Shreveport-Bossier City Metropolitan Statistical Area

Early Action Compact Progress Report

December 31, 2003

Prepared for
U.S. Environmental Protection Agency
Region 6
Dallas, Texas

Contents

Attachments

Tables

1. Introduction

The U.S. Environmental Protection Agency (EPA) requires signatories of Early Action Compacts (EAC) to prepare a progress report every six months that describes the progress made to date against the EAC milestones. This progress report is based on the guidance presented in the *Memorandum from Lydia Wegman to EPA Air Directors in Regions III, IV, VI, and VIII, April 4, 2003.* According to this memorandum, the December 2003 progress report, at a minimum, should include the following:

- Document progress in developing the stakeholder process;
- Report progress on evaluating and selecting emission reduction measures for the local control strategy;
- Describe public outreach activities, and
- Provide and update on modeling/technical planning activities.

A brief description explaining the progress to date of each of these processes and activities is described below. A list of current stakeholders is included as Attachment A.

2. Stakeholders Process

In November 2000, an advisory committee, named the Greater Shreveport Clean Air Citizens Advisory Committee (CACAC), was established by the Mayor of Shreveport, consisting of representatives from various local stakeholder groups. The CACAC was tasked with assessing air quality issues in the Shreveport-Bossier City MSA, developing a set of "recommendations for maintaining and improving local air quality, with an emphasis on ozone issues," and reporting its findings to the local city and parish governing bodies. The members of the committee include representatives of the medical profession, academia, industry, utilities, the Greater Shreveport Chamber of Commerce, citizens groups, regional planning bodies, and local governments.

Since June 2003, the CACAC has met monthly from October through December. The purpose of these meetings has been to:

- Review the progress of the photochemical modeling analysis and to discuss the results of base case and 2007 future base case modeling, and
- Review and refine the list of local control measures developed in June 2003 based on the results of the photochemical modeling results.

In addition to CACAC participation, EPA and Department of Environmental Quality (DEQ) have also attended these monthly meetings.

3. Shreveport-Bossier City MSA Background Air Quality

The Shreveport-Bossier City MSA is currently in attainment for all pollutants with established NAAQS. In fact, as of 2002, the MSA has also achieved attainment with the new eight-hour average ozone NAAQS.

Eight-hour average ozone concentrations in the Shreveport-Bossier City MSA have improved over the past three years (2001-2003) as shown in Table 1. The MSA achieved attainment status for the eight-hour average ozone NAAQS in the summer of 2002. The preliminary monitoring data for 2003 shows a continued downward trend in the eight-hour average concentrations at both monitoring locations. The design values for eight-hour average ozone concentrations (defined as the three-year average of the annual 4th highest daily maximum eight-hour average ozone concentration) for the Dixie and Airport sites are 77 parts per billion (ppbv) and 79 ppbv, respectively, for the period ending in 2003.

Table 1. Eight-Hour Average Ozone Maximum Concentrations for 2001-2003

Location	Year	8-Hour Daily Max. Concentrations (ppbv)				Avg. 4th Highest Conc.[1]	No. Days >=85 ppbv
		1ST	2nd	3rd	4th		
Caddo (Dixie)	**2001**	85	83	78	77	84	1
	2002	80	79	77	75	79	0
	2003	86	82	80	80	77	1
Bossier (Airport)	**2001**	92	89	85	84	90	3
	2002	80	77	76	76	84	0
	2003	93	82	80	77	79	1

[1]Average 4th highest concentration is the average of the annual fourth highest eight-hour ozone averages over a three-year period. Year given is the ending year of the three-year period for this summary statistic.

Data Source: Louisiana Department of Environmental Quality.

Source: Early Action Compact for the Shreveport-Bossier City Metropolitan Statistical Area Comprising Bossier, Caddo, and Webster Parishes, December 12, 2002 and Shreveport-Bossier City MSA Clean Air Citizens Advisory Committee Meeting, October 1, 2003.

