

VISIBILITY IMPROVEMENT - STATE AND TRIBAL ASSOCIATION OF THE SOUTHEAST

REGIONAL PLANNING ORGANIZATION OF THE SOUTHEAST

MULTI-YEAR WORK PLAN

September 6, 2002

The Southeastern States Air Resource Managers (SESARM) submits to the United States Environmental Protection Agency (EPA) a multi-year work plan for regional haze activities associated with FY2002 federal funding. States and Tribes in the southeast are working together through the collaborative effort known as Visibility Improvement - State and Tribal Association of the Southeast (VISTAS). VISTAS is charged with planning regional haze activities for the southeastern United States. SESARM is the official organization responsible for receiving and utilizing the federal funding for VISTAS activities.

The following work plan was developed based on the VISTAS Workgroup Timeline presented in Appendix A. The timeline was developed to meet a schedule for regional haze SIP submittal to EPA by December 31, 2008. The timeline is based on the regulatory development needs of the VISTAS member states, tribes and local agencies. The following costs are based on best estimates. If adjustments are made to these dollars, VISTAS will provide documentation within the quarterly reports.

Summary of 2002 Work Assignments

2002 Work Assignments	Dollars
Administrative operations (includes salaries, the technical coordinator contract, office operations, travel, meeting/conference logistics, and necessary training)	\$204,000
Participation in national ambient air monitoring database and additional contract analyses for VISTAS region (excludes \$50,000 in grant holdback to the WRAP)	\$60,000
Ambient monitoring – augmentation of existing sites/deployment of additional monitoring	\$350,000
Develop a description of the haze problem in the VISTAS region per draft modeling guidance. Data analyses for assessing contribution to visibility impairment.	\$50,000
Maintenance of existing state-owned radar profilers	\$75,000
Comprehensive 2002 Annual Emissions Inventory (EI) to support modeling and assessment of speciated PM _{2.5} . Inventory will be developed at county level for entire VISTAS region by major source category (i.e., point, area, highway mobile and off road mobile). Will also include better temporal profiles for major source categories, growing the 1999 PM _{2.5} emission inventories to 2002 for the other states outside the VISTAS region, as well as Canada and Mexico, and improving the emission estimates for selected source categories (e.g., NH ₃ from animal operations)	\$250,000

Maintenance of SAMI modeling efforts on the web so that, as VISTAS modeling progresses, we will have access to the SAMI work for comparison, use, and avoidance of redundant work being done by the VISTAS air quality modeling contractor	\$15,000
Execute the emissions model to develop speciated, temporalized, gridded emissions inventory inputs for the air quality model	\$100,000
Begin work efforts to process meteorological and emission inputs through the air quality models and evaluate model performance	\$146,000
Total	\$1,250,000
National Data Base Grant Holdback for Transfer to WRAP	\$50,000
Grand Total	\$1,300,000

2002 Work Assignment Descriptions

Administrative Costs

Administrative costs include salaries, the technical coordinator contract, office operations, travel, meeting and conference logistics, and necessary training. SESARM has set up its offices in Atlanta. Any remaining setup costs not covered in earlier grants will be paid through this grant. In addition, ongoing operational costs attributable to regional haze planning will be charged to the grant. One-third of the cost of a training coordinator is proposed, subject to final approval of the VISTAS STAD and the SESARM Board of Directors. SESARM will set up an arrangement with a conference call service to make available toll-free call-in numbers for the routine workgroup, committee, and STAD calls.

National Database

VISTAS Data Workgroup is participating with other RPOs on design and development of a national online ambient monitoring database called Visibility Information Exchange Web System (VIEWS). The Cooperative Institute for Research in the Atmosphere (CIRA) is the contractor responsible for the web based data archive and analysis system. The Views steering committee is comprised of representatives of each of the RPOs and EPA. The scope of work is to create a new VIEWS website based on the existing WRAP ambient monitoring online database, to prepare annual electronic data summaries consistent with guidance from the VIEWS steering committee, to expand the online database to include data from monitoring networks throughout the US, and to enhance and add new data access and analysis tools. Visibility and particle data are the highest priority data sets.

