

**EARLY ACTION COMPACT
FOR THE
SHREVEPORT-BOSSIER CITY
METROPOLITAN STATISTICAL AREA
COMPRISING
BOSSIER, CADDO, AND WEBSTER PARISHES**

Prepared for

**U. S. Environmental Protection Agency
Region 6
Dallas, Texas**

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1.0 PURPOSE OF THE EARLY ACTION COMPACT

This Early Action Compact (EAC) serves as a Memorandum of Agreement between local governments representing Bossier, Caddo, and Webster Parishes and the cities of Shreveport and Bossier City (collectively Local Governments), the Louisiana Department of Environmental Quality (LDEQ), and the United State Environmental Protection Agency (EPA). It is for the express purpose of commitment to EPA's "Protocol for Early Action Compacts Designed to Achieve and Maintain the 8-Hour Ozone Standard".

The "Protocol" allows for early voluntary 8-hour air quality improvement plans to be developed through a "Compact" between Local, State, and EPA officials for areas that are in attainment for the 1-hour ozone National Ambient Air Quality Standard (NAAQS), but approach or monitor exceedances of the 8-hour ozone NAAQS. The Shreveport-Bossier City Metropolitan Statistical Area (MSA), comprised of Bossier, Caddo, and Webster Parishes, is currently in attainment of the 1-hour ozone standard and, based on preliminary data for this past summer, is in attainment of the 8-hour ozone standard (albeit by a narrow margin). Thus, the area is eligible and a good candidate for the Early Action Compact.

The EAC requires the development of an early action plan that includes all necessary elements of a comprehensive air quality plan, but is tailored to local needs and driven by local decisions. As long as all Compact terms and milestones are met, the effective date of nonattainment designations is deferred, as are related requirements. The early action approach will offer a more expeditious timeline for achieving emissions reductions than EPA's expected 8-hour implementation rulemaking, while providing "fail-safe" provisions for the area to revert to the traditional State Implementation Plan (SIP) process if specific milestones are not met. Currently, EPA is planning to make the initial designations under the 8-hour ozone standard in 2004.

According to the latest EPA guidance, this Compact is to be executed no later than December 31, 2002. The air quality improvement plan required of the Compact is to be completed and its elements incorporated into the Louisiana State Implementation Plan no later than December 31, 2004.

2.0 BACKGROUND

2.1 Air Quality Status/Trends in the Shreveport-Bossier City MSA

The Shreveport-Bossier City MSA is currently in attainment for all pollutants with established National Ambient Air Quality Standards. It has, however, only this year achieved attainment with the 8-hour ozone standard.

Air quality monitoring for ozone in the MSA has shown sporadic exceedances of the 1-hour ozone standard over the past 20 years of monitoring at the airport site (Bossier Parish) and the Dixie site (Caddo Parish). Since passage of the Clean Air Act

Amendments of 1990, there have been no exceedances of the 1-hour standard at the Dixie site and only four at the airport site (1 in '93; 1 in '98; and 2 in 2000). From 1991 to 2001 1-hour ozone design values have ranged from 92 to 118 parts per billion (ppb) at the airport site and from 100 to 110 ppb at the Dixie site, with no discernible trends at either site. The 1-hour ozone design values for the two sites for 2001 were 113 and 101 ppb for the airport site and the Dixie site, respectively. The 1-hour ozone design value is the fourth highest average one-hour ozone concentration over a three-year period. A 1-hour ozone design value above 124 ppb at a given monitor site would represent a violation of the 1-hour ozone NAAQS.

With the impending EPA implementation of the 8-hour ozone standard, the Shreveport-Bossier City MSA has experienced a downward trend in 8-hour ozone design values (defined as the average of the annual 4th highest 8-hour average over a three year period). Table 1 provides a summary of the four highest 8-hour average readings and design values for each of 2000, 2001, and 2002.

Table 1. Summary Data for 8-Hour Ozone Maximums at the Airport (Bossier Parish) and Dixie (Caddo Parish) Sites for 2000-2002.

