Austin-Round Rock MSA was responsible for about 17-21% of the peak 8-hour ozone concentrations experienced locally during the June 2006 episode, with the remaining ozone transported in from outside of the region.

2.2.3: June 2006 Photochemical Modeling Sensitivity Runs

One of the other modeling projects conducted by the University of Texas at Austin on the June 2006 Ozone Episode was a series of sensitivity runs to test the impacts of local emission reductions on ozone levels.⁶ The runs included:

- A reduction of emissions from the Sandow plant in Milam County to post-2006 levels to reflect the large emission reductions that occurred after significant parts of the facility closed at the end of 2006,
- A 25% reduction in anthropogenic NO_x emissions from the Austin-Round Rock MSA,
- A 50% reduction in anthropogenic NO_x emissions from the Austin-Round Rock MSA,
- A 25% reduction in anthropogenic VOC emissions from the Austin-Round Rock MSA, and
- A 50% reduction in anthropogenic VOC emissions from the Austin-Round Rock MSA.

Of most significance for this plan are the four modeling runs that showed the impact of across-the-board cuts in local NO_x and VOC emissions. The table below shows the average impact of the reductions on maximum 8-hour ozone levels at CAMS 3, CAMS 38, and across all Travis County grid cells on days with 8-hour ozone over 75 ppb.

Table 2-5: Average Modeled Impact of Across-the-Board Local Reductions in NO_x and VOC on Peak 8-Hour Ozone > 75 ppb

Scenario	Change in Emissions	CAMS 3	CAMS 38	Travis County
25% NO_x Reduction	-33.5 tpd NO _x	-2.60	-2.10	-1.81
50% NO_x Reduction	-67.0 tpd NO _x	-5.39	-4.38	-3.79
25% VOC Reduction	-75.8 tpd VOC	-0.08	-0.06	-0.04
50% VOC Reduction	-151.6 tpd VOC	-0.16	-0.13	-0.08

These modeling results can be used to show approximately how much local NO_x and VOC emission reductions would be required to yield a 1 ppb reduction in ozone. As the table below shows, local ozone levels respond much more to reductions in NO_x than reductions in VOC. In fact, the amount of VOC reductions that would be required to lower ozone levels by 1 ppb is several times larger than the entire inventory of anthropogenic VOC emissions in the MSA.

Table 2-6: Average Emission Reductions Required to Reduce Max 8-Hour Ozone by 1 ppb (tpd)

Scenario	CAMS 3	CAMS 38	Travis County
25% NO_x Reduction	12.88	15.95	18.51
50% NO_x Reduction	12.43	15.30	17.68
25% VOC Reduction	947.50	1,263.33	1,895.00
50% VOC Reduction	947.50	1,166.15	1,895.00

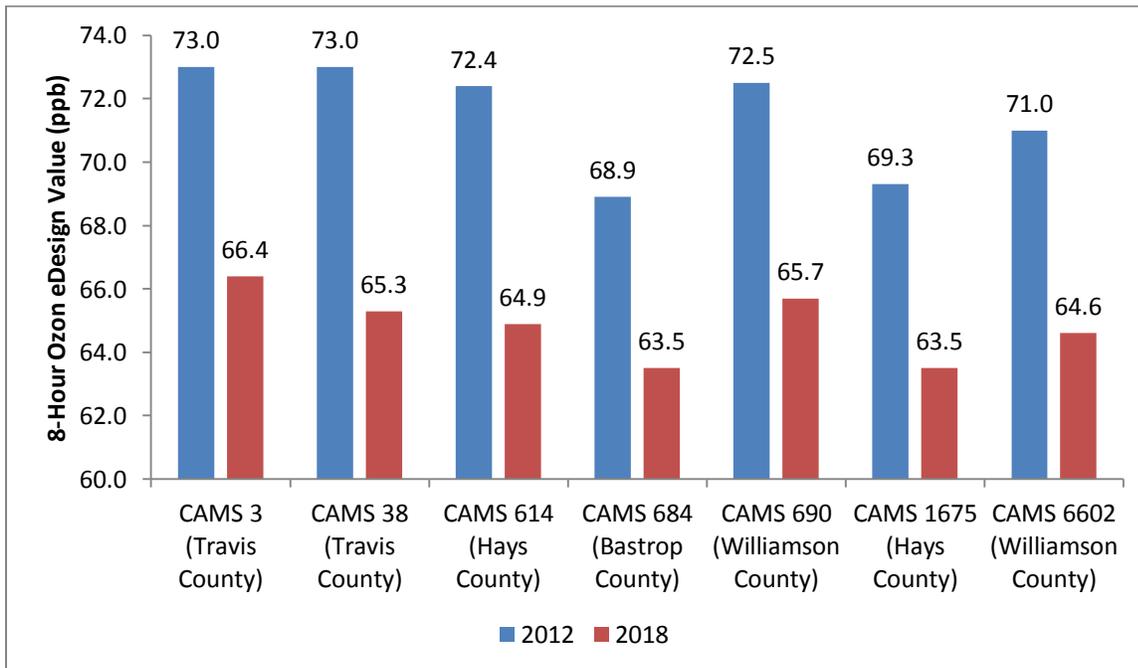
The ratio of these effects can help indicate what the relative impact of NO_x and VOC per ton is – NO_x emission reductions have 74-107 times the impact per ton of VOC emission reductions. The CAC used these modeling results to focus its planning efforts for this Action Plan on NO_x reductions.

⁶ http://www.capcog.org/documents/airquality/reports/2013/Task_8.3-Precursor_Response_Runs_Final.pdf

2.2.4: Photochemical Modeling of 2012 & 2018 Emissions Scenarios and Eagle Ford Shale

In 2013, CAPCOG worked with the Alamo Area Council of Governments (AACOG) in order to model the June 2006 photochemical modeling episode updated with emissions representative of 2012 and 2018 ozone seasons.⁷ This included a comparison of modeling results with and without the inclusion of AACOG’s estimate for emissions from oil and gas production in the Eagle Ford Shale play that stretches from the Texas-Mexico border near Laredo south of the Austin-Round Rock MSA through Fayette, Lee, and Milam Counties to the east of the MSA. One of the primary goals of this modeling was to estimate the ozone levels in years that might be important for designations for a new ozone standard. The figure below shows the ozone levels for the two years modeled; as it shows, there is a significant decrease in ozone over this period of time – ranging from an average of 0.9 ppb per year to 1.3 ppb per year. Since emission reductions from fleet turnover are non-linear, however, with steeper reductions between 2012 and 2015, and fewer marginal reductions between 2015 and 2018, the actual ozone levels in the intermediate years of this analysis are likely to be less than an interpolated DV would indicate.

Figure 2-9: Modeled Design Values in 2012 and 2018

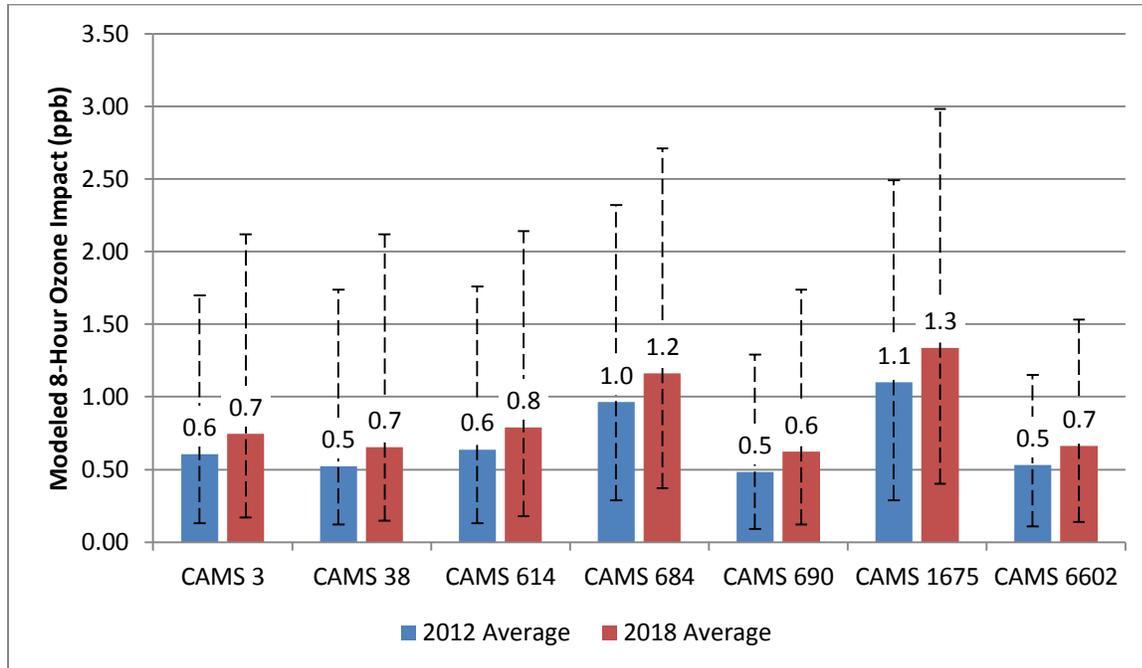


The following figure shows the distribution of modeled impacts of the oil and gas production equipment involved in the Eagle Ford Shale play at all of the seven permanent ozone monitors operated in the region. These results reflect the average difference between a 2012 baseline model run and a 2012 run with the Eagle Ford Shale emissions for days with 8-hour ozone over 75 ppb. The chart also shows the range of impacts for the monitor for all days over 75 ppb. As the graph displays, the emissions from this

⁷ Alamo Area Council of Governments. *Future Year Photochemical Modeling for the Capital Area Council of Governments*. November 30, 2013.

activity, which are new to the region just over the past 5 years, can have a significant impact on local ozone levels on high ozone days.

Figure 2-10: Modeled Impacts of Eagle Ford Shale Oil and Gas Emissions on Peak 8-Hour Ozone Averages



This increase in the background ozone levels will pose a challenge for the region in continuing to achieve progress in reducing ozone levels. The CAC will continue to monitor these and other upwind sources and source regions for potential impacts on local ozone levels. If nothing else, these results demonstrate the continued need for local emission reductions to offset the growth of this source of emissions.

2.2.5: Emissions Inventory Summary

The following tables show the typical ozone season weekday anthropogenic emissions of NO_x and VOC for the Austin-Round Rock MSA for 2012, the most recent year for which CAPCOG has compiled a complete inventory.⁸ The first table shows the emissions by source category, and the second table shows the emissions by county. A more detailed explanation of the basis for these estimates is provided in Appendix E.

⁸ These estimates reflect the updated emissions inventories used for the modeling performed by AACOG. For a more complete explanation of this inventory, contact CAPCOG’s Air Quality Program.

Table 2-7: Typical Ozone Season Weekday NO_x and VOC Emissions for the Austin-Round Rock MSA by Source Type, 2012

Source Type	NO _x	VOC
On-Road	55.41	28.55
Non-Road	20.52	14.36
Point	18.04	2.17
Area	9.85	81.43
Total	103.82	126.50

Table 2-8: Typical Ozone Season Weekday NO_x and VOC Emissions for the Austin-Round Rock MSA by County, 2012

County	NO _x	VOC
Bastrop	10.15	6.70
Caldwell	8.11	4.51
Hays	16.07	11.99
Travis	50.77	77.63
Williamson	18.72	25.68
Total	103.82	126.50

In addition to these anthropogenic emissions, there are also approximately 13.48 tpd of biogenic NO_x emissions and 298.28 tpd of biogenic NO_x emissions for a typical ozone season weekday.

For reference, there are also a number of large point sources of NO_x emissions in adjacent counties. Changes in emissions at these plants may, at times, have a significant impact on local ozone levels. These include the sources listed below, along with their NO_x and VOC emissions reported to TCEQ for 2011:

Table 2-9: Major Point Sources of NO_x Emissions in Adjacent Counties, 2011

County	Point Source Name	NO _x (tpy, 2011)	VOC (tpy, 2011)
Comal	TXI Operations Hunter Plant	744.4978	49.3657
Comal	Cemex Balcones Plant	2,478.9767	20.2978
Comal	Chemical Lime	549.17	4.7244
Fayette	Fayette Power Project	6,651.25	123.1506
Fayette	Giddings Plant	370.58	86.093
Fayette	La Grange Plant	178.086	17.937
Guadalupe	Structural Metals Steel Mill	206.6613	52.0959
Guadalupe	Guadalupe Generating Station	270.4259	3.9779
Guadalupe	Rio Nogales Power Plant	271.97	3.005
Llano	TC Ferguson Power Plant	213.424	21.5402
Milam	Sandow 4	1,296.6652	80.1882
Milam	Sandow 5	1,286.4559	0.6483

There are some limited data available on the impacts of some of these facilities on local ozone levels – particularly, the Fayette Power Project and the Sandow Plant. These emissions data are presented because they help provide a more complete picture of regional emissions and ozone transport.

2.3: Action Plan Development

The CAC began planning for the development of this plan in May 2012 shortly after EPA released its guidance for the Ozone Advance Program. The CAC and the CACAC undertook a significant regional effort to: (a) generate emissions reduction ideas, (b) solicit input from the public on potential emission reduction measures, and (c) compile the results into useful information for policy-makers.

EPA's Ozone Advance guidance asks participants in the program to involve the public and stakeholders in the selection of emission reduction measures and the development of the any Action Plan. In November 2012, members of the CACAC created a strategy for obtaining stakeholder and public input on the development of the new regional air quality plan. Key components of that strategy included outreach activities, online participation, surveys, presentations, and stakeholder meetings.

2.3.1: Outreach Activities

In order to make sure that everyone who wanted an opportunity to provide input had the chance to weigh in, the CAC and CACAC conducted a variety of outreach activities to help spread the word throughout the region about the new Ozone Advance planning effort. Members of the CACAC, comprised of CAPCOG, CAMPO, CAF, City and County staff, and other professionals, assisted in conducting outreach. CACAC representatives distributed marketing and educational materials to the public while making a physical presence at meetings, community fairs, and neighborhood events. This approach was very effective and served as an important avenue toward gaining public input.

2.3.2: Presentations and Stakeholder Meetings

Each individual CAC member jurisdiction was provided a presentation on the Ozone Advance Program at City Council or County Court meetings. This step was important to solicit feedback from the elected officials on the proposed measures and to answer any questions they had about the OAP. The Ozone Advance Program information was also presented to members of stakeholder organizations and at individual stakeholder meetings which were held to solicit input.

2.3.3: Community Survey

From February to August 2013, participants across the Central Texas region weighed in on the Ozone Advance survey, offering input on potential strategies to keep the region in step with federal ozone standards. The CACAC Ozone Advance Survey received a total of 551 completed responses that have helped shape this Ozone Advance Plan. Key findings from the survey included:

- Over 80% of the respondents felt they had a medium to high level of awareness of air quality issues in our region.
- The survey revealed over 80% of the respondents supported the existing measures.
- Promoting and improving employer led actions received the greatest support.
- Multimedia public education programs and school curricula stood out as areas to increase activity.
- There was broad support for improved fleet policies.

Overall there was not strong opposition to any of existing or proposed measures presented. More details on this summary can be found in Appendix D.

Concurrent with the survey administered by the CAC, the CLEAN AIR Force of Central Texas also conducted a survey that included questions about attitudes towards various emission reduction measures. The CLEAN AIR Force survey received responses from 733 residents of the Austin-Round Rock MSA, and provided another, independent, set of information about attitudes towards emission reduction measures. Where there were questions that were directly comparable between the two surveys, the results looked very similar.

2.3.4: Online Participation

Providing stakeholders and members of the public opportunities to participate in the planning process remotely helped remove barriers for the public and increased the overall participation. Using web-based tools to solicit input during the stakeholder involvement process allowed participants the opportunity to submit detailed written comments on proposed control measures. This information was used to shape the emission reduction measures identified in this plan.