In addition to the funding for the national database (\$50,000 grant holdback by EPA of VISTAS regional haze funding to the WRAP), we also anticipate additional data analyses following review of current data by the VISTAS contractor. This work would be outside the scope of the national database.

Monitoring

The Data Workgroup in conjunction with the Technical Analysis Workgroup will prioritize monitoring needs and plan the implementation of new monitoring during 2002-2004. VISTAS is currently developing a Monitoring Plan which will establish a monitoring data base sufficient to evaluate atmospheric model performance. The atmospheric modeling results will be used to develop appropriate control measures to be included in SIP's and TIP's, to ensure the Class I areas in the southeast achieve visibility improvement goals. Therefore, the modeling results need a thorough evaluation such that the States and Tribes are comfortable using the analysis in the rulemaking effort. To achieve this credibility, the monitoring data is critical to the model performance evaluation. VISTAS, in coordination with the four other regional planning organizations and the Environmental Protection Agency (EPA) expect that 2002 or 2003 will be selected as the base year for atmospheric modeling. Thus monitoring data available in 2002 or 2003 will be most useful for model performance evaluation.

This monitoring plan addresses the following specific objectives:

- Spatial representation across all areas of the VISTAS region
- Representation of source areas contributing to air quality at Class I areas in VISTAS region
- Temporal resolution of the data to support model evaluation. Currently most sites have 24 hour average data, while the model will generate hourly predictions. Hourly ambient data are needed to correctly characterize the diurnal profile of the various species.

Funding to address the monitoring needs of VISTAS includes the current request for federal 2002 regional haze funding, a 2002 §103 PM2.5 federal grant (\$236,000) and \$120,000 in §103 federal funding provided to North Carolina (\$60,000) and South Carolina (\$60,000) for PM2.5 continuous speciation monitoring.

Characterizing Visibility in the Southeastern US

A report will be prepared cooperatively by the workgroups with contractor and technical advisor support to characterize regional haze in the southeastern US. The development of the report will include: a review of the science and situation, calculation of initial baseline visibility, review of monitoring data/data gaps and recommendations for additional monitoring, initial emission inventory characterization and projections, and compliance with existing control programs. As well, options to evaluate source contributions to VISTAS Class I areas will be considered jointly by the Data, Technical Analysis, and Planning Workgroups. This should include data analyses for assessing contributions.

Radar Profilers

VISTAS has determined the need to maintain the existing state-owned radar profilers and to seek additional radar profilers in the VISTAS region. Funds from the 2002 federal grant will cover the maintenance of the state-owned sites. Currently, VISTAS is cooperating with Mineral Management Services (MMS) to install an MMS-owned radar

profiler on the Florida Gulf Coast. MMS is currently covering operating costs. A VISTAS state is assisting with data handling and transfer. VISTAS may need to support operations or repairs in the future. VISTAS will also be working to prioritize need and location of future radar profilers.

Emission Inventory Development

As a part of a \$103 federal PM2.5 Emissions Inventory Grant provided to SESARM, an effort is underway to develop a Base 2002 PM2.5 emission inventory for the ten VISTAS states. An enhanced emissions inventory effort will also be completed by VISTAS to augment that effort by doing the following: developing better temporal profiles for major source categories, growing the 1999 PM2.5 emission inventories to 2002 for the other states outside the VISTAS region as well as Canada and Mexico, and improving the emission estimates for selected source categories (e.g., NH3 from animal operations). VISTAS intends to work with other RPO's to cost share these activities, particularly 2002 inventories for states outside the VISTAS region, but in order to cover contingencies, the expected full amount is included as a part of the 2002 federal funding.