Location	Year		8-Hour Daily Maximum (ppb)				Avg 4th Max (DV)	No. Days >=85 ppb
			1st	2nd	3rd	4th		
Caddo (Dixie)	2000	Conc.	101	95	92	86	88	4
		Date	19-Aug	18-Aug	3-Aug	26-Jul		
	2001	Conc.	85	83	78	77	84	1
		Date	26-Jun	23-May	18-Jun	14-Aug		
	2002	Conc.	80	79	77	75	79	0
		Date	22-May	11-Sep	10-Aug	6-Sep		
Bossier (Airport)	2000	Conc.	106	98	93	93	91	8
		Date	8-Aug	18-Aug	16-Jul	29-Aug		
	2001	Conc.	92	89	85	84	90	3
		Date	20-Jun	20-Jul	26-Jun	25-Jul		
	2002	Conc.	80	77	76	76	84	0
		Date	14-Sep	22-Jun	22-May	11-Sep		

Data Source: LA Dept. Environmental Quality. DV = design value which is the average of the annual fourth highest 8-hour ozone averages over a 3-year period. ppb = parts per billion.

2.2. History of Local Air Quality Planning Efforts

In November 2000, Shreveport Mayor Keith Hightower appointed an advisory committee consisting of representatives of various stakeholder groups to study air quality issues in the Greater Shreveport-Bossier MSA and to develop recommendations for maintaining and improving local air quality, with an emphasis on ozone issues. The members of the committee include representatives of the medical profession, academia, industry, utilities, the Greater Shreveport Chamber of Commerce, citizen groups, regional planning bodies, and local governments. The committee began meeting in late 2000, and formally presented its findings and recommendations to Mayor Hightower in March 2002.

The committee's work has already led to a number of accomplishments, including the following:

- Public awareness programs. Local television stations and the daily newspaper began providing daily ozone reports during the 2001 ozone season, and various TV and newspaper stories on the ozone issue were featured throughout the summer. Also that summer, a web page with pertinent ozone information and links to other sites was established on Shreveport's Internet site. In the 2002 ozone season, the website was improved; educational brochures were developed and mailed to all Shreveport and Bossier City residents; air quality interactive/educational programs were developed at a popular local children's discovery center; and an ozone season "kickoff" event was held and featured on local news. Telephone numbers were also established which provide real time ozone levels and forecasts.
- Funding. In 2001, federal appropriations totaling \$400,000 for support of local air quality initiatives were awarded. A scope of work and budget for the appropriations is currently being developed.
- Ozone Flex commitment. In June, 2001, the cities of Shreveport and Bossier City and the Parishes of Bossier and Caddo executed a letter of commitment to EPA, agreeing to jointly develop and submit an Ozone Flex plan for the implementation of voluntary measures intended to lower ozone levels.
- Intergovernmental agreement. An intergovernmental agreement was executed in May 2002 between Shreveport, Bossier City, Caddo Parish and Bossier Parish, establishing the basis for cooperation and cost sharing for air quality programs such as emission inventory development/refinement, modeling, and development of control strategies.

At its September 23, 2002 meeting, the committee unanimously recommended that an Early Action Compact for this area be developed and submitted to EPA.

2.3 The Early Action Compact/Air Quality Improvement Plan

Although edging into attainment this summer, the Shreveport-Bossier City MSA is at substantial risk to slipping back into nonattainment status. Another bad summer for ozone as was experienced in 2000 could push the MSA's design value above the 84 ppb threshold for attainment of the 8-hour ozone NAAQS.

Areas formally declared in violation of the NAAQS are designated "nonattainment areas" and must meet certain Clean Air Act requirements such as:

- New Source Review – requires a comprehensive review of new or expanded industrial operations to minimize air pollution. Emissions controls requirements are more stringent and costly than for attainment areas.
- Transportation Conformity – requires a demonstration that regional long-range transportation plans will not negatively affect progress toward attainment or federal highway funds can be withheld.
- Rate of Progress Requirements – a certain percentage of pollutants must be reduced each year.
- Failure to Attain – consequences of failure to reach attainment by the specified date include stricter control measures and the potential for stiff penalties.
- 10-year Maintenance Plan – includes additional or continuing mandatory programs for 10 years following attainment.