2.3.5: Requests for Emission Reduction Commitments

Once the CACAC completed the Ozone Advance survey, it convened a meeting in August 2013 to consider recommendations to the CAC. At the September 2013 CAC meeting, the CAC voted to approve a list of regional emission reduction measures and to send a request to member jurisdictions and other participating organizations to provide emission reduction commitments that could be incorporated into the new plan. From October 3 through December 11, each city and participating organization was asked to make a formal commitment to participate in the plan and select appropriate emission reduction measures to implement. Section 3.2 describes each of these measures.

Chapter 3: Ozone Advance Emission Reduction Measures

The measures in this plan include three categories of measures – those that are going to be implemented region-wide, those that are being implemented by CAC member jurisdictions, and those that are being implemented by other participating organizations. A list of state measures applicable to the region can be found in Appendix B.

3.1: Regional Measures

Regional measures are those programs that cross regional boundaries or which are more efficient to be implemented on a region-wide basis than by individual jurisdictions or participating organizations.

3.1.1: Commute Solutions Program

The CAMPO Commute Solutions Program is a voluntary trip reduction program that was created in response to Federal requirements for metropolitan planning organizations (MPOs) to address the need to manage congestion, protect and enhance the environment, and promote energy conservation. The program offers information and resources on alternative commuting and options such as carpools, vanpools, transit, bicycling, and walking. It also provides information on work schedule alternatives such

as flextime, compressed workweeks, and teleworking. The Commute Solutions website (www.commuterolutions.com) serves as a “one-stop shop” for regional commute resources.

A key component of Commute Solutions is its regional trip planning and ridesharing system, MyCommuteSolution.com. The system expands the “one-stop shop” and is seamlessly integrated into the main website. It supports both ridesharing and trip-planning, so it can be used by carpoolers, vanpoolers, bicyclists, walkers, teleworkers, and transit users. Users log trips on a calendar within the MyCommuteSolutions website, which collects and compiles data on fuel savings, calories burned, VMT reduced, and emissions avoided.

MyCommuteSolution.com offers employers, cities, universities, and other organizations the option to set up a custom sub-site. Each employer can use the existing framework to set up their own, in-house, ridesharing and trip planning site branded with the look and feel of their company. They can manage incentives, collect data, and promote the program to suit their needs. Launching a custom sub-site is a relatively simple administrative process. CAMPO is able to offer this service at no cost to regional employers.

3.1.2: Technical Assistance to Plan Participants

The CACAC will lead a region-wide effort to provide technical assistance to participants in this plan to maximize the emission reductions achieved through their efforts. Examples of the assistance the CACAC will provide:

- Convening special meetings of staff members directly responsible for certain emission reduction measures, such as fleet managers and transportation planners, to share ideas and best practices;
- Develop “best practices” documents and resources for plan participants in order to assist them in execution of the measures they have committed to;
- Provide assistance to participants in preparing grant applications other available resources, and, as needed, preparing regional grant applications with the cooperation of plan participants; and
- Helping plan participants develop and distribute material to the community to explain and highlight the emission reduction measures being undertaken locally.

These efforts will help ensure that all of the participants in the program are able to learn from each other’s experiences and build the most effective and efficient emission reduction programs for their organizations.

3.1.3: Leverage Services Offered by Local Clean Cities Programs

The Department of Energy’s (DOE’s) Clean Cities program “brings together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle reduction measures, fuel economy improvements, and emerging transportation technologies.” Local Clean Cities programs can provide valuable assistance to participants in this Action Plan to reduce emissions through these strategies.

The Central Texas Fuel Independence Project (CTFIP)

The CTFIP will use a \$500,000 DOE grant to support the accelerated adoption of alternative fueling infrastructure and reduce barriers to adoption in the Austin and San Antonio regions through:

- education, training, outreach, marketing and policy activities;

- delivery of electricity and natural gas vehicle safety training;
- hosting electric vehicle and natural gas workshops to educate potential fleet users in the Austin and San Antonio regions; and
- holding training seminars regarding multifamily housing and workplace electric vehicle charging.

CTFIP is convening workgroups to advance electric vehicle (EV), natural gas vehicle (NGV), fleet adoption, and support infrastructure to ensure that Central Texas is fuel independent, less reliant on foreign oil, reaping the economic and traffic benefits of alternative fuel vehicles, and improving the air quality of our region. The participants have laid out a roadmap to expand EV and NGV infrastructure across region through targeted education campaigns, developing policies that enable government to be “EV/NGV Ready”, produce training materials and training events for targeted demographic groups, and marketing a CTFIP campaign.

Lone Star Clean Fuels Alliance

Lone Star Clean Fuels Alliance (LSCFA) is a Department of Energy Clean Cities Coalition promoting the use of alternative fuels in the Central Texas region and beyond. LSCFA is made up of federal, state and local agencies, industry partners and public and private fleets. LSCFA members have access to funding resources and grant-writing assistance as well as opportunities to coordinate with fuel providers, industry experts and peer fleets to facilitate the move from petroleum-based fuels to alternative fuels and vehicles. Membership is free for government entities such as municipalities, counties, state agencies, port authorities and school districts. LSCFA is one of 85 active Clean Cities coalitions, which together have displaced more than 1.2 billion gallons of petroleum since program inception in 1993. Information on programs and membership applications can be found at www.lonestarcfa.org.

3.1.4: Low-Income Repair and Replacement Assistance program (LIRAP) and Local Initiative Program (LIP)

In September 2005, the TCEQ adopted rules to implement a state inspection and maintenance (I/M) program in EAC counties that requested to participate. Travis and Williamson Counties, along with the cities of Austin and Round Rock, voluntarily agreed to implement the state’s I/M program in their jurisdictions. Travis and Williamson Counties also committed to administer the associated LIRAP, per existing state rules. LIRAP program provides funding to low-income residents of Travis and Williamson Counties to either repair or replace their older vehicles if they fail an emissions inspection. LIP uses a portion of the LIRAP funding to for various local projects that can help improve compliance with the I/M program.

Table 3-1: LIRAP and LIP Statistics FY 09 - FY 12

Jurisdiction	Voucher Type	FY 09	FY 10	FY 11	FY 12
Travis County	Replacement	628	684	286	70
	Repair	287	376	223	396
Williamson County	Replacement	189	178	86	50
	Repair	72	89	71	70
Total	Replacement	817	862	372	120
	Repair	359	465	294	466

While in 2011, the 82nd legislature cut funding for LIRAP and LIP by 87.5 %, in the 83rd Texas Legislature, lawmakers reinstated full funding for LIRAP and LIP for Travis and Williamson Counties specifically. This funding should enable these programs to continue and be used significantly beyond what they have been recently.

3.1.5: Outreach, Awareness, and Education Measures

Since this is a voluntary plan, persuading members of the community to take steps to reduce emissions will require significant outreach, awareness, and education efforts. In the spring of 2014, the CACAC will perform a comprehensive review of what outreach, awareness, and education needs there are in the community, what efforts are already underway, and what unmet needs exist. The CACAC will then identify what resources exist to meet those needs and will develop a comprehensive air quality outreach, awareness, and education plan for the region.

Some of the goals of these efforts will be to:

- Increase the willingness of the general public to take actions to reduce ozone-forming emissions,
- Develop consistent messages and branding for the regional effort,
- Secure commitments from entities that are not currently participating in the action plan to begin participating, and
- Ensure that vulnerable members of the community have enough information about ozone to protect themselves from exposure to high ozone levels when they occur in the region.

The insights gained from this planning process will then be applied for the 2014 ozone season, and the CAC will begin to undertake a coordinated outreach, awareness, and education effort based on this plan.

The CACAC will put special emphasis on developing methods to track and measure performance for these activities to tie them back to actual changes in behavior and emission reductions. This will be important to determine whether the efforts are achieving desired results.

3.2: CAC Member Commitments

CAC member jurisdictions have selected and committed to a wide range of measures as appropriate for their resources and constituencies. Many jurisdictions committed to continue measures begun under the 8-O3-Flex, as well as to implement additional measures. Each measure identified below was committed to by at least one CAC member. The specific jurisdictional commitments are summarized in a table at the end of this section. Copies of the actual resolutions adopted by member jurisdictions and the specifics of the measures they committed to can be found in Appendix A.

The City of Taylor is a “supporting member” of the CAC, meaning that it has committed to supporting the plan, but need not commit to specific measures. Instead, it will continue to report what measures it is implementing as part of the annual report. All other CAC members have made specific commitments as summarized in Section 3.2.9.

3.2.1: Commute Trip Reduction Measures

Commute trip reduction measures help reduce emissions by reducing on-road activity related to commuting. Commute trip reduction measures include:

- Providing alternative commuting infrastructure such as employee showers and bike racks;
- Implementing an internal employer commute reduction program for the CAC member's own employees;
- Allowing for compressed work weeks;
- Allowing for flexible work schedules;
- Alternative work schedules;
- Carpooling or alternative transportation programs;
- Transit pass subsidies;
- Teleworking;
- Incentivizing Alternative Commuting by Employees; and
- Encourage private sector trip reduction programs.

3.2.2: Development Measures

Development policies can help reduce emissions and ozone levels by promoting growth that minimizes emissions and reduces the urban heat island effect that increases the ground-level temperature, thereby increasing ozone formation. Development measures include:

- Access management to optimize ingress and egress from commercial properties;
- Expedited permitting for mixed-use, transit-oriented or in-fill development;
- Transit-Oriented Development;
- Tree Planting;
- Tree Maintenance Programs; and
- Development policies to improve energy and resource efficiency in new buildings.

3.2.3: Energy and Resource Conservation

Resource conservation measures reduce emissions due to the consumption of resources that produce ozone-generating emissions directly or indirectly, particularly electricity, gas, and water. Resource conservation measures include:

- Resource conservation;
- Energy efficiency programs for existing buildings;
- Increasing the local generation of renewable energy for electricity;
- Electric vehicle programs;
- Reducing water usage, which results in reduced electricity consumption used for local water systems; and
- Resource recovery and recycling programs, which reduce the need to consume energy and produce related emissions for the production of goods from new materials.

3.2.4: Fleet and Fuel Efficiency Measures

Fleet measures are intended to reduce emissions directly produced by vehicles and equipment owned and operated by each CAC member. These include:

- Alternative fuel vehicles;
- Conducting a business evaluation of fleet usage, including operations and right sizing analysis;

- Fueling vehicles in the evening;
- Treat any biodiesel used for fleet vehicles and equipment with TxLED-equivalent additives;
- Vehicle maintenance according to manufacturer specifications;
- Low-emission vehicles;
- Prioritizing the purchase of low-emission (Tier 2, bin 4 or better) light-duty vehicles;
- Prioritizing the purchase of alternative-fuel vehicles;
- Prioritizing the purchase of hybrid vehicles;
- Increasing fleet fuel efficiency;
- Replacing, repowering, and retrofitting older, higher-emitting vehicles and equipment, including through any TERP and DERA grant funding available during this plan;
- Increasing the substitution of alternative fuels for conventional fuels (to the extent they result in lower NO_x emissions);
- Limiting idling of fleet vehicles to 5 minutes or less;
- Employee training on alternative fuels and fuel efficiency; and
- Vapor recovery on pumps.

3.2.5: Outreach and Awareness

Local outreach and awareness measures raise the awareness of air quality initiatives and stress the importance of taking individual actions to reduce harmful emissions within each CAC member's community. These include:

- Ozone action day employee notification;
- Ozone action day community notification;
- Ozone action day response program; and
- Programs to improve awareness of and compliance with air quality rules.

3.2.6: Regulation and Enforcement

Regulation and enforcement measures include any measures that focus on either locally enforced rules or enhancing the enforcement of state rules by using local resources. These measures include:

- Enforcement of the state's locally-enforced idling rule;
- Local idling ordinances;
- Policies that would reduce the emissions impacts of large special events; and
- Open burning restrictions.

3.2.7: Sustainable Procurement and Operations

CAC members can help reduce emissions through its procurement processes and other operational practices. These include:

- Contractor provisions for high ozone days;
- Direct deposit
- Restricting the use of city- or county-operated drive-through facilities on ozone action days;
- Electronic government services (e-Government) and providing services in remote locations to reduce the need for in-person trips to central government offices;
- Landscaping voluntary start at noon on high ozone days education program;
- Low VOC asphalt;
- Low VOC roadway striping material;
- Providing shaded parking for cars;

- Clean landscaping contracting to encourage the use of low-emission equipment and practices in landscaping contracts;
- Clean construction contracting to encourage the use of low-emission equipment and practices in construction contracts; and
- Encouraging the local sourcing of materials in supply contracts to reduce trucking activity.

3.2.8: Transportation Emission Reduction Measures (TERMs)

TERMs are projects that contribute to air quality improvement by reducing congestion and single-occupant-vehicle travel. These projects include, for example:

- Bicycle and pedestrian infrastructure;
- Operational Improvements such as traffic signal improvements and intersection modifications;
- Transit improvements; and
- Other transportation programs that reduce on-road emissions.

CAMPO tracks and reports TERMS for its member jurisdictions. To see a complete list of the TERMS that CAC members have committed to, please review Appendix C.

CAC members have made a number of other commitments to implement a variety of measures that will result in reductions in ozone-forming emissions, but which don't fit well into any of the categories listed above. These include:

- Services that reduce the need for non-commute "side" trips, such as direct deposit and e-government;
- Vehicle refueling measures such as refueling in the evenings or vapor recovery systems on pumps;
- Use of low-VOC roadway materials such as traffic markings and asphalt;
- Paving of unpaved roads to reduce increases in emissions from vehicles operating on unpaved roads; and
- Shaded parking to reduce the engine load needed to cool the car once in operation and to reduce evaporative VOC emissions.

3.2.9: Summary of CAC Member Jurisdiction Commitments

The following table summarizes the emission reduction measure commitments each CAC member jurisdiction made for this action plan. “O’s” represent measures that were already being implemented or had already been committed to under the 8-O3 Flex Plan, while the X’s represent new commitments under the OAP.