4. Candidate Control Measures Progress

The objective of the EAC is to develop and implement local/regional emissions reduction strategies as may be necessary to ensure the Shreveport-Bossier City MSA will continue to meet the eight-hour average ozone NAAQS in the future. The Shreveport-Bossier City MSA is unique among most EAC participants in that it has been designated by EPA as in attainment for the eight-hour average ozone NAAQS[1]. Therefore, unlike nonattainment areas, there are no defined levels of reductions necessary to achieve attainment. In addition, the photochemical modeling analysis results indicate the EAC MSA will be in attainment of the eight-hour ozone standard in 2007. The 2007 base case future modeling results indicate that eight-hour ozone

[1] Green, R.E., U.S. EPA, Regional Administrator (6RA), Letter to M. Foster, Jr., Governor of Louisiana, Louisiana Eight-hour Ozone NAAQS Attainment Status, December 3, 2003.

design values will be 79 ppb and 84 ppb at the Dixie and Airport monitoring stations, respectively. Both these design values are below the 85 ppb eight-hour ozone standard. Furthermore, the latest three years of eight-hour ozone monitoring data shows that the Shreveport-Bossier City MSA is currently well below the eight-hour ozone standard (See Section 3). [2]

In light of the area's current (as well as modeled future) attainment status, the MSA has had preliminary discussions with both EPA and DEQ regarding the appropriate approach to take in developing our Air Quality Improvements Plan (AQIP). The AQIP would include a list of control measures that the City and private industries will commit to implement by December 31, 2005, as discussed more fully below.

The AQIP would also contain a "contingency" provision, which would further require that the CACAC reconvene in the event that eight-hour ozone design value would reach a "trigger" value, such as 83 ppb, at some point in the future during the term of the EAC. DEQ is receptive to this approach. Should the ozone reduction trend reverse and we see an increase in eight-hour concentrations, 2007 control measures modeling simulations indicate that a 10 percent reduction in nitrogen oxide (NO_x) alone or NO_x and volatile organic compounds (VOCs) combined will reduce the eight-hour ozone design value by 2 ppb (82 ppb). The 2007 modeling results also indicate that NO_x emissions from area and non-road sources and elevated point sources are the largest local source-category contributors to the future ozone concentrations in the four-parish area. The CACAC would use this information as a starting point for developing and implementing new emissions control measures should such be needed. However, rather than commit to particular "contingency" control strategies at the outset of the AQIP, the CACAC believes it would be more prudent to keep all "contingency" control measure options open at this point so that the particular circumstances that trigger a contingency (as well as ongoing/updated emissions inventories and modeling analyses) are properly taken into account in the "contingency" control measure selection process.

In addition to the control measures agreed upon in the Ozone Flex Agreement and those federally mandated (e.g., low sulfur gasoline), the other control measures likely to be contained in the AQIP for implementation by the end of 2005 include:

- Installation of intelligent transportation systems to synchronize and improve traffic signal operations at 27 intersections by the end of 2003, with additional 35 intersections by the end of 2004.

- General Motors plant in Caddo Parish installed new VOC abatement system as part of their new product line in October 2003.

[2] The modeling analysis for 2007 is based upon the 2001 design values for the local monitoring sites, because the 2001 values cover the time period of the particular episodes which were selected for the modeling process. As mentioned, the design values for these sites have since decreased significantly, as shown in Table 1. However, even though the future case modeling analysis is based on the higher 2001 values rather than the more current (and significantly lower) values, the analysis still shows the area to be in attainment in 2007 (79 and 84 ppb at the Dixie and Airport sites, respectively).

- A local utility company has submitted a permit modification to reduce NO_x emissions from Prevention of Significant Deterioration (PSD) levels to below major source levels at a power plant located in the Shreveport-Bossier City area. The reduction of NO_x emissions permit commitments should be in place by the end of 2005.

- Installation of a gas collection system on the City of Shreveport's landfill. The landfill gas is piped to a local General Motors facility for use as boiler fuel. The pipeline began operations in November 2003.

- City of Shreveport plans to enter into a 20-year contract in 2004 with Johnson Controls, Inc. for the purpose of installing energy conservation equipment in 33 city buildings.

Table 2 presents a summary of these control measure commitments, preliminary estimates of their potential emissions reductions, implementation dates and geographic area where these measures will be applied. The City and its consultants will continue to work on quantifying emissions reductions for the recommended control measures commitments. Estimated emissions reductions will be included in the 2007 control measures and 2012 maintenance modeling analyses to be completed by late January 2004.

5. Public Outreach Programs

As reported in the June 30th Progress Report, the area's first "Clean Cities" program stakeholder meeting was held on June 24th, with over 45 representatives from local fleets and fuel providers in attendance. Officials from the U. S. Department of Energy and the Louisiana Department of Natural Resources gave presentations on alternative fuel vehicles and how the program works.