The MSA's participation in the Early Action Compact Protocol offers several key advantages relative to the traditional nonattainment SIP process. These include:

- The EAC Protocol is designed to achieve clean air sooner than would be expected under the traditional nonattainment process.
- The EAC Protocol affords the signatories greater flexibility in selecting emission reduction measures and programs that are best suited to local needs and circumstances.
- The EAC Protocol ensures deferral of the effective date of the nonattainment designation and related requirements, thereby avoiding the stigma, cost, and economic development impacts associated with a nonattainment designation, so long as all Early Action Compact terms and milestones are met.

The cornerstone of the Early Action Compact Protocol is the Air Quality Improvement Plan (AQIP) developed to reduce local ozone-forming emissions and lower summertime ozone levels. It is the official attainment/maintenance plan for the MSA to be developed under the EAC Protocol agreement. It is a comprehensive air quality plan that will be incorporated into a formal Louisiana State Implementation Plan, and the MSA will be required to carry out this plan just as in nonattainment areas. Unlike a nonattainment area SIP plan, though, the AQIP will be tailored to local needs and driven by local decisions.

The specific elements required of the AQIP are described below in Section 3.2. According to the EAC Protocol, it must be completed and incorporated into the State SIP no later than December 31, 2004. Recent guidance from EPA requires that the plan must

be complete and submitted to the State (LDEQ) by March 31, 2004 to provide adequate time for the State to consider and adopt measures in its SIP prior to December 31, 2004.

2.4 Regional Interstate Coordination

Northeast Texas (the Tyler-Longview-Marshall area) has expended considerable effort and funds in research and planning for ozone abatement efforts over the past several years. It is quite likely that, because of their current status with respect to the 8-hour ozone standard, they might also elect to pursue the Early Action Compact Protocol.

Recognizing that regional airshed modeling domains for the Shreveport-Bossier City and Tyler-Longview-Marshall areas would overlap; it is easy to see that there could be significant opportunities for efficiencies in cooperation between the two areas. There has been some initial sharing of information, and informal communications have been initiated between the two areas. The Shreveport-Bossier City MSA will endeavor to promote and support cooperation in air quality planning efforts for the two areas.

3.0 MEMORANDUM OF AGREEMENT

This Early Action Compact (EAC) is a Memorandum of Agreement between the local governments representing Bossier, Caddo, and Webster Parishes and the cities of Shreveport and Bossier City, the Louisiana Department of Environmental Quality (LDEQ), and the United States Environmental Protection Agency (EPA). It is for the express purpose of developing and implementing an Air Quality Improvement Plan (AQIP) that will reduce ozone levels in the Shreveport-Bossier City MSA to maintain compliance with the 8-hour ozone standard.

3.1 General Provisions

- A. The signatory parties commit to develop, implement and maintain the AQIP according to EPA Protocol for Early Action Compacts issued June 19, 2002, and adhere to all terms and conditions stated in the Protocol.
- B. If the area fails to meet all the terms of the EAC, including meeting agreed-upon milestones and attainment of the 8-hour ozone NAAQS on or before December 31, 2007, then it will forfeit its participation and may be subject to designation as nonattainment according to EPA's 8-hour ozone implementation rules.
- C. Before formal adoption into the Louisiana SIP, this agreement may be modified or terminated by mutual consent of all signatory parties, or any party may withdraw from the agreement. The local government signatories will approve the AQIP before it is submitted to LDEQ for inclusion in the SIP. Once the AQIP elements are incorporated into the SIP, any modifications will be treated as SIP revisions.
- D. The signature date of the EAC is the start date of the agreement's term and the agreement remains in effect until December 31, 2007.

3.2 Air Quality Improvement Plan

The local governments agree to develop and implement an AQIP that will demonstrate attainment of the 8-hour ozone standard by December 31, 2007, and maintenance until at least 2012. The local governments will develop this plan in coordination with EPA, LDEQ, stakeholders, and the general public. The AQIP will include a process to monitor and maintain long-term compliance with the standard. The AQIP will be finalized by March 31, 2004 for inclusion in the Louisiana SIP by December 31, 2004. If a development or issue arises that may impact performance or progress toward milestones, the local government signatories will immediately notify all other signatories.