Table 3-2: CAC Member Emission Reduction Measure Commitments

Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County	City of Cedar Park	City of Georgetown	City of Hutto	City of Sunset Valley
Commute Solutions																
Alternative Commute Infrastructure		X					O									
Commute Solutions Programs, May Include:	O	O	O		O		O		O							O
*Compressed Work Week	O		O		O				O							O
*Flexible Work Schedule	O		O		O		O		O							O
*Carpool or Alternative Transportation Program, May Include Incentive	O															
*Transit Pass Subsidized by Employer	O	X														
*Teleworking (Full Time)	O															
*Teleworking (Part Time)	O	O	O						O							
Implement Internal Employer Commute Reduction Program	X						X		X						X	
Encourage Private Sector Commuter Trip Reduction Programs	X						X		X						X	

Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan, 12/31/2013

Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County	City of Cedar Park	City of Georgetown	City of Hutto	City of Sunset Valley
Incentivize Alternative Commuting by Employees	X	X														
Development Measures																
Access Management			O				O			O						
Expedited Permitting for Mixed Use, Transit-Oriented or In-Fill Development							O	O								
Transit-Oriented Development								X								
Tree Planting	O	O	O	O		O	O	O	O	O			O			O
Tree Maintenance Programs	X												O			
Development Policies to Improve Energy and Resource Efficiency in New Buildings	X												O		X	
Energy and Resource Conservation																
Resource Conservation	O	O	O	O	O	O										
Energy Efficiency Programs	X				O	X	O	X			O		O	O		O
Renewable Energy Programs	X															
Electric Vehicle Programs	X															
Water Conservation Programs													O	O		
Resource Recovery and Recycling Programs														O		
Fleet and Fuel Efficiency Measures																
Alternative Fuel Vehicles				O	O								O	O		O
Business Evaluation of Fleet Usage, Including Operations and Right-Sizing	O		O	O	O	X							X			

Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan, 12/31/2013

Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County	City of Cedar Park	City of Georgetown	City of Hutto	City of Sunset Valley
Fueling of Vehicles in the Evening		O	O	O		O	O	X		O		O	O			X
Low Emission Vehicles		O	O	O						O		O	O			
Texas Low-Emission Diesel (TxLED) Equivalent for Fleets	O		O		O								O	O		
Vehicle Maintenance by Manufacturer Specifications		O	O	O	O	O	O	X				O	O	O		
Prioritize Purchasing of Low-Emission Light Duty Vehicles	X						X									
Prioritize Purchasing of Alternative-Fueled Vehicles and Equipment	X															
Prioritize Purchasing of Hybrid Vehicles and Equipment	X															
Increase Fleet Fuel Efficiency	X												O			
Increase Substitution of Alternative Fuels for Conventional Fuels	X															
Idling Limits for Fleet Vehicles and Equipment	X		O			X	O			O	O		X	O		O
Retrofit/Repower/Replace Vehicles and Equipment through TERP/DERA Funding	X				X								X			
Employee Training on Alternative Fuels and Fuel Efficiency	X												O			
Vapor Recovery on Pumps						X	X					O				

Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan, 12/31/2013

Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County	City of Cedar Park	City of Georgetown	City of Hutto	City of Sunset Valley
Outreach and Awareness																
Ozone Action Day Program, Includes:	0	0	0	0	0	0	0	0	0	0		0	0		X	
*Employee Education Program	0	0	0	0	0	0	0	0	0	0		0	0		X	
*Public Education	0	0	0	0		0	0	0		0		0	0			
*Ozone Action Day Notification Program	0	0	0	0	0	0	0	0	0	0		0	0			
*Ozone Action Day Response Program	0	0	0	0		0	0					0	0			
Programs to Improve Awareness of and Compliance With Air Quality Rules	X												0	X		
Regulation and Enforcement																
Open Burning Restrictions							0	0	X	0	0		0			0
Idling Enforcement-Enforce State Rule	0	0		0		0	0							0		X
Idling Enforcement: Local Ordinance	0		0		0			0		0	0			0	0	
Special Event Emission Reduction Policies	X								0							
Sustainable Procurement and Operations																
Contractor Provisions for High Ozone Days																0
Direct Deposit		0	0	0	0	0	0		0	0	0	0	0	0	X	0
Drive-Through Facilities on Ozone Action Days										0						X

Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan, 12/31/2013

Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County	City of Cedar Park	City of Georgetown	City of Hutto	City of Sunset Valley
e-Government and/or Available Locations		O	O	O	X	O	O	O	O		X		O	O		O
Landscaping Voluntary Start at Noon on High Ozone Days Education Program		O								O						O
Low VOC Asphalt		O	O	O			O			O						
Low VOC Roadway Striping Material		O	O	O		O	O			O						O
Shaded Parking		O	O							O						
Clean Landscaping Contracting									X							
Clean Construction Contracting									X							
Local Sourcing of Materials									X							
Transportation Emission Reduction Measures (TERMs)																
Pedestrian and Bike Infrastructure Improvements	X	X	O													O
Transit Improvements			X										O			
Operational Improvements	X		X						X							
Other Transportation Improvements	X												O			
Paving of Unpaved Roads						X		X		O						

In addition to the commitments listed above, two of the City of Austin's enterprise activities have made commitments as part of this plan.

- Austin-Bergstrom International Airport (ABIA) commitments include:
 - Providing terminal infrastructure to reduce the use of auxiliary power units during passenger boarding and aircraft serving;
 - Providing alternative fuel opportunities for off-site parking companies at ABIA;
 - Using dedicated propane mowers to maintain the non-secure part of the airport;
 - Providing fast-charge electric stations on airport terminal ramp to support airline ground service equipment;
 - Partnering with airlines to convert ground support equipment fleet to electric; and
 - Maintaining publicly accessible alternative fuel infrastructure.
- Austin Energy commitments include:
 - Residential energy efficiency incentives, including for appliances, weatherization, and thermostats;
 - Increase the usage of electric vehicles and electric fueling stations; and
 - Increased renewable energy generation.

3.3: Other Commitments

3.3.1: CAPCOG

CAPCOG is a voluntary association including over 90 member local governments and it serves as an advocate, planner and coordinator of initiatives that, when undertaken on a regional basis, can be more effective and efficient. To support the region's air quality improvement efforts CAPCOG has committed to the following measures:

- Flexible working hours and compressed work week schedules;
- Direct deposit for employees, e-Government through active Internet access to information and services, and encouragement of meetings by teleconference and web-based applications; and
- Ozone action day education, notification and response program, such as rewards for brown-bag lunch on predicted high ozone days.

CAPCOG's Air Quality Program provides technical assistance and information to area businesses, government entities and community groups on regional air quality issues, especially focusing on ground-level ozone pollution. CAPCOG provides support to the CAC and participates in the CACAC activities to develop ozone control strategies for the region. The Air Quality Program staff members assist local governments in the education on air quality issues and implementation of selected emission reduction plans. See www.capcog.org/ozoneadvance.

3.3.2: CAMPO

CAMPO is the Metropolitan Planning Organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson Counties. CAMPO coordinates regional transportation planning with counties, cities, CapMetro, Capital Area Rural Transportation System, CTRMA, and TxDOT.

In addition to CAMPO's role in supporting various regional measures and in conducting research, the agency has committed to continuing its measures from the 8-O3 Flex Plan. These are:

- Commute Alternatives (Compressed Work Week, Flexible Work Schedule, Employer Subsidized Transit, Part-time Teleworking);
- Direct Deposit;
- e-Government;
- Resource Conservation; and
- Ozone Action Day Education Program (Employee Education, Public Education, Notification Program).

3.3.3: CapMetro

CapMetro is Austin's regional public transportation provider. CapMetro provides 50 Metro bus routes and eight express routes for the region, as well as 19 shuttle routes for the University of Texas. CapMetro also provides passenger rail service between Leander and downtown Austin, MetroAccess service for passengers with disabilities, van and carpool coordination, freight rail service, and bike programs. CapMetro committed to a number of TERMS, which are detailed in Appendix C. In addition to these, CapMetro has also committed to implementing a number of other measures that are detailed in section 3.3.12.

3.3.4: CTRMA

CTRMA is an independent government agency created in 2002 to improve the transportation system in Williamson and Travis counties. CTRMA's mission is to implement innovative, multi-modal transportation solutions that reduce congestion and create transportation choices that enhance quality of life and economic vitality. CTRMA committed to a number of TERMS, which are detailed in Appendix C, as well as the following measures:

- Access Management;
- Use of Low-VOC Striping Material;
- Use of Low-VOC Asphalt;
- Tree Planting;
- Participating in Carpool or Alternative Transportation Programs;
- Direct Deposit;
- Fueling Vehicles in the Evening;
- Resource Conservation;
- Ozone Alert Day Employee Education Program;
- Ozone Alert Day Public Education Program;
- Ozone Alert Day Notification Program; and
- Vehicle Maintenance as specified by manufacturer.

3.3.5: CLEAN AIR Force of Central Texas (CAF)

CAF is a nonprofit organization that was founded in 1993 to address air quality issues in the Austin-Round Rock MSA, and has participated in the previous air quality planning efforts for the region (www.cleanairforce.org). As reported in its 2012 report, CAF's focuses include education and outreach, as well as serving as a resource and advisor for local entities. CAF administers a number of air quality regional programs, including:

- The **Clean Air Partners Program**, which works with local employers to design company-specific or organization-specific emission reduction strategies (www.cleanairpartnerstx.org); Clean Air Partners

currently has dozens of private-sector, governmental, and non-profit members representing tens of thousands of employees in the region;

- An **Ozone Alert Program** to help spread the word to over 66,000 community members when the TCEQ declares an Ozone Action Day for the following day; and
- A **High School Air Quality Public Service Announcement (PSA) Contest**, which engages local youth in air quality research and education and highlights their work at press events and on cable television stations in Central Texas during ozone season; in 2012, there were 25 entries for the program.

As part of this plan, CAF has committed to the following:

- Regional Trip Planning and Rideshare:
 - Promote the use of CAMPO's Commute Solutions Program to Clean Air Partners.
- Private Sector Emissions Reductions Commitments:
 - Continue to collect emission reduction data from Clean Air Partners;
 - Encourage Clean Air Partners to conduct "vampire" energy audits;
 - Design and organize volunteer activities for Clean Air Partners; and
 - Inform Clean Air Partners when TERP and DERA funding opportunities arise.
- Region-Wide Outreach Commitments:
 - Encourage the use of low-emission landscaping practices;
 - Encourage shift of high electric demand activities to non-peak hours;
 - Encourage no idling for delivery trucks;
 - Promote combined heat and power;
 - Continue sponsoring a high school PSA contest;
 - Continue sending Ozone Action Day alert notifications; and
 - Encourage cleaner fuels for fleets.

3.3.6: LCRA

LCRA is a conservation and reclamation district created by the Texas Legislature in 1934. It supplies electricity, manages water supplies and floods in the Lower Colorado River basin, provides public parks, and supports community development in 58 Texas Counties. LCRA has participated in the EAC SIP and the 8-O3 Flex Plan, and LCRA's staff has indicated that they plan to implement the following measures as part of this Action Plan:

- Incorporate business evaluation of fleet usage into its fleet policy;
- Encourage employees to reduce trips by using carpooling, telecommuting, and video/audio conferencing;
- Provide preferential parking for carpool, low-emission, and zero-emission vehicles;
- Incorporate idling restrictions into fleet policy and post signs; and
- Educate employees about ozone and Ozone Action Days.

3.3.7: Texas Commission on Environmental Quality

TCEQ implements a number of measures specific to its operations at its offices in Austin that help reduce emissions. These include:

- Commute Alternatives, including:
 - Compressed Work Week;

- Flexible Work Schedule;
- Carpool or Alternative Transportation, may Include Incentive;
- Teleworking (part time);
- Direct Deposit;
- E-Government and/or Available Locations;
- Resource Conservation;
- Ozone Action Day Programs:
 - Employee Education Program;
 - Public Education Program;
 - Ozone Action Day Notification Program;
- Alternative Fuel Vehicles;
- Low-Emission Vehicles; and
- Shaded Parking.

3.3.8: Texas Department of Transportation Austin District

Since 2005, TxDOT has sponsored an agency-wide Clean Air Program that encourages employees to practice commute reduction activities such as ridesharing, biking, walking, public transportation, as well as reducing other trips during the work day by encouraging employees to brown-bag their lunches. Employees are reminded and encouraged to perform regular maintenance on their vehicles to help reduce vehicle emissions. Employees earn points for participating in these activities from May through September and leave time is granted once enough points are earned.

To the extent practical, the district office uses clean business practices such as:

- Using low-emission diesel fuel;
- Avoiding refueling between the hours of 6-10 am;
- Limiting the idling of vehicles;
- Sending ozone action day notifications to district employees;
- Avoid mowing on TxDOT properties on Ozone Action Days;
- Encourage contractors to use efficient equipment as well as properly maintain equipment to mow right-of-ways;
- Continue to purchase solar-powered light and sign boards;
- Continue to install LED signal bulbs;
- Purchase energy star products;
- Encourage contractors to apply for grants such as TERP for highway equipment; and
- Continue to allow flexible work schedules and compressed work schedules.

In addition to these programs, TxDOT sponsors the “Drive Clean Across Texas” partnership program between TxDOT, TCEQ, and EPA to educate the public about the impact of car emissions on air quality. The program helps to educate the public on ways they can reduce emissions. The program includes educational material for school curriculum, provides vehicle replacement assistance, and information on how to report a smoking vehicle. <http://www.drivecleanacrosstexas.org>.

In addition to these measures, TxDOT-Austin also is sponsoring a number of TERMS, which are detailed in Appendix C.

3.3.9: Texas Department of Transportation Headquarters

The Texas Department of Transportation Headquarters Office (TxDOT-HQ) has committed to the following measures:

- Business Evaluation of Fleet Usage;
- Commuter Trip Reduction Program;
- Encourage Private Sector Commuter Trip Reduction Programs through the Drive Clean Across Texas public outreach program;
- Alternative commute infrastructure; and
- Ozone Action Day Employee Notification.

3.3.10: Texas Lehigh Cement Company

The Texas Lehigh Cement manufacturing plant in Hays County is the largest point source of NO_x emissions in the MSA, making up around 6% of the total anthropogenic NO_x emissions from all sources. Company management worked with CAPCOG and University of Texas technical staff members using photochemical modeling assessment routines to better define conditions when the plant's emissions might be impacting the region's ozone monitors. With an understanding of what meteorological and background ozone levels were most likely to exacerbate the influence of the plant's emissions on peak ozone formation, Texas Lehigh and CAPCOG devised a plan to mitigate impacts on predicted high-ozone days. That plan involved increasing the emission reduction efficiency of selective non-catalytic reduction (SNCR) NO_x reduction equipment on specified ozone action days, and was initiated during the "Big Push" efforts in 2009 under the 8-O3 Flex Program. These efforts will continue under this Ozone Advance Program.

3.3.11: Texas Nursery and Landscaping Association

The Texas Nursery and Landscape Association (TNLA) has committed to increase awareness of regional air quality issues by distributing educational articles in the TNLA Green Matters newsletter and the TNLA Green magazine. The TNLA will also invite speakers to make presentations to its membership on the topic of Air Quality in Central Texas.

3.3.12: Summary of Other Participating Organization Commitments

The following table summarizes the commitments that each of the other organizations participating in the plan have made as part of this plan.