After the meeting, a planning group was formed consisting of nine volunteers from the stakeholder group, to create the structure of the coalition. Since then, three subcommittees have been formed (research & planning; public awareness; and fleets and fuel infrastructure), with the chairman of each, along with Wes Wyche, serving as the Steering Committee for the coalition. The committee has reached an agreement with the LSU-S Center for Business and Economic Research for the development of an inventory of all private and public fleets in the four-parish area (Bossier, Caddo, DeSoto and Webster). The Committee is also coordinating the purchase of a "hybrid" bus by the local bus transit authority (SPORTRAN) through EPA's Supplemental Environmental Project (SEP) program, which will involve a major public awareness campaign to promote the use of alternative, cleaner-burning fuels in the local area.

As discussed earlier, the CACAC has continued to meet on a regular basis throughout the period, and these meetings are always open to the public. The City of Shreveport issued a press release on December 5 to announce the local attainment designation and discuss local planning efforts. Several radio interviews were given to the local news radio station during the period concerning the status of the local ozone program and the EAC.

Table 2
Shreveport-Bossier City MSA Early Action Compact
Proposed Local Control Measures Commitments

No.	Control Measure Category	Proposed Control Measures	Potential Emission Reductions	Implementation Date	Geographic Area
Public Awareness Activities					
*	Ozone Awareness Program	This program will build on efforts already undertaken locally, which have included media events, stakeholder meetings, and development of air quality pages included in the City of Shreveport web site. Web site that features information on local air quality, local measures being taken to maintain and improve air quality, the Ozone Action Program, health and welfare effects of ozone pollution, the Air Quality Index, ozone forecasting, and many relevant links that will include EPA, DEQ and DOE Clean Cities web sites.	--	May 2003	Caddo, Bossier and Webster Parishes
*	Ozone Action Program	The Shreveport-Bossier City Ozone Action Program (OAP) is a voluntary ozone reduction and public education program administered on a seasonal basis (May - September) by the City of Shreveport Department of Operational Services through the Clean Air Citizens Advisory Committee (CACAC). The program will consist of two basic facets - a seasonal facet, where participants use measures/actions through the ozone season; and an episodic facet, where participants employ measures or take actions on days predicted to have elevated ozone levels (i.e., Ozone Action Days).	--	May 2003	Caddo, Bossier and Webster Parishes
Commute/Transportation Options					
	Traffic signals synchronization	**NOx and VOC:** Synchronizing or improving traffic signal operations reduces vehicle delay and congestion, which reduces air pollution, fuel consumption, and vehicle operating costs, and improving traffic flow through intersections. Since 2000, 27 intersections have been been upgraded with improved traffic signal operations, and another 35 intersections are planned to be upgraded in 2004.	**NOx:** 0.002 tons/day[1]	2002-2004	Caddo and Bossier Parishes
Stationary Source Measures					
*	Specific emissions reduction commitments from local commercial/industrial facilities	Contact major industrial sources of emissions in the Shreveport-Bossier City MSA to determine if there are any new emission control measures that any of these sources might formally agree to implement as contingency measures in the event of a violation of the eight-hour average ozone NAAQS. If necessary, establish new emission control measures that will be enforced in the event of a violation of the eight-hour average ozone NAAQS.	--	Contigent upon exceeding 8-hour ozone standard	Caddo, Bossier and Webster Parishes
	General Motors New Product Line Abatement System	**VOCs:** On October 7, 2003, General Motors added a new abatement system as part of their new product line. It is anticipated that VOC emissions should be reduced by 400 to 500 tons per year.	**VOC:** 1.1 - 1.4 tons/day	2003-2005	Caddo Parish
	Local Utility Company Modifications	**NOx**: A permit modification was submitted to reduce emissions from above Prevention of Significant Deterioration (PSD) levels to below major source levels at a power plant located in the Shreveport-Bossier City area.	**NOx:** 2.56 tons/day **VOC:** 0.135 tons/day **CO:** 1.14 tons/day	2005	Caddo and Bossier Parishes
Mobile Source Measures					
*	Low Sulfur Gasoline	**NOx:** The Federal Tier 2 program will require low sulfur gasoline (30 ppm) by calendar year 2006, which will reduce NOx.	**NOx:** 5.7-11% reduction[3]	2006	Caddo, Bossier and Webster Parishes

Table 2
Shreveport-Bossier City MSA Early Action Compact
Proposed Local Control Measures Commitments