Maintenance of SAMI Files

VISTAS will benefit from work that has already been completed through the Southern Appalachian Mountains Initiative (SAMI). It is important that the modeling work done for SAMI be maintained on the web so that as VISTAS modeling progresses, we have access to the SAMI work for comparison and to build off of. Having access to this data will help prevent redundant work being done by the VISTAS air quality modeling contractor. This work will be done through a contract with Georgia Tech to maintain the data and webpage information August, 2003 through August 2004. SAMI will continue to maintain the SAMI files through August, 2003.

Emissions Modeling

One of the inputs to the air quality model is a speciated, temporalized, gridded emissions inventory. The purpose of this task is to execute the emissions model VISTAS selects for this analysis. The emissions model will be run at the grid resolutions to support the air quality modeling. The larger grid resolutions (most likely 36 km and 12 km) will likely be run over an entire year, as EPA's draft modeling guidance for regional haze suggests that an entire year may need to be modeled to capture the events that make up the 20 percent best and worst days. At recent national RPO technical meetings, all RPO's agreed that 2002 seems to be the best year for base line model evaluation due to the monitoring network (IMPROVE and PM2.5 SLAMS and NAMS) being most complete by that year. The decision to run a full year beginning on January 1, 2002, or sometime later in the year, has not yet been made, but should be determined in 2002 based on the additional data collection that can be accomplished to support model evaluation. Finally, a smaller grid resolution (e.g., 4 km) may need to be run over smaller areas for at least some episodes representing the 20 percent best and worst days to understand the impact of urbanized areas very near Class I areas. Such fine resolution may be needed to adequately capture the emissions from the urbanized

areas and to better understand how these nearby emissions are impacting visibility in Class I areas.

This effort will be contracted out through an RFP process. The work will involve processing the base year, future year and control strategy emission inventories developed for VISTAS through the emissions model and evaluating the output through visual and tabular methods. Any necessary changes to the model inputs as a result of errors found and any required reprocessing prior to use in the air quality model will be included. The work will also include the data storage and web page maintenance for this modeling process.

Air Quality Modeling

The purpose of this task is to execute the air quality model VISTAS selects for this analysis. The model will likely be run at 36 km grid resolution over a broad area, such as the continental United States. Additionally, the model will be run at a finer resolution, such as 12 km over much or all of the Southeast. The 36 km and 12 km runs will likely be done over an entire year, as EPA's draft modeling guidance for regional haze suggests that an entire year may need to be modeled to capture the events that make up the 20 percent best and worst days. Finally, a smaller grid resolution (e.g., 4 km) may need to be run over smaller areas for at least some episodes representing the 20 percent best and worst days to understand the impact of urbanized areas very near Class I areas. Such fine resolution may be needed to adequately capture the emissions from the urbanized areas and to better understand how these nearby emissions are impacting visibility in Class I areas.

This effort will be contracted out through an RFP process. The work will involve processing the meteorological and emission inputs through the selected air quality model and evaluating the model's performance, as well as any required reprocessing as the result of any meteorological or emissions inputs changes. Additionally, this work will include adjusting any air quality model parameters in order to improve the model's performance. Furthermore, this work will include processing future year and control strategy emissions inventories through the air quality model and any sensitivity modeling runs deemed necessary by VISTAS.

Reporting

Per the John Seitz memorandum entitled, Funding Criteria for Regional Planning Bodies, dated August 27, 1999, quarterly reports will be submitted to EPA Region 4 outlining accomplishments of VISTAS.

Projected Long-Term Efforts

As VISTAS performs the activities associated with the tasks described previously, it will continually review the need for refinements to on-going efforts. Additionally, there are numerous longer-range efforts and funding needs that are anticipated. VISTAS has identified the following efforts designed to support the development of timely, coordinated and effective regional haze State and Tribal Implementation Plans. These

longer-range efforts will be sequenced to support the regulatory schedule established in the regional haze rulemaking. The primary objective is to produce a product that assures satisfactory conclusion of the regional planning process according to a schedule that allows for timely State and Tribal Implementation Plan development.