Table 3-3: Summary of Other Participating Organization Commitments

Measure	CAPCOG	CAMPO	CapMetro	CTRMA	CAF	LCRA	TCEQ	TxDOT-Austin	TxDOT-HQ	Texas Lehigh	TNLA
Commute Solutions											
Alternative Commute Infrastructure			O						O		
Commute Solutions Programs, May Include:	O	O	O	O		O		O	O		
*Compressed Work Week	O	O	O			O	O	O			
*Flexible Work Schedule	O	O	O	O		O	O	O			
*Carpool or Alternative Transportation Program, May Include Incentive		O	O	X		O	O				
*Transit Pass Subsidized by Employer		O	O								
*Teleworking (Full Time)			O			O	O				
*Teleworking (Part Time)		O	O			O					
Implement Internal Employer Commute Reduction Program			X						O		
Encourage Private Sector Commuter Trip Reduction Programs			X		X				O		
Incentivize Alternative Commuting by Employees											
Development Measures											
Access Management			O	O							
Expedited Permitting for Mixed Use, Transit-Oriented or In-Fill Development											
Transit-Oriented Development			O								
Tree Planting			O	O		X					
Tree Maintenance Programs			X								

Measure	CAPCOG	CAMPO	CapMetro	CTRMA	CAF	LCRA	TCEQ	TxDOT-Austin	TxDOT-HQ	Texas Lehigh	TNLA
Development Policies to Improve Energy and Resource Efficiency in New Buildings			X								
Energy and Resource Conservation											
Resource Conservation		O		O			O				
Energy Efficiency Programs			X		X			O			
Renewable Energy Programs								O			
Electric Vehicle Programs											
Water Conservation Programs			X								
Resource Recovery and Recycling Programs			X								
Fleet and Fuel Efficiency Measures											
Alternative Fuel Vehicles			O				O				
Business Evaluation of Fleet Usage, Including Operations and Right-Sizing			O			X					
Fueling of Vehicles in the Evening				O				O			
Low Emission Vehicles			O				O				
Texas Low-Emission Diesel (TxLED) Equivalent for Fleets			O					O			
Vehicle Maintenance			O	O				O			
Prioritize Purchasing of Low-Emission Light Duty Vehicles											
Prioritize Purchasing of Alternative-Fueled Vehicles and Equipment			X								
Prioritize Purchasing of Hybrid Vehicles and Equipment											
Increase Fleet Fuel Efficiency			X								
Increase Substitution of Alternative Fuels for Conventional Fuels			X								
Idling Limits for Fleet Vehicles and Equipment			X			X		O			
Retrofit/Repower/Replace Vehicles and Equipment through TERP/DERA Funding			X					O			

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Measure	CAPCOG	CAMPO	CapMetro	CTRMA	CAF	LCRA	TCEQ	TxDOT-Austin	TxDOT-HQ	Texas Lehigh	TNLA
Employee Training on Alternative Fuels and Fuel Efficiency											
Vapor Recovery on Pumps											
Outreach and Awareness											
Ozone Action Day Program, Includes:	O	O	O	X			O	O			X
*Employee Education Program	O	O	O	X			O	O			X
*Public Education	O	O	O	X	X		O				
*Ozone Action Day Notification Program	O	O	O	O	X		O	O			
*Ozone Action Day Response Program	O		O		X			O		O	
Programs to Improve Awareness of and Compliance With Air Quality Rules			X		X						
Regulation and Enforcement											
Open Burning Restrictions											
Idling Enforcement-Enforce State Rule											
Idling Enforcement: Local Ordinance											
Special Event Emission Reduction Policies											
Sustainable Procurement and Operations											
Contractor Provisions for High Ozone Days											
Direct Deposit	O	O	O	O			O				
Drive-Through Facilities on Ozone Action Days											
e-Government and/or Available Locations		O	O				O				
Landscaping Voluntary Start at Noon on High Ozone Days Education Program											
Low VOC Asphalt				O							
Low VOC Roadway Striping Material				O							
Shaded Parking			O				O				

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Measure	CAPCOG	CAMPO	CapMetro	CTRMA	CAF	LCRA	TCEQ	TxDOT-Austin	TxDOT-HQ	Texas Lehigh	TNLA
Clean Landscaping Contracting								O			
Clean Construction Contracting								O			
Local Sourcing of Materials											
Transportation Emission Reduction Measures (TERMs)											
Pedestrian and Bike Infrastructure Improvements			X	X				X			
Transit Improvements			X								
Operational Improvements			X					X			
Other Transportation Improvements			X								
Paving of Unpaved Roads											

Chapter 4: Ongoing Planning Activities

4.1: Tracking Plan Implementation and Performance

CAPCOG will prepare an annual report documenting the performance of activities described in this plan from the prior year that will be submitted to EPA by June 30th of each year the plan is in effect. The report will contain details of the status of the commitments made by each of the plan's participants, as well as any additional details about the measures the participants are undertaking. CAPCOG will include an update on the air quality status and a review of technical research relevant to the area's ozone planning efforts in each report.

As part of the annual report, CAPCOG will also collect data from each plan participant on some key indicators that can be used to independently monitor performance of measures and to compare performance across entities. Plan participants will be asked to submit data on their vehicle and equipment fleets, fuel consumption, electricity consumption, resource consumption, and contracted services that can result in emissions. To the extent possible, CAPCOG will try to quantify the emission reduction benefits of data reported for these reports.

Each year's annual report will be reviewed and approved by the CAC before submission to EPA. The CAC will use the annual report as the starting point for updating this plan later in each year, as described below.

4.2: Regional Air Quality Technical Research Activities

Continuing to develop good air quality data will remain an important part of the region's air quality planning activities moving forward. CAPCOG and CAMPO will continue to develop technical data used for decision-making on air quality, and the CAC has also identified a few key research projects it will seek to conduct over the next few years.

4.2.1: CAPCOG Air Quality Research

As it did in the 8-O3 Flex Plan, CAPCOG plans to continue to provide technical support for regional air quality planning through air quality monitoring, air quality data analysis, emissions inventory research, and photochemical modeling, as funding allows. The following list provides examples of the kinds of technical support activities CAPCOG plans to undertake through 2018 in support of this plan:

- Air Quality Monitoring Activities:
 - Operate seasonal research ozone monitors to supplement TCEQ's regional ozone monitors sufficient to characterize ozone transport in the region,
 - Conduct special monitoring activities as needed to support other scientific assessments,
- Air Quality Data Analysis:
 - Prepare ozone "Conceptual Models" that characterize ozone formation in the region based on monitoring and meteorological data;
 - Analyze emissions trends; and
 - Analyze costs and benefits of emission reduction measures.
- Emissions Inventory Research:
 - Conduct original research on some key area source and non-road emissions sources of NO_x;

- Work with CAMPO to provide up-to-date on-road emissions inventories consistent with regional transportation planning assumptions; and
- Work with local point source operators in order to obtain improved data that can be used for photochemical modeling.
- Photochemical Modeling:
 - Model the impact of emission reduction measures on local ozone levels;
 - Model the impacts of different source categories and source regions on local ozone levels; and
 - Model the impacts of other changes in emissions on local ozone levels.

CAPCOG will also strive to stay informed about new modeling and air quality technical information developed by others, such as EPA, TCEQ, and other areas of the state, in order to enable local decision-makers access to this information.

4.2.2: CAMPO Air Quality Research

- CAMPO conducts various air quality-related projects and studies. These have included: calculating the estimated emissions from the *CAMPO 2035 Regional Transportation Plan*, estimating short-term truck idling activity and emissions, preparing link-based on-road emissions inventories for 2012, 2015, and 2018, and preparing photochemical modeling files that will be used to model the on-road emissions.
- CAMPO's nationally recognized Congestion Management Process (CMP) is used to monitor, evaluate and manage congestion throughout the regional transportation system. The primary tool of the CMP is its roadway congestion analysis. This analysis uses historical traffic information data from approximately 100 roads in the six-county CAMPO region. Data analysis shows congested segments and is used by regional partners, including the TxDOT Bottleneck Study Committee, to identify candidates for operational improvement projects.
- CAMPO will continue to conduct transportation-related emissions research, including emissions calculations for the upcoming *CAMPO 2040 Regional Transportation Plan*.

4.2.3: Research Priorities Identified by the CAC

The CAC has identified four research priorities for the region. These include:

- An assessment of vehicle inspection and maintenance program compliance levels;
- An assessment of air quality impacts of options for shifting traffic from Interstate Highway 35 to State Highway 130;
- An assessment of impacts of shifting modes of transportation; and
- An assessment of air quality impacts of regional non-road fleets and policy evaluation.

The vehicle inspection and maintenance program is both one of the highest-impact measures and by far the most expensive measure for our region, so gaining a solid understanding of the current compliance levels will be an important part of any future efforts to improve program performance. Drivers in Travis and Williamson County pay close to \$30 million a year in fees and repair costs for the program. The TCEQ uses default compliance rates in the EPA's Motor Vehicle Emissions Simulator (MOVES) model, which is 93.12%. Understanding the amount of emission reductions that might be possible through increased compliance enforcement efforts would be useful to determine how much to invest in such

enforcement activities. Currently, there is no scientifically-based compliance level available for the region.

The air quality ramifications of shifting traffic from Interstate Highway 35 to State Highway 130 have not yet been quantified. Transportation decision makers would benefit from a study that includes:

- Base year and Future Base year traffic counts on IH35 and SH130
- Percentage of traffic able to switch route
- Mechanisms to incentivize or otherwise enable the shift
- Effects of potential emission reductions on the photochemical model in multiple scenarios

The potential for air quality benefits due to mode shifts away from single-occupant vehicle (SOV) remains under-studied. As the region continues to promote and expand transit options and bicycle/pedestrian amenities, decision makers need a clearer picture of their value. An effective mode shift study would, like the IH35/130 study, include:

- Base year and Future Base year counts for non-SOV modes, particularly for transit and bicycle/pedestrian
- Potential for mode shift given various scenarios
- Effects of modeled emission reductions on the photochemical model

An assessment of the air quality impacts of the non-road fleet and policy evaluation should provide valuable information to local decision-makers in deciding the best ways to obtain emission reductions from non-road sources of emissions, including aviation, agricultural equipment, construction equipment, drilling rigs, industrial equipment, lawn and garden equipment, light commercial equipment, locomotives and railway maintenance equipment, recreational equipment, and recreational marine equipment. An analysis of the impact of these diverse sources, which contribute more NO_x emissions on typical ozone season days than point sources, and policy options for addressing these emissions, should help policymakers decide on how best to address these sources.

4.3: Provisions for Public and Stakeholder Involvement

Over the course of several proactive air quality planning projects, the CAC has sought stakeholder participation with the goal that policy recommendations reflect input from all sectors of the community, including governmental and nongovernmental organizations, regulated business interests, and general members of the public. Extensive efforts were undertaken during the development phase of the OAP action plan to involve various stakeholder interests in the process, as discussed in Section 2.3. In addition, the plan is expected to be updated as necessary to meet any changes in the air quality standards and to react to any changes in monitored values as well as changes in the emissions due to growth in population or new source additions. Actions taken in response to these changes will need to be vetted with public constituencies and targeted stakeholder groups to arrive at solutions which reflect stakeholder input with a goal of consensus.

Involvement of local governments and their constituencies is and has been a core element of the air quality planning process in this region, as the CAC is comprised of elected officials from the member

local governments in the region. They meet periodically throughout the year to receive updates on the air quality status and progress and challenges of achieving plan commitments. If adjustments need to be made to plan elements they can consider and make policy recommendations to the elective bodies they represent. Once a year, the CAC conducts a more formal review of the plan's progress based on a review of monitoring and other technical data, as well as a survey of all plan participants. The CAC is asked to review the resulting report, invite public comments and forward the final report to EPA. The CACAC meets monthly to discuss current issues relating to the air quality plan and to communicate those issues requiring policy consideration up to their respective elected officials.

Other government agencies and non-governmental organizations are involved on a regular basis through participation in the CACAC meetings and e-mail briefings. The CACAC participation list includes, in addition to local government members, environmental organizations such as Sierra Club representatives, State agencies such as Texas Department of Transportation and electricity generation organizations such as the Lower Colorado River Authority.

Engagement of members of the general public is accomplished through outreach programs such as Ozone Action Heroes and other public service announcements, which both provide information that can assist in reducing an individual's emission footprint and encourage individuals to provide suggestions on measures which would be helpful for community efforts to minimize ozone. There are also several other web sites which contain extensive information on air quality data, plans and mitigation measures and progress reports on the current plan commitments.

Targeted outreach and involvement of specific stakeholder groups throughout the term of this plan is expected to be an important goal for sustaining the level of expertise and commitment by various source categories to continue making contributions to the region's ozone reduction efforts. Efforts will focus on increased education to underserved constituencies. Providing outreach and involvement opportunities is expected to increase opportunities for contributing practical emission reduction solutions.

4.4: Future Plan Updates

The CAC will provide EPA with an annual status summary of the region's Ozone Advance by December 31st of each year through 2018. The summary, based on information tracked under 5.1, will include:

- Implementation status of planned measures/programs
- Current air quality
- Stakeholder meetings/event
- Additions or revisions to the Action Plan

The Ozone Advance Action Plan is intended as a "living document." The CAC anticipates adding participants and measures, as well as making adjustments to existing components, during the five-year term of the agreement. The annual status summary will be the avenue for Action Plan updates.

Appendix A: CAC Member Resolutions in Support of Ozone Advance

This appendix provides copies of the resolutions approved by each CAC member in support of this Action Plan. The table below shows the dates that each CAC member adopted a resolution in support of this plan and outlining its commitments.

CAC Member Resolution Adoption Dates

Entity	Resolution Adopted	Resolution Number
City of Cedar Park	October 3, 2013	
Caldwell County	October 14, 2013	26-2013
Bastrop County	October 14, 2013	
Hays County	October 15, 2013	
Travis County	October 22, 2013	
City of Sunset Valley	October 22, 2013	102213
City of Bastrop	October 22, 2013	R-2013-13
City of Austin	October 24, 2013	
City of Round Rock	October 24, 2013	R-13-10-24-F9
City of Lockhart	October 29, 2013	2013-11
City of Georgetown	November 12, 2013	111213-N
City of Luling	November 14, 2013	2013-R-10
Williamson County	November 19, 2013	
City of Elgin	November 19, 2013	2013-11-19-15
City of Hutto	November 21, 2013	R-13-11-21-12A1
City of San Marcos	December 17, 2013	2013-198R

Bastrop County

Resolution

COMMISSIONERS COURT RESOLUTION AUTHORIZING BASTROP COUNTY TO PARTICIPATE IN THE REGIONAL OZONE ADVANCE PROGRAM

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, Bastrop County is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHEREAS, the CAC has agreed to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC has requested that its members consider committing to the Action Plan by October 31, 2013; and

NOW, THEREFORE, BE IT RESOLVED THAT:

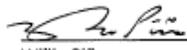
1. Bastrop County commits to continue to implement air quality measures as part of the region's Ozone Advance Program Action Plan.
2. Direct staff to develop a list of ozone-reducing measures which are appropriate for Bastrop County.
3. Direct staff to implement said measures.

AND SO IT IS ORDERED.

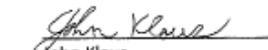
PASSED AND ADOPTED on this 14th day of October 2013.

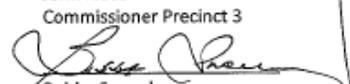
Bastrop County Commissioners Court

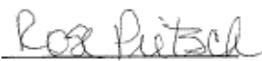

Paul Pape
County Judge


Willie Piña
Commissioner Precinct 1


Clara Beckett
Commissioner Precinct 2


John Klaus
Commissioner Precinct 3


Bubba Snowden
Commissioner Precinct 4

ATTEST: 
Rose Pietsch, County Clerk

Caldwell County



RESOLUTION NO. 26-2013

WHERE AS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHERE AS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHERE AS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHERE AS, the County of Caldwell is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHERE AS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHERE AS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

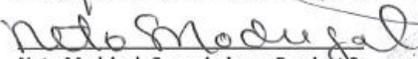
BE IT RESOLVED BY THE COMMISSIONERS COURT OF CALDWELL COUNTY,

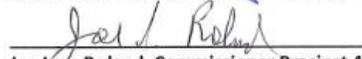
That Caldwell County commits to continue to implement the attached list of measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement the following measures as part of the region's Ozone Advance Program Action Plan (indicate with a check or yes/no) and directs staff to implement these measures as part of the Action Plan.


Tom B. Bonn, County Judge


Alfredo R. Muñoz, Commissioner Precinct 1


Fred Buchholtz, Commissioner Precinct 2


Neto Madrigal, Commissioner Precinct 3


Joe Ivan Roland, Commissioner Precinct 4

ATTEST:


Carol Holcomb, County Clerk



Hays County



OZONE ADVANCE RESOLUTION

A resolution of the county of Hays, State of Texas, committing to continued participation in and implementation of measures related to the region's ozone action plan.

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, the County of Hays is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

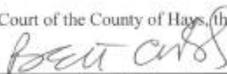
WHEREAS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

BE IT RESOLVED BY THE HAYS COUNTY COMMISSIONERS COURT

The County commits to continue to implement the attached list of measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement the following measures as part of the region's Ozone Advance Program Action Plan and directs staff to implement these measures as part of the Action Plan:

ADOPTED by the Commissioners Court of the County of Hays, the State of Texas, this 15th day of October, 2013.