The AQIP will address the following major elements.

3.2.1 Milestones and Reporting

To facilitate performance monitoring and communication with EPA, LDEQ, and stakeholders, the EAC protocol requires that the EAC include clearly measurable milestones for the development and implementation of the AQIP. Major milestones established for this EAC are shown below in Table 2. The Shreveport-Bossier City MSA will assess and report its progress relative to these milestones in a regular, public process at least every six months.

3.2.2 Emission Inventories

Base case(s) and related future year (2007) emissions inventories will be developed by June 30, 2003. These inventories will be used for input for SIP-quality regional airshed modeling, thus they must be developed using tools that are suitable for this purpose and approved by both LDEQ and EPA. The base case(s) inventories will be developed for 1999 or later episodes selected to be representative of typical ozone exceedance situations as determined with EPA episode selection guidance. The inventories will include:

- Point source emissions – employing LDEQ Emission Inventory System data.
- Onroad mobile source emissions – employing Mobile 6 emission modeling based on appropriate locally modeled transportation data for the urban areas.
- Nonroad sources - model data adjusted for local equipment usage.
- Area sources - data based, where possible, on local survey data.
- Biogenic sources – inventory developed employing methods acceptable to LDEQ and EPA.

Where practicable, trends in emissions from the various source categories will be analyzed to provide a better understanding of emissions trends in the Shreveport-Bossier City MSA and to facilitate verification of accuracy of the inventories.

Table 2. Major Milestones for the Shreveport-Bossier City MSA Early Action Compact.

MILESTONE	DATE
EAC Memorandum of Agreement Executed	31DEC02
Identify & Describe Local Control Measures Being Considered	16JUN03
Emissions Inventories Completed	30JUN03
Base Case/Future Case Modeling Completed	30SEP03
Control Scenarios Modeling Completed	30NOV03
Adoption of Emission Reduction Measures	30JAN04
Completion/Adoption of Air Quality Improvement Plan	31MAR04
EPA Promulgates 8-HR Ozone Designations	15APR04
LDEQ Promulgation of Shreveport-Bossier City MSA SIP	31DEC04
EPA Takes Final Action on SIP	30SEP05
All Local Emission Reduction Strategies Implemented	31DEC05
Air Quality Improvements Progress Assessment	30JUN06
Attainment of the 8-Hour Ozone NAAQS/EAC Expires	31DEC07
Annual Reviews of Growth	2008-2012

3.2.3 Modeling

Regional airshed modeling for the Air Quality Improvement Plan will employ an EPA-accepted modeling technique and appropriate EPA guidance for SIP-level modeling. Modeling protocol development, episode selection, model input preparation, and actual model simulations will involve close collaboration and agreement of the Shreveport-Bossier City MSA representatives, LDEQ, and EPA. As mentioned previously, there may also be opportunity to coordinate with representatives of the Tyler-Longview-Marshall Texas planning area for efficiency and consistency in regional modeling efforts.

Base case and future case (2007) modeling are scheduled to be completed by September 30, 2003. Control strategy modeling including direction (e.g. effectiveness of VOC vs. NOx controls) and range finding (percent reduction scenarios – i.e. needed reduction levels) as well as control strategies scenarios are scheduled to be completed by November 30, 2003.

All adopted Federal and State emission reduction measures that have been or will be implemented by the December 31, 2007 attainment date will be included in base case, future case, and control strategy modeling.

Modeling efforts will be carefully documented. Model performance will be assessed to assure conformance with EPA's accepted model accuracy criteria. A technical support document describing the modeling effort and attainment demonstration will be part of the AQIP submittal.