Although the following projections include the best estimate of what is required to meet the regional haze regulatory requirements and the projected cost of implementation, it is recognized that flexibility is needed for adjustments. These adjustments may be necessary to allow for updating and revising the long-term efforts based on knowledge gained and a level of funding that has been clearly established. It is anticipated that these long-term projections will be reviewed and modified regularly. Following such modifications, VISTAS will develop a revised work plan and submit to EPA within two months of the modification.

VISTAS has identified the following as critical future efforts in order to meet the requirements of the regional haze rule.

2003 Work Assignments	Dollars
Administrative operations (includes salaries, the technical coordinator contract, office operations, travel, meeting/conference logistics, and training)	\$312,500
Technical Advisor	\$125,000
Strategy Identification	\$50,000
SIP Template	\$50,000
Identification of BART Controls	\$200,000
VISTAS Webpage Operation and Maintenance	\$5,000
Ambient Monitoring – Augmentation Of Existing Sites/Deployment Of Additional Monitoring	\$500,000
Installation, Operation And Maintenance Of New Radar Profiler	\$395,000
Maintenance Of Existing State Operated Radar Profilers	\$100,000
Emissions Modeling	\$130,000
Air Quality Modeling and Web-based Modeling Data Storage	\$360,000
Total	\$2,227,500
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region (includes \$50,000 in grant holdback to the WRAP)	\$50,000
Grand Total	\$2,277,500

2004 Work Assignments	Dollars
Administrative operations (includes salaries, the technical coordinator contract, office operations, travel, meeting/conference logistics, and training)	\$312,500
Technical Advisor	\$132,000
VISTAS Webpage Operation and Maintenance	\$5,000
Ambient Monitoring – Augmentation Of Existing Sites/Deployment Of Additional Monitoring	\$500,000
Installation, Operation And Maintenance Of New Radar Profiler	\$395,000
Maintenance Of Existing State Operated Radar Profilers	\$150,000
Economic Analysis	\$75,000
Emissions Inventory Refinement and Modeling	\$330,000
Air Quality Modeling and Web-based Modeling Data Storage	\$650,000
Visibility Analysis	\$75,000
Maintenance of SAMI modeling efforts on the web so that, as VISTAS modeling progresses, we will have access to the SAMI work for comparison, use, and avoidance redundant work being done by the VISTAS air quality modeling contractor (This will cover August 2004 – August 2006)	\$30,000
Total	\$2,654,500
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region (includes \$50,000 in grant holdback to the WRAP)	\$50,000
Grand Total	\$2,704,500

2005 Work Assignments	Dollars Needed
Administrative operations (includes salaries, the technical coordinator contract, office operations, travel, meeting/conference logistics, and training)	\$325,000
Technical Advisor	\$139,000
VISTAS Webpage Operation and Maintenance	\$5,000
Ambient Monitoring – Augmentation Of Existing Sites/Deployment Of Additional Monitoring	\$500,000
Installation, Operation And Maintenance Of New Radar Profiler	\$395,000
Maintenance Of Existing State Operated Radar Profilers	\$150,000
Emissions Inventory Refinement and Modeling	\$300,000
Air Quality Modeling and Web-based Modeling Data Storage	\$950,000
Visibility Analysis	\$75,000
Final Analyses/Report Preparation/Materials for States/Tribes to prepare SIPs/TIPs	\$200,000
Total	\$3,039,000
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region (includes \$50,000 in grant holdback to the WRAP)	\$50,000
Grand Total	\$3,089,000

Summary of Costs for 2002 - 2005

Year	Cost
2002	\$1,300,000
2003	\$2,277,500
2004	\$2,704,500
2005	\$3,089,000
Total	\$9,371,000

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John E. Hornback, SESARM/VISTAS Exec. Dir.

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Appendix A
VISTAS Timeline