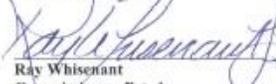

Bert Cobb
Hays County Judge


Debbie Gonzales Ingalsbe
Commissioner, Pct. 1


Mark Jones
Commissioner, Pct. 2


Will Conley
Commissioner, Pct. 3




Ray Whisnant
Commissioner, Pct. 4

ATTEST:

Liz Q. Gonzalez
Hays County Clerk

Travis County

RESOLUTION



A RESOLUTION OF TRAVIS COUNTY TO IMPLEMENT EMISSION REDUCTION ACTIONS TO ASSIST IN CLEAN AIR EFFORTS PER THE OZONE ADVANCE PROGRAM ACTION PLAN TO MAINTAIN TRAVIS COUNTY'S DESIGNATION AS "ATTAINMENT" IN REGARDS TO GROUND LEVEL OZONE STANDARDS

- Whereas,*** The Citizens of Travis County recognize the value of and are conscious of the need for clean air;
- Whereas,*** the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone;
- Whereas,*** the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS;
- Whereas,*** A designation of non-attainment will inhibit local flexibility in planning and development and create economic impacts to the citizens of Travis County for up to twenty years;
- Whereas,*** Travis County is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments;
- Whereas,*** the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013;
- Whereas,*** the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; ***and***

Now, therefore, be it resolved by the Travis County Commissioners Court:

That Travis County affirms to renew commitments made and implemented under the 8-Hour Ozone Flex Plan and commits to additional emission reduction and planning measures to help voluntarily secure an ongoing designation of "in attainment" under the National Ambient Air Quality Standards for Ground Level Ozone.

Resolved, this 22nd day of October, 2013.



SAMUEL T. BISCOE

County Judge

ABSENT

RON DAVIS
Commissioner, Precinct One



BRUCE TODD
Commissioner, Precinct Two



GERALD DAUGHERTY
Commissioner, Precinct Three



MARGARET J. GÓMEZ
Commissioner, Precinct Four

Williamson County

Resolution on Participation in the Austin-Round Rock MSA Ozone Advance Program

Whereas, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that there are near violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

Whereas, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage emission reduction that will help keep the area in attainment of the ozone NAAQS; and

Whereas, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local conditions before air quality standards violations occur or before Federal measures are mandated; and

Whereas, Williamson County is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments; and

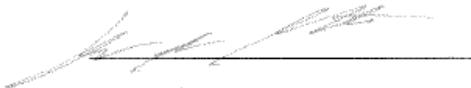
Whereas, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

Whereas, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan;

Therefore, be it resolved by the Commissioners Court of Williamson County, Texas;

The County commits to continue to implement measures previously implemented under the region's 8-Hour Ozone Flex Plan, and to implement additional measures, as appropriate, as a part of the region's Ozone Advance Program Action Plan and directs staff to implement these measures as part of the Action Plan.

Resolved this 19th Day of November, 2013.



County Judge

(Attached list of previously implemented measures and suggested additional measures.)

City of Austin

RESOLUTION NO. 20131024-057

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are nearing violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance program is a voluntary local approach to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local conditions before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, the City of Austin has a long history of participating in regional clean air plans in coordination with regional partners in the Capital Area Council of Governments (CAPCOG); and

WHEREAS, the City of Austin is a member of the Central Texas Clean Air Coalition (CAC) of the CAPCOG; and

WHEREAS, the CAC Board voted to participate in the Ozone Advance program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC Board has requested that its respective members commit to emission reduction measures by October 31, 2013 so that the Action Plan fully represents the intent of the regional entities to comprehensively reduce emissions; **NOW, THEREFORE,**

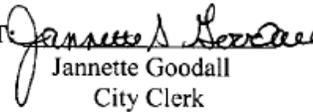
BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

The City Manager is directed to participate in the Capital Area Council of Governments' air quality program's Ozone Advance Program Action Plan and implement the appropriate emission reduction measures.

The City Manager should provide a memo to Council identifying which City of Austin measures will be incorporated into the regional Ozone Advance Program Action Plan by December 16, 2013, including any new fiscal impacts from those measures.

ADOPTED: October 24 , 2013

ATTEST


Jannette Goodall
City Clerk

City of Bastrop

RESOLUTION No. R-2013-13

CITY OF BASTROP TEXAS TO PARTICIPATE IN THE REGIONAL OZONE ADVANCE PROGRAM

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local conditions before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, the City of Bastrop is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHEREAS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BASTROP

1. City of Bastrop commits to continue to implement air quality measures as part of the region's Ozone Advance Program Action Plan.
2. Direct staff to research and work towards the implement the following measures:
 - a. Low Emission Vehicles- City of Bastrop will continue to replace vehicles with low emission vehicles and will explore/apply for grants that will possibly aid in faster replacement.

- b. Vapor Recovery on Fuel Pumps - City of Bastrop will install and replace vapor recovery fuel pumps on all City owned pumps that are currently housed at the Public Works facility.
- c. Enforcement of Heavy-Duty Idling Restrictions – City of Bastrop will look at enforcement of TCEQ’ s restrictions on vehicles with Gross Vehicle Weight Rating (GVWR) of 14000 pounds or more.
- d. Commute Solutions Program – City of Bastrop will work with Bastrop County on implementing/providing opportunities for City and County residents.

AND SO IT IS ORDERED.

PASSED AND ADOPTED ON THIS 22nd DAY OF OCTOBER 2013.

APPROVED:

ATTEST:



Terry Orr
Mayor



Elizabeth Minerva Lopez
City Secretary

City of Cedar Park

RESOLUTION NO. R10.13.10.03.F1

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CEDAR PARK, TEXAS, SUPPORTING THE OZONE ADVANCE PROGRAM AND IMPLEMENTING VOLUNTARY POLLUTION CONTROL MEASURES; FINDING AND DETERMINING THAT THE MEETING AT WHICH THIS RESOLUTION IS PASSED WAS NOTICED AND IS OPEN TO THE PUBLIC AS REQUIRED BY LAW.

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance Program (OAP) would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, the City of Cedar Park is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Council of Governments; and

WHEREAS, the CAC has agreed to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CEDAR PARK, TEXAS:

SECTION 1. The City commits to implement an additional list of clean air measures as part of the region's Ozone Advance Action Plan:

A. Business Evaluation of Fleet Usage: periodically evaluate and improve the efficiency of the jurisdiction's fleet usage, focusing on using the cleanest and cost effective vehicle appropriate for the jobs, consolidating trips, and in general, setting policies for fleet usage that reduce nitric oxide / nitrogen dioxide (NOx) emissions.

B. Commit to applying for grant funding, when available and appropriate, to retrofit, repower, or replace older diesel vehicles and equipment owned and operated by the jurisdiction.

C. Re-commit to enforcement of heavy duty idling restrictions, adopt a written protocol for implementation, and track compliance.

D. Implement an Ozone Action Day program for the organization. The program could include, for example, an employee and community notification system, the use of flexible schedules, or postponing nonessential use of vehicles and equipment.

E. Commit to participate in regional measures such as the CAC.

F. Annually track and report to CAPCOG for inclusion in an annual OAP report and performance evaluation of vehicle and equipment usage, fuel consumption, and other details that may be used to determine the performance of these locally adopted measures.

SECTION 2. That should the Texas Commission on Environmental Quality, and/or the United States Environmental Protection Agency mandate controls or restrictions regarding air quality that differ from the voluntary measures in Section 1, those State and/or Federal regulations shall also suspend the voluntary measures listed Section 1.

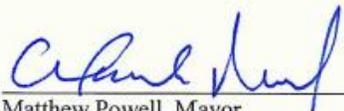
SECTION 3. That it is hereby officially found and determined that the meeting at which this resolution is passed is open to the public and that public notice of the time, place, and purpose of said meeting was given as required by law.

PASSED AND APPROVED this 3RD day of October, 2013.

CITY OF CEDAR PARK, TEXAS

ATTEST:


LeAnn M. Quinn, TRMC
City Secretary


Matthew Powell, Mayor

APPROVED AS TO FORM
AND CONTENT:


Charles W. Rowland, City Attorney



RESOLUTION NO. R10.13.10.03.F1

City of Elgin

RESOLUTION NO. 2013-11-19-15

WHERE AS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHERE AS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHERE AS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHERE AS, the City of Elgin is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHERE AS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013;

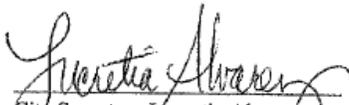
NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ELGIN

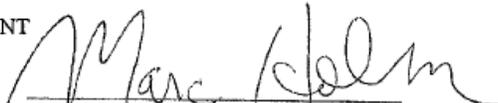
The City commits to continue to implement the measures listed below that were implemented under the region's 8-Hour Ozone Flex Plan, and notes that these measures will be part of the region's Ozone Advance Program Action Plan:

Direct Deposit for employees paychecks, E government – ability to pay bills online and or with bank draft, energy conservation, expedited permitting for missed use or infill development, fuel vehicles in the evening, open burning restrictions, ozone watch and warning day public education and notification programs, paving unpaved roads, transit oriented development district, tree planting annually, vapor recovery fuel programs, and regular vehicle maintenance for city vehicles.

Passed and adopted at a special meeting of the City Council of the City of Elgin held on November 19, 2013 by the following vote.

7 AYES 0 NAYES 2 ABSENT


City Secretary Lucretia Alvarez


Mayor Marc Holm

City of Georgetown

RESOLUTION NO. 11213-N

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GEORGETOWN, TEXAS, SUPPORTING THE U.S ENVIRONMENTAL PROTECTION AGENCY'S NATIONAL INITIATIVE, OZONE ADVANCE, THROUGH MEMBERSHIP IN THE CLEAN AIR COALITION AND PARTICIPATION IN THEIR GOAL TO FACILITATE A VOLUNTARY EMISSION-REDUCTION PLAN, TO BE COMPLETED THIS YEAR.

WHEREAS, the City of Georgetown geographically falls within the Austin-Round Rock Metropolitan Statistical Area (MSA,) which includes Bastrop, Caldwell, Hays, Travis and Williamson Counties; and

WHEREAS, the City of Georgetown acknowledges that in 2012 the Austin-Round Rock MSA was within 2 ppb of being in violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone, as established by the Environmental Protection Agency; and

WHEREAS, the City of Georgetown is a member of the Capital Area Council of Government's Clean Air Coalition, which actively sponsors the Ozone Advance Program to achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone, before air quality violations occur or before Federal measures are mandated; and

WHEREAS, the Clean Air Coalition has agreed to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013.

WHEREAS, the Clean Air Coalition has requested that its members commit to specific emission control measures, through resolution, by November 15, 2013, as a part of the Action Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GEORGETOWN, TEXAS, THAT:

SECTION 1: The City of Georgetown commits to maintain its current list of emission control measures as part of the Clean Air Coalition's Action Plan, as detailed in Attachment A.

SECTION 2: This Resolution shall be effective upon approval by the City Council of the City of Georgetown. The Mayor is hereby authorized to execute, and the City Secretary to attest thereto this resolution on behalf of the City of Georgetown.

RESOLVED this 12 day of November, 2013.

ATTEST:


Jessica Brettle, City Secretary

THE CITY OF GEORGETOWN


George Carver, Mayor

APPROVED AS TO FORM:


Bridget Chapman, City Attorney

Res # 11213-N

City of Hutto

RESOLUTION NO. R-13-11-21-12A1

A RESOLUTION AUTHORIZING THE MAYOR OF HUTTO TO IMPLEMENT THE OZONE ADVANCE PROGRAM ACTION PLAN MEASURES IDENTIFIED IN EXHIBIT "A", ATTACHED AND INCORPORATED HEREIN; IN THE CITY OF HUTTO, WILLIAMSON COUNTY, TEXAS.

WHEREAS, the Local Governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHEREAS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHEREAS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHEREAS, the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHEREAS, the CAC has requested that jurisdictions consider committing to emission reduction measures as part of this Action Plan by November 22, 2013; and

WHEREAS, the City of Hutto formally requests full membership in the Central Texas Clean Air Coalition (CAC) of the Capital Area Council of Governments; and

WHEREAS, the City of Hutto commits to implement the attached list of measures, identified in Exhibit "A", attached and incorporated herein, as part of the region's Ozone Advance Program Action Plan and directs staff to implement these measures as part of the Action Plan;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HUTTO, TEXAS:

That the Hutto City Council hereby approves the resolution to authorize the Mayor of Hutto to implement the Ozone Advance Program Action Plan measures identified in Exhibit "A", a copy of same being attached hereto as "Exhibit A" and incorporated herein for all purposes.

RESOLVED this 21st day of November, 2013.

CITY OF HUTTO, TEXAS


Debbie Holland, Mayor

ATTEST:

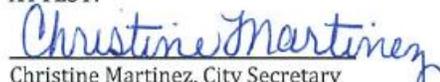

Christine Martinez, City Secretary



Exhibit A

1. Implement a no-idle policy for vehicles in excess of 14,000 pounds excluding any public safety vehicles or vehicles being used during utility emergencies;
2. Implement direct deposit banking for employees;
3. Encourage sustainable development through green building programs, and codes and ordinances that encourage or require a more pedestrian-friendly environment;
4. Establish a commuter trip reduction program for City employees, and encourage local employers to implement commuter trip reduction programs;
5. Implement an Ozone Action Day program for the organization;
6. Participate in regional emission reduction measures;
7. Annually track and report to CAPCOG for inclusion in an annual OAP report and performance evaluation:
 - Vehicle and equipment usage,
 - Electricity and gas usage,
 - Contracted construction and landscaping work, and
 - Details on performance of locally adopted measures.

City of Lockhart

RESOLUTION NO. 2013-11

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LOCKHART, TEXAS:

WHERE AS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHERE AS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHERE AS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHERE AS, the City of Lockhart is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHERE AS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHERE AS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LOCKHART THAT:

The City of Lockhart commits to continue to implement the attached list of measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement the following measures as part of the region's Ozone Advance Program Action Plan (indicate with a check or yes/no) and directs staff to implement these measures as part of the Action Plan.

Approved and passed this the 29th day of October, 2013.



City of Lockhart:

Lew White

Lew White, Mayor

Approved as to form:

Peter Gruning

Peter Gruning, City Attorney

Attest:

Connie Rodriguez

Connie A. Rodriguez, TRMC

City Secretary

City of Luling

Resolution 2013-R-10

Whereas, the local government within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

Whereas, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

Whereas, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

Whereas, the City of Luling is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

Whereas, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

Whereas, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LULING, TEXAS

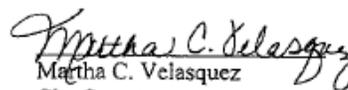
The City of Luling commits to continue to implement the attached list of measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement the following measures as part of the region's Ozone Advance Program Action Plan (indicate with a check or yes/no) and directs staff to implement these measures as part of the Action Plan:

(ATTACH LIST OF MEASURES THE JURISDICTION IS COMMITTING TO IMPLEMENT)

Passed and approved this 14 day of November, 2013.

Attest: _____


Mike Hendricks, Mayor
City of Luling


Martha C. Velasquez
City Secretary

City of Round Rock

RESOLUTION NO. R-13-10-24-F9

WHEREAS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they have periodically monitored high ozone values close to exceeding the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone, and may therefore be subject to nonattainment designation by the Environmental Protection Agency (EPA) if exceedingly high ozone values are monitored in the future; and

WHEREAS, on February 14, 2008, the City pursuant to Resolution No. R-08-02-14-9B1 executed an Interlocal Memorandum of Agreement for entry into a voluntary 8-hour Ozone Flex Program with other local governments in the MSA; and

WHEREAS, the 8-hour Ozone Flex Program expires on December 31, 2013; and

WHEREAS, the City desires to continue implementing measures to maintain compliance with the ozone NAAQS; and

WHEREAS, the EPA has reviewed and updated the 8-hour Ozone Flex Program, hereinafter referred to as the Ozone Advance Program; and

WHEREAS, the City of Round, Texas is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHEREAS, the CAC has committed to submit a new Action Plan under the Ozone Advance Program by December 31, 2013; and

WHEREAS, the Ozone Advance Program Action Plan will continue to achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

0112.1304.00264824/s2

WHEREAS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; Now Therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF ROUND ROCK, TEXAS,

That the City of Round Rock commits to continue to implement the measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement measures described in the CAC Advisory Committee Ozone Advance Plan Recommendations (Exhibit "A") and the list of Ozone Advance Action Plan Measures (Exhibit "B") as part of the region's Ozone Advance Program Action Plan, and directs staff to implement these measures as part of the Action Plan.