No.	Control Measure Category	Proposed Control Measures	Potential Emission Reductions	Implementation Date	Geographic Area
	Alternative Fueled Buses	**NOx and VOC:** Fuels other than gasoline or diesel, including compressed or liquified natural gas, methanol, ethanol, propane and electricity. City of Shreveport plans to purchase a hybrid (diesel and electric) bus.	**NOx:** 0.008 tons/day **VOC:** 0.011tons/day[2]	2005	Caddo Parish
*	DOE Clean Cities Program	Shreveport-Bossier City MSA participates Clean Cities Program sponsored by the U.S. Department of Energy (DOE). The Clean Cities program supports public and private partnerships that deploy alternative fuel vehicles (AFVs) and build supporting infrastructure.	**NOx:** 0.00008 tons/day **VOC:** 0.00008 tons/day [2]	2003	Caddo and Bossier Parishes
Other Measures					
	Landfill Gas Resource Project	**VOC:** City of Shreveport has installed a gas collection system on the City landfill. The landfill gas is piped to the local General Motors (GM) plant for use as boiler fuel. The pipeline to GM began operations in November 2003.	To be determined[4]	November 2003	Caddo Parish
	Energy conservation programs	**NOx:** City of Shreveport has entered into a 20-year contract in 2003 with Johnson's Controls, Inc., for the purpose of installing energy conservation equipment in 33 city buildings. Energy conservation measures not only decrease NOx emissions, but also can have significant reductions in other pollutants, such as sulfur dioxide, VOCs, air toxics, and carbon dioxide. These various efficiency measures when combined have the potential to add up to significant energy savings and emissions reductions.	To be determined[4]	2004	Caddo Parish

e: * Denotes those control measures recommended in the Ozone Flex Agreement for the Shreveport-Bossier City MSA.

rces:

aft Report Emission Inventories and Potential Emission Control Strategies For Ozone Early Action Compact Areas in Tennessee, The University of Tennesee Department of Civil and Environmental Engineering, l 13, 2003.

MAQ = Summary Review of Costs and Emission Reductions for 24 CMAQ (Congestion Mitigation and Air Quality) Projects, September 15,1999.

A 1999 = U.S. EPA, EPA's Program for Cleaner Vehicles and Cleaner Gasoline, EPA 420-F-99-1, December 1999.

ACAC is currently working with the Lousiana Department of Natural Resources to quantify expected emission reductions from these measures.

6. EAC Milestones Progress

The Shreveport-Bossier City MSA is committed to achieving the milestones and requirements of the EAC. The City of Shreveport hired Camp Dresser & McKee, Inc. (CDM) and SAI/ICF Consulting (SAI) in April 2003 to complete the technical analyses, and help in the preparation of plans, reports and other milestone submittals. Since the June 30th Progress Report, CDM and SAI worked with EPA to obtain approval of the Quality Assurance Project Plan and Photochemical Modeling Protocol (QAPP) that was submitted to U.S. EPA Region VI on May 30, 2003. The approval process took an additional six to eight weeks longer than anticipated; however, the base case and future base case emissions inventory and modeling are complete and initial future control modeling has also been performed. As mentioned, the MSA has been designated as an attainment area for the 8 hour standard, and modeling is demonstrating continued attainment through 2007 with no additional local controls being imposed. Nonetheless, it is anticipated that some additional future control measure modeling will be performed in January, along with the 2012 maintenance modeling, in order to more definitively quantify the effects of any measures that may be listed in the AQIP.

ATTACHMENT A
LIST OF STAKEHOLDERS

City of Shreveport
City of Bossier City
Caddo Parish
Bossier Parish
Webster Parish
CACAC members:
- Dr. Peter Boggs (local allergy/asthma specialist)
- David Burroughs (General Motors)
- Brian Bond (AEP-SWEPCO, local electric utility)
- Laura Guthrie (Centerpoint Energy, local gas utility)
- Dr. Kimberly Jones (LSU School of Medicine, Dept. of Pediatrics)
- Wes Wyche (City of Shreveport)
- Kent Rogers (Northwest Louisiana Council of Governments)
- Bob Molloy (interested citizen)
- Lola May (Queensborough Neighborhood Association)
- Randy Lucky (Caddo Parish Commission)
- Bill Altimus (Bossier Parish Police Jury)
- Lorenz Walker (City of Bossier City)

Ozone Action Plan Participants:
- AEP – SWEPCO
- Barksdale Air Force Base
- BASF Corporation
- Beaird Industries
- Bossier Parish School Board
- Caddo Parish School Board
- Centenary College
- Centerpoint Energy
- City of Bossier City
- City of Shreveport
- Doctors Hospital
- Eagle Distributing
- Frymaster Corp.
- General Electric Co.
- General Motors
- International Paper
- Kansas City Southern Railroad
- La. Department of Environmental Quality (NW Regional Office)
- Libbey Glass
- LSU – Shreveport
- PrintPack, Inc.
- SPORTRAN (Shreveport Transit Management)