3.2.4 Emission Reduction Strategies

Following research of various emission reduction strategies and, with guidance provided by testing of various strategies with the developed regional airshed modeling, the Shreveport-Bossier City MSA stakeholders will select and adopt local emission reduction measures necessary to support demonstration of attainment of the 8-hour ozone standard by December 31, 2007. The research, selection, and adoption process for the local measures is scheduled to be completed by January 30, 2004. However, recent EPA guidance requires that local measures being considered for the AQIP should be identified and described by June 16, 2003.

The selected local emission reduction measures will be specific, quantified, and enforceable. Specific implementation dates, as well as detailed documentation and reporting processes will be provided for each.

The local emission reduction measures will be incorporated by the LDEQ into the SIP and submitted to EPA for review and approval. In the event the area desires to add, delete, or substitute measures after SIP promulgation, the area will request a modification of the AQIP. Such modification will be treated as a SIP revision and facilitated by the LDEQ.

3.2.5 Maintenance for Growth

The AQIP will include a component to address emissions growth at least 5 years beyond December 31, 2007, ensuring that the Shreveport-Bossier City MSA will remain in attainment of the 8-hour standard during that period. The future attainment maintenance analysis may employ one or more of the following or any other appropriate techniques necessary to make such a demonstration:

- Modeling analysis showing ozone levels below the 8-hour standard in 2012;
- An annual review of growth (especially stationary and mobile sources) to ensure control measures and growth assumptions are adequate;
- Identification and quantification of federal, state, and/or local measures indicating sufficient reductions to offset growth estimates.

The AQIP will also detail a continuing planning process that includes modeling updates and modeling assumption verification (particularly growth assumptions) where changes

in emissions inventories and growth assumptions warrant. The continuing planning process will consider and evaluate:

- All relevant actual new point sources and major modifications of existing sources;
- Impacts from increased emissions from potential new source growth;
- Future transportation patterns and their impact on air quality in a manner that is consistent with the most current adopted Long Term Transportation Plan and most current trend and projections of local motor vehicle emissions.

If the review of growth demonstrates that adopted emission reduction measures are inadequate to address growth in emissions, additional measures will be added to the AQIP through the SIP revision process.

3.2.6 Public Involvement

Public involvement will be conducted in all stages of the planning and implementation process. Public education programs will be used to raise awareness regarding issues, opportunities for involvement in the planning process, implementation of control strategies, and any other issues important to the Shreveport-Bossier City MSA. Interested stakeholders will be involved in the planning process as early as possible. They will be provided advance notice of meeting times, locations, and agenda for planning meetings. Plan drafts will be publicly available, and the document development process will have sufficient opportunities for comment from all interested stakeholders. Public comment on the proposed final AQIP will follow the normal SIP revision process as implemented by LDEQ. Semi-annual reports detailing, at a minimum, progress toward milestones will be publicly presented and available. The June, 2006 semiannual report will provide the implementation status of all local control measures included in the AQIP and adopted into the LDEQ SIP revision for the Shreveport-Bossier City MSA.

3.3 Local, State, and EPA Commitments

3.3.1 Local Commitments

The Shreveport-Bossier City MSA will hold primary responsibility for the development and implementation of the Early Action Plan (Air Quality Improvement Plan), as well as for maintaining communication with all parties to the Compact. Other responsibilities include:

- Drawing up the Compact, which embodies the requirements described in the EAC Protocol, including a time line for milestones;
- Completing and signing by all parties of the Early Action Compact no later than December 31, 2002;
- Completing and submitting the AQIP to LDEQ and EPA by March 31, 2004;
- Completing and adopting the emission reduction measures elements of the AQIP as part of the SIP no later than December 31, 2004;

- Preparation and provision of semiannual progress reports to stakeholders, LDEQ, and EPA;
- Notifying parties as soon as possible if Compact milestones will be missed or have been missed;
- Notifying parties as soon as possible if Compact modification/termination is to be requested.