The City Council hereby finds and declares that written notice of the date, hour, place and subject of the meeting at which this Resolution was adopted was posted and that such meeting was open to the public as required by law at all times during which this Resolution and the subject matter hereof were discussed, considered and formally acted upon, all as required by the Open Meetings Act, Chapter 551, Texas Government Code, as amended.

RESOLVED this 24th day of October, 2013.



ALAN MCGRAW, Mayor
City of Round Rock, Texas

ATTEST:



SARA L. WHITE, City Clerk

City of San Marcos

RESOLUTION 2013-198R

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN MARCOS, TEXAS AUTHORIZING THE IMPLEMENTATION OF MEASURES UNDER A REGIONAL OZONE ADVANCE PROGRAM ACTION PLAN TO MEET NATIONAL AMBIENT AIR QUALITY STANDARDS ; AND DECLARING AN EFFECTIVE DATE.

RECITALS:

1. The local governments within the Austin/Round Rock/San Marcos Metropolitan Statistical Area, including the counties of Bastrop, Caldwell, Hays, Travis and Williamson, recognize that they have periodically monitored high ozone values close to exceeding the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone, and may therefore be subject to nonattainment designation by the Environmental Protection Agency (EPA) if high ozone values are monitored in the future.
2. The Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS.
3. An Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local conditions before air quality standard violations occur or before Federal measures are mandated.
4. The City of San Marcos is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments.
5. The CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013.
6. The CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SAN MARCOS, TEXAS:

PART 1. That the City of San Marcos commits to continue to implement the measures that were implemented under the region's 8-Hour Ozone Flex Plan, listed in Attachment A and to also implement the following measures listed in Attachment B as part of the region's Ozone Advance Program Action Plan, and directs staff to implement these measures as part of the Action Plan.

PART 2. It is hereby officially found and determined that the meeting at which this Resolution is passed is open to the public and that public notice of the time, place and purpose

of said meeting was given as required by law.

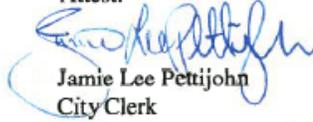
PART 3. This Resolution shall be in full force and effect immediately from and after its passage.

ADOPTED on December 17, 2013.



Daniel Guerrero
Mayor

Attest:



Jamie Lee Pettijohn
City Clerk

CITY OF SAN MARCOS OZONE ADVANCE RESOLUTION NO. _____ ATTACHMENT A

	Measure Description
City of San Marcos 8-03 Flex Measure Continued under Ozone Advance	Commit to encouraging the expanded use of alternative fuels and alternative fuel vehicles. To qualify as an alternative fuel vehicle, the vehicle must operate 75% of the time on one of the federal Energy Policy Act fuels. Approved alternative fuels are compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), electricity, methanol, ethanol, and biodiesel (at a minimum 20% mix). Alternative fuels reduce NOx and VOCs at varying levels and are an appropriate strategy for reducing or even eliminating emissions.
Business Evaluation of Fleet Usage, Including Operations and Right-Sizing	Evaluate and improve the efficiency of fleet usage, including using alternative or clean fueled vehicles, using the cleanest vehicle appropriate for the job, consolidating and coordinating trips etc.
Commuter Solutions Program	Encourage and provide tools to implement selected commute VMT reduction programs (e.g. Teleworking, compressed work week, flextime)The Commute Solutions program provides information and tools to implement these programs.
Commuter Solutions Program: Compressed Work Week	
Commuter Solutions Program: Flexible Work Schedule	
Direct Deposit	Offer employees direct deposit, potentially saving at least one vehicle errand per pay period.
Energy Conservation/Demand Management Measures	Promote energy efficiency measures. These various efficiency measures when combined have the potential to add up to significant energy savings and emission reductions thereby contributing to the overall goal of clean air for Texas. Energy demand management programs may offer incentives to commercial and residential customers for installation of energy efficient appliances and technologies.
Enforcement of Heavy-Duty Idling Restrictions	This measure limits idling of gasoline and diesel-powered engines in heavy-duty motor vehicles (HDV) 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 or has passed a city ordinance to restrict HDV idling.
Ozone Action Day Employee Education Program	Implement an employee ozone education program regarding impacts on sensitive populations to high ozone levels and actions that individuals can take to lessen contributions to high ozone.
Ozone Action Day Notification Program	Notification of employees of ozone action days the day before and encourage employees to voluntarily reduce emissions on predicted high-ozone days by taking any of the recommended actions listed in the notification.
Resource Conservation	Expand and quantify ongoing resource conservation programs (materials recycling, water and energy conservation, etc.).
TxLED* (for any biodiesel)	If a biodiesel fuel blend is used for fueling city vehicles, specifications to fuel supplier will require that approved additive be mixed with the fuel to result in blended fuel gives 100% of TxLED NOx emission reduction credit.

CITY OF SAN MARCOS OZONE ADVANCE RESOLUTION NO. _____ ATTACHMENT A

City of San Marcos 8-03 Flex Measure Continued under Ozone Advance	Measure Description
Tree Planting	Implement landscaping policies to require additional urban tree planting. Reforestation improves air quality and energy efficiency.
Vehicle Maintenance	In addition to alternative fuels and alternative fuel vehicles, participants have incorporated regular maintenance in a manner that will minimize emissions, into their fleet operation policies.

CITY OF SAN MARCOS OZONE ADVANCE RESOLUTION NO. _____ ATTACHMENT B

City of San Marcos Additional Measures Implemented under Ozone Advance	Measure Description
e-Government and/or Available Locations	Provide web-based services, both for information and transactions, and/or multiple locations for payments, etc., Reduces VMT and associated emissions.
Apply for TERP of DERA funding as Appropriate	Commit to applying for TERP and/or DERA funding when available to retrofit, repower, or replace older diesel vehicles and equipment owned and operated by the jurisdiction. Regional partners can assist jurisdictions in preparing these applications.
Other Measures	

City of Sunset Valley



RESOLUTION NO. 102213

WHERE AS, the local governments within the Austin-Round Rock Metropolitan Statistical Area (MSA), which consists of Bastrop, Caldwell, Hays, Travis, and Williamson Counties, recognize that they are near-violation of the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone; and

WHERE AS, the Ozone Advance Program is a voluntary local approach to ozone attainment whose purpose is to encourage early emission reduction that will help keep the area in attainment of the ozone NAAQS; and

WHERE AS, an Action Plan under the Ozone Advance Program would achieve air quality and public health benefits by implementing early voluntary pollution control measures for ozone tailored to local condition before air quality standard violations occur or before Federal measures are mandated; and

WHERE AS, the City of Sunset Valley located in Travis County is a member of the Central Texas Clean Air Coalition (CAC) of the Capital Area of Governments; and

WHERE AS, the CAC has signed up to participate in the Ozone Advance Program and has committed to submit an Action Plan by December 31, 2013; and

WHERE AS, the CAC has requested that its members consider committing to emission reduction measures as part of this Action Plan by October 31, 2013; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUNSET VALLEY, TEXAS:

Section 1. The City of Sunset Valley commits to continue to implement the attached list of measures that were implemented under the region's 8-Hour Ozone Flex Plan, and to also implement the following measures as part of the region's Ozone Advance Program Action Plan and direct staff to implement these measures as part of the Action Plan:

- | | |
|---|---|
| Alternative Fuel Vehicles | Enforcement of Heavy-Duty Idling Restrictions |
| Commuter Solutions Program: Compressed Work Week | Fueling Vehicles in the Evening |
| Commuter Solutions Program: Flexible Work Schedule | Limit vehicle idling to 5 minutes or less |
| Commuter Solutions Program: Bicycle and Pedestrian Facilities | Low VOC Roadway Striping |
| Contractor Provisions for High Ozone Days | Open Burning Restrictions |
| Drive-Through Facilities on Ozone Watch Days | Tree Planting |
| e-Government and/or Available Locations | |

Section 2. Effective Date.
This resolution shall take effect on the date indicated it is passed and approved below.

PASSED AND APPROVED this 22nd day of October 2013.



Rose Cardona
Mayor

ATTEST:


Rae Gene Greenough
City Secretary

Appendix B: State Measures Applicable to Local Sources

A number of state-adopted NO_x and VOC emission reduction measures that are part of the State Implementation Plan are applicable to the Austin-Round Rock MSA. This appendix provides a summary of each of these measures.

Mobile Sources

Vehicle Emissions Inspection and Maintenance Program

There is an inspection and maintenance program in place in Travis and Williamson Counties applicable to gasoline-powered vehicles 2-24 years old. Vehicles with model years 1995 and older are subjected to a two-speed idle (TSI) test, and vehicles with model years 1996 and newer are subject to on-board diagnostic (OBD) testing. Vehicles that do not pass inspection are required to get repaired and re-tested until they pass inspection. Affected vehicles are required to pass an emissions inspection as a condition of registration. The regulations applicable to Travis and Williamson Counties are found in Title 30 of the Texas Administrative Code, Part 1, Chapter 114, Subchapter C, Division 3.

The emissions inspection and maintenance program also includes a remote sensing component in order to identify high emitting vehicles to call in for out-of-cycle testing. Any vehicles that have emissions above certain cutpoints that are registered in Travis and Williamson Counties or in adjacent counties will be required to take an out-of-cycle inspection.

Several types of waivers are available for the testing requirements. The low-mileage waiver is available if a vehicle has failed both an initial test and a retest, has incurred repair costs of at least \$100, has been driven less than 5,000 miles in the last cycle, and is expected to be driven less than 5,000 miles before the next inspection. An individual vehicle waiver is available if a motorist can demonstrate that all reasonable efforts have been taken to bring the vehicle into compliance. To qualify for the individual vehicle waiver, the vehicle must fail an initial test and retest and the motorist must incur repair costs of at least \$600. Time extensions are also available for retesting if a motorist is low-income or if needed parts are temporarily unavailable.

LIRAP

The Low-Income Repair and Retrofit Program, or LIRAP, provides funding for low-income people to repair or replace older vehicles, replace vehicles that fail an emissions test, and repair vehicles that fail an emissions test. Motorists qualifying for replacement assistance can receive \$3,000 towards a car 0-3 model years old, \$3,000 towards a truck 0-2 model years old, and \$3,500 towards a hybrid, electric, or natural gas vehicle 0-3 years old. Replacement vehicles must be certified to at least Tier 2, bin 5 or better, must have an odometer reading of no more than 70,000, and must cost no more than \$35,000 if it is a conventional car or truck or \$45,000 if it is a hybrid, electric, or natural gas vehicle certified to Tier 2, bin 3 or better. Eligible motorists can also receive a voucher for up to \$600 for emissions-related repairs or retrofits under this program. Program rules can be found under Title 30 of the Texas Administrative Code, Part 1, Chapter 114, Subchapter C, Division 2.

Mobile Source Incentive Programs

A variety of mobile source incentive programs are applicable to the entire Austin-Round Rock MSA. These can be found in Title 30 of the Texas Administrative Code, Part 1, Chapter 114, Subchapter K. These include:

- Division 1: On-Road Diesel Purchase or Lease Incentive Program
- Division 2: Light-Duty Vehicle Purchase or Lease Incentive Program
- Division 3: Diesel Emissions Reduction Incentive Program for On-Road and Non-Road Vehicles
 - Replacement
 - Purchase or Lease
 - Emissions-Reducing Retrofits
 - Repower Projects
 - Fuel switching
 - Infrastructure Projects
- Division 4: Texas Clean School Bus Program
 - Oxidation Catalysts <1994
 - Diesel Particulate Filters 1994-1998
 - Emission reduction equipment retrofits
 - Fuel switching
 - Others
- Division 5: Texas Clean Fleet Program
 - 20 or more on-road diesel vehicles being replaced can get grant for alternative fuel or hybrid vehicle;
 - Funding provides up to 80% of replacement costs
 - Heavy-Duty:
 - 80% of replacement costs: <1998 MY
 - 70% of replacement costs: 1988-1997 MY
 - 60% of replacement costs: 1998-2003 MY
 - 50% of replacement costs: >2003 MY
 - Light Duty:
 - 80% of replacement costs: <1994 MY
 - 70% of replacement costs: 1994-2004 MY
 - 60% of replacement costs: >2004 MY
- Division 7: Natural Gas Vehicle Grant Program
 - 60-90% of replacement cost for replacing diesel heavy-duty truck with natural gas heavy-duty truck
 - Must result in a 25% reduction in NO_x compared to vehicle being replaced
- Clean Transportation Triangle Program
 - \$400K for CNG stations
 - \$400K for LNG stations
 - \$600K for stations offering both LNG and CNG

Locally Enforced Heavy Duty Idling Rule

TCEQ provides an option for local jurisdictions to enforce heavy-duty idling restrictions within their jurisdiction using state authority under 30 TAC, Chapter 114, Subchapter J. For jurisdictions like Counties that have no ordinance-writing authority that would enable them to regulate idling, this is the only

option available regulate idling. The rule applies to vehicles with Gross Vehicle Weight Ratings of over 14,000 pounds, with many significant exemptions, including exemptions for idling during a government-mandated rest period, for trucks certified to meet CARB's low-NO_x idle standard, emergency and military vehicles, the use of an engine for mechanical power, and passenger comfort for buses, among others. Jurisdictions that wish to use this rule for enforcement of idling restrictions within their jurisdictions may sign a memorandum of agreement (MOA) with the TCEQ to carry out the restrictions. Idling for trucks is limited to 5 minutes, and idling for buses is limited to 30 minutes for passenger comfort only. Many of the jurisdictions participating in this plan will be enforcing idling restrictions through this rule.

Non-Road Large Spark-Ignition Engines

The TCEQ adopted a rule-making for large, spark-ignition non-road engines under 30 TAC, Chapter 114, Subchapter I. This regulation requires that any model year 2004 or newer non-road, spark-ignition engines rated at 25 horsepower or higher sold in Texas meet the emission limits adopted by the California Air Resources Board (CARB) for such engines.

-CARB regulations for >25 HP for MY 2004 and later

Texas Low-Emissions Diesel (TxLED)

TCEQ regulates diesel fuel under 30 TAC Part 1, Chapter 114: Control of Air Pollution from Motor Vehicles, Subchapter H, Low Emission Fuels, Division 2: Low Emission Diesel Standards. Fuel suppliers must only sell diesel for mobile sources that has no more than 10% aromatic hydrocarbon content by volume and a minimum cetane number of 48, or an alternative formulation that produces equivalent emission reductions. For SIP purposes, TCEQ claims a TxLED NO_x reduction benefit of 4

- 4.8% reduction for 2002 and newer on-road vehicles and for Tier 3 and Tier 4 non-road equipment rated at 50 horsepower or higher; and
- 6.2% reduction for 2001 and older on-road vehicles and for Base, Tier 0, Tier 1, and Tier 2 non-road equipment rated at 50 horsepower or higher.

Low-Reid Vapor Pressure (RVP) Gasoline

TCEQ regulates the Reid Vapor Pressure (RVP) of gasoline under 30 TAC Part 1, Chapter 114: Control of Air Pollution from Motor Vehicles, Subchapter H, Low Emission Fuels, Division 1: Gasoline Volatility. The regulation limits RVP in the Austin-Round Rock MSA and other parts of East Texas to 7.8 pounds per square inch on a gallon basis from June 1 – October 1 for retail facilities and May 1 – October 1 for bulk terminals.

Stationary Sources

Utility Electric Generation in East and Central Texas

Regulations on the emissions rates for utility electric generation in Eastern and Central Texas apply to Bastrop and Travis Counties, and can be found in 30 TAC Chapter 117, Subchapter E, Division 1. The regulation applies to boilers and turbines put into service before December 31, 1995, with an annual heat input of greater than 2.2 million British thermal units (MMBtu) per year, and which sell at least 1/3 of its potential output capacity to a utility distribution system. Applicable emission limits include:

- Gas-Fired Boilers: 0.14 lbs NO_x/MMBTU,
- Gas Turbines: 0.14 lbs/MMBTU if subject to Texas Utilities Code (TUC) §39.264,
- Gas turbines: 0.15 if not subject to TUC,
- Gas-fired steam generator: Opposed-fire: no more than 0.7 lbs NO_x per MMBTU over 2 hours for >600,000 pound of steam per hour
- Gas-fired steam generator: “front-fire”: no more than 0.5 lbs NO_x per MMBTU over 2 hours for >600,000 pounds of steam per hour
- Gas-fired steam generator: “tangential”: no more than 0.25 lbs NO_x per MMBTU over 2 hours for > 600,000 pounds of steam per hour

Cement Kilns

TCEQ regulates cement kilns under 30 TAC Chapter 117, Subchapter E: Multi-Region Combustion Control, Division 2: Cement Kilns. The emissions rate applicable to the preheater-precalsiner kiln in operation at Texas Lehigh in Hays County is 2.8 pounds per ton of clinker produced, although since Texas Lehigh uses a low-NO_x burner, it is not required to meet this requirement, as allowed under 30 TAC 117.3110(d).

Water Heaters, Small Boilers, and Process Heaters

TCEQ regulates NO_x emissions from water heaters, small boilers, and process heaters under 30 TAC Chapter 117, Subchapter E: Multi-Region Combustion Control, Division 3: Water Heaters, Small Boilers, and Process Heaters. This regulation applies to heaters, boilers, and process heaters with a maximum rated capacity of 2.0 MMBTU/hour or less. The applicable emissions rates are the following:

- Type 0: ≤ 75,000 BTU/hour;
 - Manufactured July 1, 2002 – December 31, 2004: 40 ng/J heat output (0.093 lb/MMBTU) or 55 ppm by volume at 3.0% oxygen, dry;
 - Process heaters and boilers manufactured January 1, 2005 and later: 10 ng/J heat output (0.023 lb/MMBTU) or 15 ppm by volume at 3.0% oxygen, dry;
- Type 1: 75,000 BTU/hour - ≤400,000 BTU/hour;
 - Manufactured July 1, 2002 or later: 40 ng/J heat output (0.093 lb/MMBTU) or 55 ppm by volume at 3.0% oxygen, dry;
- Type 2: 400,000 BTU/hour – 2.0 MMBTU/hour;
 - After July 1, 2002: 0.037 lbs/MMBTU heat input or 30 ppm by volume at 3.0% oxygen, dry.

Nitrogenous Fertilizer Manufacturing

TCEQ regulates NO_x emissions from nitrogenous fertilizer manufacturing under 30 TAC Chapter 117, Subchapter F: Acid Manufacturing, Division 3: Nitric Acid Manufacturing – General. There are 2 small establishments with a total of 0-19 employees in the Austin-Round Rock MSA under the corresponding North American Industrial Classification System (NAICS) code (325311), based on data reported in the 2011 County Business Patterns. Emissions are limited to 600 ppm by volume.

Appendix C: TERMS

The following is a comprehensive listing of the TERMS that will be completed within the time frame of this plan, as identified by CAC members and other participating entities. These include 110 specific projects from 9 organizations, including 53 bicycle/pedestrian projects, 42 operational improvement projects, 8 transit projects, and 6 other projects.

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
Bastrop County	Signals along US 290	Elgin	2014	Operational Improvements
Bastrop County	US 290E	Upgrade to 4-lane MAD	Various - 2018	Operational Improvements
Bastrop County	FM 1704	Upgrade w/ shoulders (to facilitate crash management)	2015	Operational Improvements
Bastrop County	SH 71 @ Loop 150	Signal Improvements	2018	Operational Improvements
Bastrop County	FM 1100	Add sidewalks	2014	Bicycle/Pedestrian
CapMetro	MetroRapid Lanes	MetroRapid dedicated lane on Guadalupe and Lavaca Streets in downtown Austin	2014	Transit
CapMetro	MetroBike Shelters	Design and install six MetroBike shelters for protected storage at Metro facilities	2014	Bicycle/Pedestrian
CapMetro	Capital Metro Rails with Trails	Construct enhanced Rails with Trails on Capital Metro's right of way where feasible. The initial trail will connect the Crestview and Highland stations and provide access to the nearby neighborhoods	2014-2018	Bicycle/Pedestrian
CapMetro	Intelligent Transportation System (ITS)	ITS will be a feature of MetroRapid	2013-2015	Transit
CapMetro	Kramer Station	Develop Kramer Station as a TOD	2014-2018	Transit
CapMetro	Transit Facility	Construct an Intermodal Transit Facility in downtown Austin	2016	Transit

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
CapMetro	Bus Acquisition	Purchase lower emission vehicles to replace older, higher-emission vehicles	2014-2108	Transit
CapMetro	Plaza Saltillo TOD	Enhance TOD features with construction of double tracked rail at the southern edge of the CMTA Plaza Saltillo property	2014-2015	Transit
CapMetro	Downtown Austin Transportation Management Association	Support the Downtown Austin Transportation Management Association (DATMA) in its development and implementation of an Individualized Marketing campaign	2014-2018	Other
CapMetro	Environmental and Sustainability Management System (ESMS)	Implement an ISO 14001 certified ESMS at CMTA facilities to improve environmental and sustainability performance through measures such as idling and emission	2014	Transit
CapMetro	Project Connect	Integrated planning process to increase multi-modal, transportation options throughout the Central Texas region	2014-2018	Other
CapMetro	North Corridor	Integrated planning process to increase multi-modal transportation options in the in the north portion of the Capital Metro region	2014-2018	Other
CapMetro	Commute Solutions	Enhanced planning and programming to encourage the increased use of transit and alternative transportation methods among Capital Metro staff, contractors and the community.	2014-2018	Other

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Austin	Northern Walnut Creek	Preliminary Engineering and partial construction for a 10' wide concrete pathway with trail heads and amenities at strategic points along trail	2014	Bicycle/Pedestrian
City of Austin	North Lamar Sidewalks	Build components of ADA compliant sidewalks on North Lamar Blvd from US 183 to Parmer Ln	2014-2018	Bicycle/Pedestrian
City of Austin	Sabine Street Promenade	Construction of sidewalks, bike lanes, and pedestrian amenities to implement a Sabine Street Promenade between 4th and 7th Streets	2017	Bicycle/Pedestrian
City of Austin	Bike Share/Safety Program	First phase of bike share system paired with bicycle safety enforcement program	2013-2014	Bicycle/Pedestrian
City of Austin	MoPac Bicycle and Pedestrian Bridge Phase 1	Construct Phase 1 of Mopac Bicycle and Pedestrian Bridge of Loop 360	2015	Bicycle/Pedestrian
City of Austin	North Acres Park Bike Trail	Construct a shared use path	2014	Bicycle/Pedestrian
City of Austin	New Bicycle Lanes	Install approximately 20 miles of new bicycle lanes per year. Locations to be determined through coordination with routine street maintenance	2014-2018	Bicycle/Pedestrian
City of Austin	New Sidewalk	Install new sidewalk citywide consistent with the Sidewalk Master Plan funded with 2012 ADA Sidewalk Bonds	2014-2018	Bicycle/Pedestrian

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Austin	Travel Time Monitoring Program	Phase I - Deploying travel time data collection equipment along key arterial streets and continuously collect travel time data. Travel times will be used to: (1) influence travel behavior by disseminating traveler information on dynamic message signs and the web; (2) improve traffic flow.	2013-2014	Operational Improvements
City of Austin	Bicycle Signal and Detection Grant	Purchase and install bicycle signals and bicycle detection equipment. Project enhances bicycle environment and safety at signalized intersections which is intended to increase bicycle usage.	2013-2014	Bicycle/Pedestrian
City of Austin	Advanced Intersection Detection for Adaptive Signal Control	Adaptive signal control enables signals to automatically adjust timings to better respond to unexpected changes in traffic conditions (e.g., a freeway incident that diverts traffic to the frontage road signals). Additional detection is needed to implement adaptive signal control. This project deploys detection at signals along I-35 frontage roads and other roadways.	2014-2016	Operational Improvements

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Austin	Advanced Bicycle Detection via Mobile App	This Pilot Project improves bicycle detection at signalized intersections. A cyclist starts a smart phone application (app) prior to beginning their trip. The app communicates with the City's signal system which detects the cyclist at one of the project signals and then turns the signal green to facilitate their crossing. Improved detection enhances the cycling environment and is intended to increase bicycle usage.	2014-2015	Bicycle/Pedestrian
City of Austin	Pedestrian Enhancement Program (Arterial Operations)	Deploy traffic signals, pedestrian hybrid beacons, pedestrian countdown timers, enhanced pedestrian push buttons and accessible pedestrian signals. These enhancements improve pedestrian mobility which is intended to increase walking as a transportation choice.	2013-2016	Bicycle/Pedestrian
CTRMA	Loop 1 Managed Lanes (phase 1)	Construction of 1 northbound and 1 southbound managed lane from .1 mile north of FM 734 to Cesar Chavez Interchange	2015	Operational Improvements
CTRMA	HERO	Extend IH 35 corridor Highway Emergency Response Operator program for three additional years	2014-2016	Operational Improvements

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
CTRMA	Manor Expressway	Construct 5 miles of a 10-foot shared use path. Also, construct Intelligent Transportation System (ITS) consisting of 2 dynamic message signs (DMS), 8 closed circuit televisions (CCTV), and 32 radar vehicle sensing devices.	2014	Bicycle/Pedestrian
City of Lakeway	Traffic signal	Install new signal, RR 620 at Glen Heather	2015	Operational Improvements
City of Pflugerville	Left-turn lane	Construct additional left-turn lane on RR 620 NB at Lohmans Crossing	2015	Operational Improvements
City of Pflugerville	Gilleland Creek Trail Gap	Construct new multi-use trail segment parallel to Gilleland Creek between Heatherwilde Blvd and Swenson Farm Blvd (TPWD funding)	2015	Bicycle/Pedestrian
City of Round Rock	Traffic signals	Red Bud @ Mickey Mantle	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	Gattis @ Rusk Road	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	Hidden Valley @ Sunrise	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	University @ Tera Vista Club	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	University @ Eagles Nest	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	University @ Sandy Brook	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	Mays @ Mays Crossing	2014-2018	Operational Improvements
City of Round Rock	Traffic signals	Greenlawn @ Pflugerville Parkway	2014-2018	Operational Improvements

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Round Rock	Traffic signals	A.W. Grimes @ Creek Ridge	2014-2018	Operational Improvements
City of Round Rock	RM 620 Safety Improvements	Grade separation of the UPRR RR with related safety and access improvements. Includes sidewalks and bicycle facilities. From Deepwood Drive to IH 35	2018	Operational Improvements
City of Round Rock	Right turn lanes	Red Bud @ Forest Creek, NB to EB	2014-2016	Operational Improvements
City of Round Rock	Right turn lanes	Red Bud @ Forest Creek, SB to WB	2014-2016	Operational Improvements
City of Round Rock	Right turn lanes	Red Bud @ Gattis, SB to WB	2014-2016	Operational Improvements
City of Round Rock	Right turn lanes	University @ Sunrise, EB to SB	2014-2016	Operational Improvements
City of Round Rock	Right turn lanes	Old Settlers Boulevard @ A.W. Grimes, EB to SB	2014-2016	Operational Improvements
City of Round Rock	Right turn lanes	S. Mays Street @ Gattis School Road	2014-2016	Operational Improvements
City of Round Rock	Left turn lanes	Gattis School Road @ Rusk Road	2014	Operational Improvements
City of Round Rock	Left turn lanes	Greenlawn @ Gattis School Road	2014	Operational Improvements
City of Round Rock	Signal Timing	Louis Henna corridor	2014-2015	Operational Improvements
City of Round Rock	Signal Timing	Gattis School Road corridor	2014-2015	Operational Improvements
City of Round Rock	Signal Timing	University corridor	2014-2015	Operational Improvements

Austin-Round Rock Metropolitan Statistical Area Ozone Advance Program Action Plan, 12/31/2013

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Round Rock	Signal Timing	Old Settlers Boulevard corridor	2014-2015	Operational Improvements
City of Round Rock	Old Settlers Boulevard turn lanes	Provide right and left turn lanes, between Chisholm Trail Road and Mays Street on FM 3406	2014	Operational Improvements
City of Round Rock	Kenney Fort Boulevard	Joe DiMaggio to Forest Creek Boulevard, six lane divided arterial on a new location. Provides a grade separated crossing of the UPRR and US 79. Includes bicycle and pedestrian facilities.	2014	Bicycle/Pedestrian
City of Round Rock	IH 35 Ramp reversals	FM 3406 to US 79, relocate ramps to urban "X" type configuration	2016	Operational Improvements
City of Round Rock	Reverse commute bus route	Implement a reverse commute bus route between Tech Ridge and Sears Teleserve	2014	Transit
City of Round Rock	Advanced Traffic Management System	Implement ITS infrastructure in phases across the City to better manage incidents and improve traffic flow	2015-2016	Operational Improvements
City of Round Rock	Sidewalk Gap Program	Old Settlers Boulevard	2014	Bicycle/Pedestrian
City of Round Rock	Sidewalk Gap Program	Sunrise Road	2014	Bicycle/Pedestrian
City of Round Rock	Sidewalk Gap Program	US 79	2014	Bicycle/Pedestrian
City of Round Rock	Sidewalk Gap Program	Donnell Drive	2014	Bicycle/Pedestrian
City of Round Rock	Sidewalk Gap Program	Joe DiMaggio	2014	Bicycle/Pedestrian