3.3.2 LDEQ Commitments

The State, represented by LDEQ, will provide support to the Shreveport-Bossier City MSA throughout the planning and implementation process. Areas of support will include:

- Technical assistance in the development of emission inventories, modeling process, trend analysis, and quantification and comparison of emission reduction strategies;
- Necessary information on all Federal and State adopted emission reduction measures which affect the area;
- Critical third party review of emissions inventory, modeling, and self-evaluation work;
- Technical and strategic assistance, as appropriate, in the selection and implementation of emission reduction strategies;
- Technical and planning assistance in developing and implementing processes to address the impact of emissions growth beyond the attainment date;
- Maintenance of monitors and reporting and analysis of monitoring data;
- Support for public education efforts;
- Coordinate communication between local areas and EPA to facilitate continuing EPA review of local work;
- Expedient review of the locally developed AQIP, and if deemed adequate, propose modification of the SIP to adopt the appropriate elements of the AQIP;
- Adoption of emission reduction strategies into the SIP as expeditiously as possible. The final complete SIP revision must be completed, adopted, and submitted by the state to EPA by December 31, 2004.

3.3.3 EPA Commitments

The EPA will recognize the Shreveport-Bossier City MSA's and LDEQ's commitment to voluntarily adopt an early, substantive, scientifically-based and enforceable attainment plan with early implementation of control measures by becoming a party to the Early Action Compact developed in conformance with EPA's EAC Protocol. EPA responsibilities include:

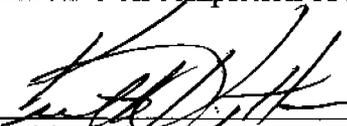
- Provided that the monitors in the Shreveport-Bossier City MSA reflect attainment when EPA's 8-hour implementation guidelines call for designations, EPA will move expeditiously to designate the Shreveport-Bossier City MSA as attainment

and impose no additional requirements other than those undertaken pursuant to this Early Action Compact.

- If monitors in the Shreveport-Bossier City MSA reflect nonattainment when EPA's 8-hour implementation guidelines call for designations or at any time during the area's participation in the Early Action Compact, EPA will defer the effective date of nonattainment designation and related requirements for the area as long as all terms and milestones of the Compact are being met, including submission of the early action SIP revision by 2004.
- EPA will provide technical assistance to LDEQ and Shreveport-Bossier City MSA in the development of the Early Action Plan.
- EPA will move quickly to review and approve completed plans by no later than nine months after submission of the SIP revision by LDEQ.
- Provided that the area has progressed from nonattainment to attainment status by December 31, 2007, EPA will move expeditiously to designate the area as attainment and impose no additional requirements.
- If at any time the area does not meet all the terms of this compact, including meeting agreed-upon milestones, then it will forfeit its participation and be designated (or re-designated if necessary) according to EPA's 8-hour ozone implementation guidelines. EPA will offer such an area no delays, exemptions or other favorable treatment because of its previous participation in this program.
- If the Shreveport-Bossier City MSA violates the standard after December 31, 2007, the area will be designated nonattainment. LDEQ will then submit a revised attainment demonstration SIP revision according to the Clean Air Act (CAA) and EPA's 8-hour implementation rule, unless the 8-hour implementation schedule requires SIPs from 8-hour nonattainment areas before December 31, 2008. In that event, a revised attainment demonstration SIP revision for the participating area will be due as soon as possible but no later than December 31, 2008. In no event will EPA extend the attainment date for the area beyond that required by the CAA and/or EPA's 8-hour implementation rule.
- The region will not be allowed to renew this EAC after December 31, 2007, or to initiate a new compact if it has previously forfeited its participation.

3.4 Signatures

The signatories below have agreed to this Early Action Compact, which becomes effective on completion of all signatures.



Keith Hightower
Mayor, City of Shreveport

Date: 12-19-02



George Dement
Mayor, City of Bossier City

Date: 12/17/02



W. T. Hanna Jr.
Administrator, Parish of Caddo

Date: 12-18-02



Jimmy Cochran
President, Bossier Parish Police Jury

Date: 12/17/02



Charles W. Walker
President, Webster Parish Police Jury

Date: 12/17/02



Dr. Hall Bohlinger
Secretary, Louisiana Department of
Environmental Quality

Date: 12/13/02



Gregg A. Cooke
Administrator, Region 6
U. S. Environmental Protection Agency

Date: 12-23-02