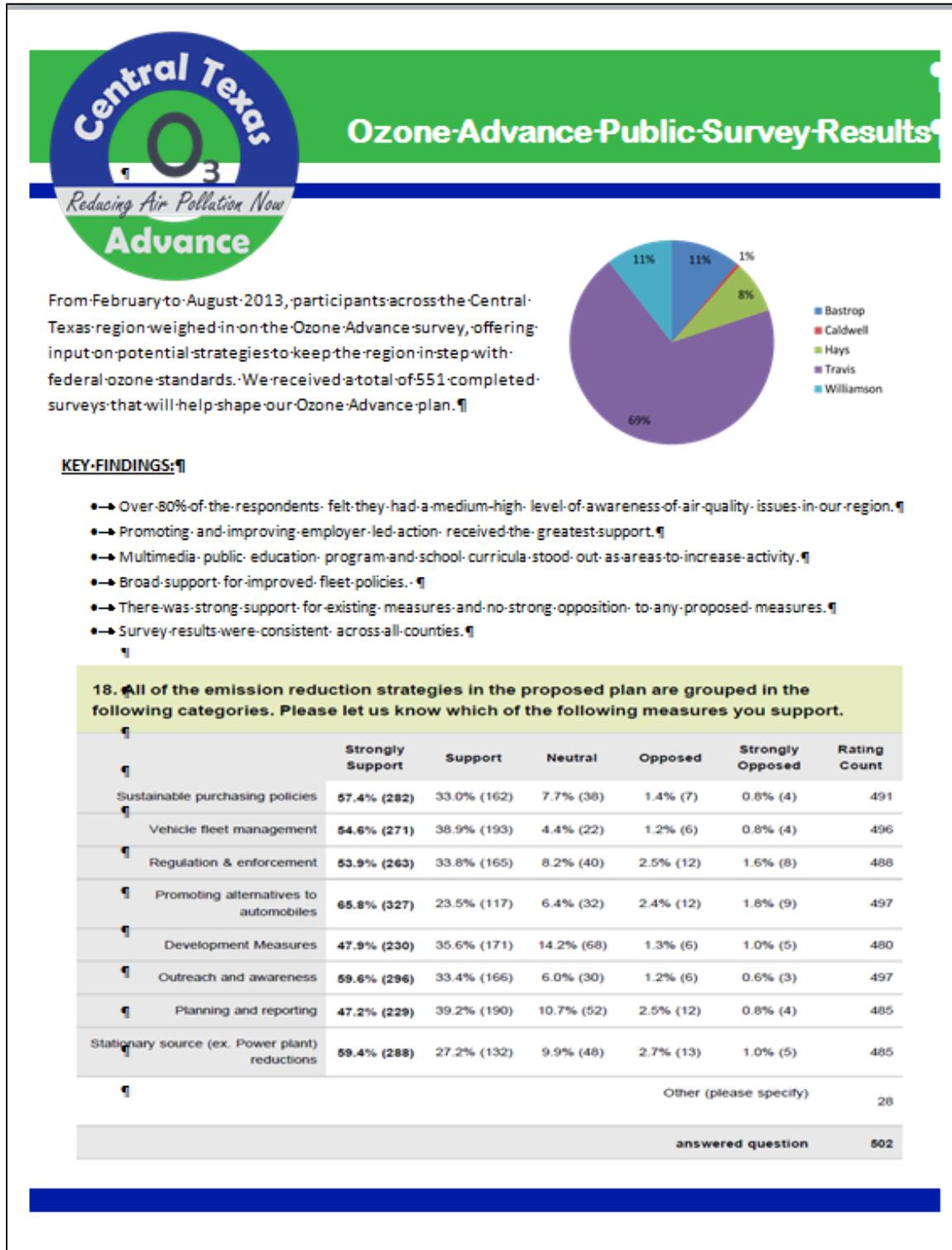
Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
City of Round Rock	Chisholm Trail Road	Widen existing 2 lane rural road to a 4 lane divided arterial, with curb and gutter and sidewalks. Between FM 3406 and Sam Bass Road	2014	Bicycle/Pedestrian
City of Round Rock	Downtown Improvements	Improve streetscapes by rebuilding the roadways to include 10-20 foot wide sidewalks along all downtown streets.	2014-2017	Bicycle/Pedestrian
Travis County	Gilbert Road	5' bike lane and 6' sidewalk constructed with new 2-lane collector road between FM 969 and Westall Street	2014	Bicycle/Pedestrian
Travis County	Hunters Bend Road Sidewalk	New 6' sidewalk between Austin's Colony Boulevard and Red Tails Dr.	2014	Bicycle/Pedestrian
Travis County	Tuscany Way South	5' bike lanes and 6' sidewalks constructed with new 4-lane divided arterial between US 290 E and Springdale Road	2015	Bicycle/Pedestrian
Travis County	Wells Branch Parkway	5' bike lanes and 6' sidewalks constructed with new 4-lane divided arterial between Immanuel Road and Cameron Road	2016	Bicycle/Pedestrian
Travis County	Lost Creek Blvd. Sidewalk	New 6' sidewalks from Quaker Ridge Drive to Barton Creek	2014	Bicycle/Pedestrian
Travis County	US 290 at Circle Drive	Align intersection of Spring Valley and Circle Drive at US 290 W, add right turn lanes on Spring Valley Road and Circle Drive	2014	Operational Improvements
Travis County	Flint Rock Road	Add wide outer shoulder to accommodate bicycles with widening of existing travel lanes	2016	Bicycle/Pedestrian

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
Travis County	Bee Creek Road	5' bike lanes and 6' sidewalks constructed with widening to 4-lane divided arterial from SH 71 to Highland Blvd.	2014	Bicycle/Pedestrian
Travis County	El Rey Blvd. sidewalk	New 6' sidewalk from US 290 to Espanola Trail	2014	Bicycle/Pedestrian
Travis County	Slaughter Lane	5' bike lanes and 6' sidewalks on new 4-lane divided arterial from Old Lockhart Rd. to Vertex Blvd	2014	Bicycle/Pedestrian
Travis County	Slaughter Lane	5' bike lane and 6' sidewalk on new 2-lane arterial from Vertex Blvd. to Thaxton Road	2015	Bicycle/Pedestrian
Travis County	Cameron Road	5' bike lanes and 6' sidewalks with widening to 4-lane divided arterial from Howard Lane to SH 130	2017	Bicycle/Pedestrian
Travis County	Braker Lane	5' bike lanes and 6' sidewalks on new 4-lane divided arterial from FM 973 to Taylor Lane	2016	Bicycle/Pedestrian
Travis County	Frate Barker Road	5' bike lanes and 6' sidewalks with widening to 4-lane arterial from Brodie Lane to Manchaca Road	2016	Bicycle/Pedestrian
Travis County	Howard Lane	5' bike lanes and 6' sidewalks on new 4-lane divided arterial from Cameron Road to SH 130	2016	Bicycle/Pedestrian
Travis County	Parmer Lane	5' bike lanes and 6' sidewalks on new 4-lane divided arterial from Austin-Manor Railroad to SH 130	2016	Bicycle/Pedestrian
TxDOT	US 290: 372 ft west of Joe Tanner Ln to 585 ft east of Joe Tanner Ln	Innovative intersection improvement	2014	Operational Improvements

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
TxDOT	US 290: 800 ft east of Joe Tanner Ln to 372 ft west of Joe Tanner Ln	Innovative intersection improvement	2014	Operational Improvements
TxDOT	SH 21 at intersection of RM 150	Construct left turn lane on SH 21 NB	2014	Operational Improvements
TxDOT	Hays County: various locations	Statewide curb ramp program	2014	Bicycle/Pedestrian
TxDOT	Travis County: various locations	Statewide curb ramp program	2014	Bicycle/Pedestrian
TxDOT	Downtown Austin Transp Mgt Assoc	Various Locations in MPO area	2013-2014	Other
TxDOT	Manchaca Rd from Frate Barker Ln to Brodie Ln	Upgrade existing 2 lane to 4 Ln arterial: Includes sidewalks	2015	Bicycle/Pedestrian
TxDOT	Various Locations	Bike share/Bike Safety Program	2015	Bicycle/Pedestrian
TxDOT	Brushy Creek Regional Trail: from 2500' E of Arterial A to AW Grimes	Construction Trail	2015	Bicycle/Pedestrian
TxDOT	RM 1431: on Bagdad Rd from Kettering DR	Widen, add LTLS, sidewalks and lighting	2015	Bicycle/Pedestrian
TxDOT	Safe Routes to School: Various locations in Smithville	Ped path, sidewalks, and school zone signs	2014	Bicycle/Pedestrian
TxDOT	Safe Routes to School: Various locations in Smithville	Ped path, sidewalks, and school zone signs	2015	Bicycle/Pedestrian
TxDOT	Holland St: on N LBJ dr in San Marcos/Sessom Dr	Intersection Improvements, includes sidewalks	2015	Bicycle/Pedestrian
TxDOT	City of Buda: Safe Routes to School, various locations	Sidewalks, bike paths, and ped bridge	2015	Bicycle/Pedestrian
TxDOT	Loop 1: .05 miles south of Lake Austin Blvd to .07 miles north of Lake Austin Blvd	Extend Johnson Creek Bike/Ped Trail	2014	Bicycle/Pedestrian

Sponsor	Project Name	Project Description	Year of Implementation	Project Categorization
TxDOT	US 183: Pecan St to FM 20	reconstruct to 5 lane urban section, including sidewalks	2015	Bicycle/Pedestrian
TxDOT	US 183: FM 20 to .274 miles south of MLK/Industrial Blvd	reconstruct to 5 lane urban section, including sidewalks	2015	Bicycle/Pedestrian
TxDOT	SH 80: Long St to Clarewood Dr	Intersection Improvements	2014	Operational Improvements
TxDOT	Loop 82: IH 35 NB frontage rd to .40 miles west of NBFR	Intersection Improvements	2014	Operational Improvements
TxDOT	CS: IH 35 NB frontage rd to .12 miles east of IH 35 NBFR	Intersection Improvements	2014	Operational Improvements
TxDOT	FM 685: US 79 to SH 130	Reconstruct to 4 lane divided roadway with bridge structure, including sidewalks	2015	Bicycle/Pedestrian
TxDOT	RM 1431: FM 734 to CR 175	Widen to 6 lane urban roadway/add sidewalks	2015	Bicycle/Pedestrian
TxDOT	Loop 1: north of Loop 360 to north of US 290	add bicycle bridge	2015	Operational Improvements

Appendix D: Summary Ozone Advance Survey Results



Vehicle-Fleet-Management¶

87% of respondents agreed that cleaner fleets are an acceptable expense for businesses and governments to protect air quality. 56% of respondents strongly support business evaluation and fleet rightsizing. 52% of respondents strongly support installation of on-board idle reduction technologies. ¶

Development-Measures¶

All development measures were strongly supported, with each scoring over 55%. 79% of respondents strongly support measures to shade/cool developed areas. 57% of respondents strongly support development policies to encourage reduction of vehicle miles traveled. ¶

Outreach-&-Awareness¶

All education and outreach options scored at or above 55%, except collecting individual pledges which scored 20%. 73% of respondents agree that local pollution reduction certification programs would improve air quality awareness. 71% of respondents agree that multimedia public education programs will improve air quality awareness. ¶

Sustainable-Purchasing-Policies¶

All purchasing policies were strongly supported, with each scoring over 60%. 70% of respondents strongly support buying lower emissions vehicles. 65% of respondents strongly support buying local. ¶

Regulation-&-Enforcement¶

All suggested regulations were strongly supported, with each scoring over 43%. 69% of respondents strongly support restricting open burning on high ozone days. 57% of respondents strongly support both enhanced idling restrictions and requiring large employers to provide commute reduction programs. ¶

Planning-&-Reporting¶

48% of respondents strongly support emission inventories for governmental operations. 36% of respondents strongly support reporting requirements for non-road equipment. 33% of respondents support reporting requirements for small stationary sources. ¶

Stationary-Source-(e.g.,Power-Plant-Reductions)¶

All stationary pollutant source options scored above 74%. 87% of respondents agree with implementing energy efficiency measures. 85% of respondents support local renewable energy generation. ¶

Promoting-Alternatives-to-Automobiles¶

77% of respondents are highly likely to maintain their vehicles to improve air quality. 74% of respondents are highly likely to conserve energy. 69% of respondents are highly likely to reduce water usage. ¶

Appendix E: Emissions Inventory Assumptions

The emissions inventory data presented in Section 2.2.5, which was used in the modeling described in section 2.2.4 are based on a number of different sources of information. The documentation of these inventories can be found in in CAPCOG's *2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties* (November 2013). The table below shows a summary of the data sources and assumptions:

Source Type	Key Parameters and Data Sources	Documentation
Point Sources – Electric Generating Units (EGUs)	Average daily NO _x emissions for June – August 2012. CO and VOC emissions based on the NO _x to CO and NO _x to VOC ratios in TCEQ's 2011 Point Source Emissions Inventory.	U.S. EPA. <i>Air Markets Program Data</i> . http://ampd.epa.gov/ampd/ CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Point Sources – Non-EGUs	TCEQ 2011 Point Source Inventory. University of Texas's Hal Weaver Power Plant emissions based on 2012 fuel consumption for June – August and 2011 emissions rate calculated from TCEQ Point Source Inventory.	TCEQ. Data extract from State of Texas Air Reporting System (STARS) on April 30, 2013. TCEQ/OA/AQD/EAS/rg, EAS 04.23a.2013,2011 Austin Area Ozone Emissions.xlsx. CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Area Sources – Industrial Fuel Combustion	Used employee-based fuel consumption ratios for manufacturing establishments based on the 2010 Manufacturing Energy Consumption Survey combined with local manufacturing employment data and each county's allocated share of fuel consumption by stationary equipment at farms.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.

Source Type	Key Parameters and Data Sources	Documentation
Area Sources – Commercial Fuel Combustion	Used updated fuel consumption and employment data following methods EPA used to calculate the 2008 and 2011 NEIs, with extra non-road subtractions to account for forklifts.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Area Sources – Oil and Gas	Used emissions estimation methods developed by ERG using updated activity data for 2012.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Area Sources – Other	Dallas-Fort Worth Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard approved by TCEQ in December 2011.	TCEQ. “Appendix B: Emissions Modeling for the DFW Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard.” <i>Revisions to the State of Texas Air Quality Implementation Plan for the Control of Ozone Air Pollution: Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area</i> . Project Number 2010-022-SIP-NR. Adopted December 7, 2011.
On-Road Sources	CAMPO Link-Based On-Road Emissions Inventory and CAPCOG inventory of extended idling activity.	Texas Transportation Institute. <i>Austin Five-County Region MOVES-Based On-Road Mobile Source Modeling Emissions Inventories for 2012 and 2018</i> . June 2013.
Non-Road Sources – Agricultural Equipment	Census of Agriculture, annual crop and livestock surveys administered by United States Department of Agriculture, and ERG 2012 survey of local tractor operators.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.

Source Type	Key Parameters and Data Sources	Documentation
Non-Road Sources – Construction and Mining Equipment	Updated mine and quarry equipment emissions estimates, updated heavy highway construction emissions estimates, and default Texas NONROAD (TexN) model version 1.6 for all remaining construction equipment.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013. TCEQ. Texas NONROAD emissions model version 1.6. ftp://amdaftp.tceq.texas.gov/pub/Nonroad_EI/TexN/ .
Non-Road Sources – Industrial Equipment	Local equipment population data for aerial lifts, forklifts, and sweepers/scrubbers, survey-based activity data updates, and other updates consistent with studies conducted by ERG and ENVIRON.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Non-Road Sources – Residential Lawn and Garden Equipment	Survey-based equipment ratios and activity levels and updated housing activity surrogate data.	CAPCOG. <i>2012 and 2018 Emissions Updates for the CAPCOG Region and Milam Counties</i> . November 2013.
Non-Road Sources – Commercial Equipment, Commercial Lawn and Garden Equipment, Pleasure Craft, Railway Maintenance Equipment, and Recreational Equipment	Default TexN v. 1.6.	TCEQ. Texas NONROAD emissions model version 1.6. ftp://amdaftp.tceq.texas.gov/pub/Nonroad_EI/TexN/ .
Non-Road Sources – Locomotives	TCEQ “AT 2012 RAIL CONTROLLED TREND” Inventory from the Texas Air Emissions Repository (TexAER).	E.H. Pechan and Associates. <i>Development of Locomotive and Commercial Marine Emissions Inventory – 1990 to 2040; Locomotive Emission Inventories for All Texas Counties</i> . Prepared for TCEQ. July 2010.

Source Type	Key Parameters and Data Sources	Documentation
Non-Road Sources – Drilling Rigs	ERG drilling rig emissions inventory.	Eastern Research Group, Inc. <i>Development of Texas Statewide Drilling Rigs Emission Inventories for the Years 1990, 1993, 1996, and 1999 through 2040.</i> Prepared for TCEQ. August 15, 2011.
Non-Road Sources - Aviation	Interpolation of 2011 and 2014 estimates.	Eastern Research Group, Inc. <i>Development of Statewide Annual Emissions Inventory and Activity Data for Airports.</i> Prepared for TCEQ. July 15, 2011.