

VISIBILITY IMPROVEMENT - STATE AND TRIBAL ASSOCIATION OF THE SOUTHEAST
REGIONAL PLANNING ORGANIZATION OF THE SOUTHEAST
MULTI-YEAR WORK PLAN

Original Completed: December 21, 2001
Revised: March 4, 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 FY2001 federal funding. Over the last year, States and Tribes in the southeast have worked together to create the collaborative effort known as Visibility Improvement - State and Tribal Association of the Southeast (VISTAS). VISTAS has been charged with planning regional haze activities for the southeastern United States. SESARM is, and will continue to be, the organization receiving the federal funding for VISTAS activities.

It is anticipated that this grant will fund certain VISTAS activities, as identified in this work plan, through December 31, 2003. Total federal funding associated with this grant and work plan is \$500,000.

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.

A. Meteorological Modeling

Estimated Budget: \$300,000
Proposed Completion Date: December 30, 2003

In order to begin the technical analysis for addressing regional haze, the first input is the meteorological modeling to provide wind speed and direction, temperature, solar radiation, clouds and other meteorological parameters. The purpose of this task is to execute the meteorological model VISTAS selects for this analysis. The meteorological 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 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. 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 time. 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 by mid-2002 based on the additional data collection that can be accomplished to support model validation. 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 tasks covered in the RFP will include documentation of model set-up, execution and evaluation; periodic reports on the modeling task; presentations to the VISTAS workgroups, Coordinating Committee, and STAD, as well as the modeling discussion group that the five RPO's participate in; and development of the protocol for the meteorological modeling. The work will involve evaluation of the meteorological model's performance, as well as any necessary changes to the model inputs and any required reprocessing prior to use in the air quality model. The work will be peer reviewed by the VISTAS technical advisor, along with potentially other groups, such as the RPO modeling discussion group. The work shall also include the data storage and web page maintenance for this modeling process. VISTAS will work with other RPO's to try and cost share this effort, but for planning purposes, the expected full amount is included in this work plan. To the extent that these collaborations change the scope or cost of VISTAS' efforts, this work plan will be updated as needed.

B. Development of Emission Inventory for Modeling

Estimated Budget: \$100,000
Proposed Completion Date: June 30, 2003

A separate effort is underway to develop a 2002 PM_{2.5} emission inventory for the ten VISTAS states. This emission inventory effort is intended to augment that effort by doing the following: developing 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., NH₃ from animal operations). The work is in the process of being defined by the VISTAS Technical Analysis Workgroup and will be contracted out through an RFP process. VISTAS intends to work with other RPO's to cost share these activities, particularly 2002 inventories for states outside the VISTAS region, but for planning purposes, the expected full amount is included in this work plan. To the extent that these collaborations change the scope or cost of VISTAS' efforts, this work plan will be updated as needed.

C. Episode Selection

Estimated Budget: \$ 70,000
Proposed Completion Date: June 30, 2004

While the models will potentially be run for a year, an evaluation of when the 20 percent best and worst days have occurred in the 2002 base year modeling period is necessary in order to devote appropriate resources to evaluate and understand these types of days. It is unrealistic to

do an intense and thorough evaluation for an entire year for the meteorological, emission and air quality modeling, but a focused effort can be done to understand the modeling strengths and weaknesses during the 20 percent best and worst events. Additionally, resources can then be directed to improving model performance on these key days. This effort will be done through a contract effort following the RFP process.

D. Modeling Protocol Development

Estimated Budget: \$ 30,000

Proposed Completion Date: December 31, 2003

A modeling protocol outlining how the RPO intends to set-up, execute and evaluate the models within the modeling system is needed to direct the modeling process and so the public and interested parties understand how VISTAS will accomplish these tasks. This effort will be done through a contract effort following the RFP process. The contractor will work with other VISTAS' contractors, such as the meteorological modeling contractor to develop the modeling protocol. The modeling protocol will be developed following EPA's draft, "Guidance for Demonstrating Attainment of Air Quality Goals for PM2.5 and Regional Haze." Once the protocol is complete, it will be a living document and will be updated through the efforts of the members of the Technical Analysis Workgroup. VISTAS will work with other RPO's to develop common sections of the modeling protocols, where appropriate.

E. Reporting

Per the John Seitz memorandum entitled, Funding Criteria for Regional Planning Bodies, dated August 27, 1999, quarterly reports shall be submitted to EPA Region 4 outlining accomplishments of VISTAS. These reports shall include notice of any issues that will prevent tasks from being met on schedule.

F. 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.

2002 Work Assignments	Dollars
Administrative (includes salaries, office operations, travel, meeting/conference logistics, and necessary training.)	\$252,000
Continuation of identification of BART eligible sources	\$25,000
Participation in national ambient air monitoring database and additional contract analyses for VISTAS region.	\$110,000
Ambient monitoring – augmentation of existing sites/deployment of additional monitoring	\$500,000
Develop a description of the haze problem in the VISTAS region per draft modeling guidance.	\$50,000
Maintenance of existing state-owned radar profilers.	\$75,000
Data analyses for assessing contribution to visibility impairment	\$50,000
Comprehensive 2002 Annual Emissions Inventory (EI) to support modeling and assessment of speciated PM _{2.5} . Inventory is 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 redundant work being done by the VISTAS air quality modeling contractor. This will cover a two year time period.	\$30,000
Execute the emissions model to develop speciated, temporalized, gridded emissions inventory inputs for the air quality model.	\$150,000
Begin work efforts to process meteorological and emission inputs through the air quality models and evaluate model performance.	\$250,000
Total	\$1,742,000

2003 Work Assignments	Dollars
Administrative (includes salaries, 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	\$5000
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region	\$100,000
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	\$2,327,500

2004 Work Assignments	Dollars
Administrative (includes salaries, office operations, travel, meeting/conference logistics, and training)	\$312,500
Technical Advisor	\$132,000
VISTAS Webpage Operation and Maintenance	\$5000
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region.	\$100,000
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 a two year time period.	\$30,000
Total	\$2,754,500

2005 Work Assignments	Dollars Needed
Administrative (includes salaries, office operations, travel, meeting/conference logistics, and training.)	\$325,000
Technical Advisor	\$139,000

VISTAS Webpage Operation and Maintenance	\$5000
Participation In National Ambient Air Monitoring Database And Additional Contract Analyses For VISTAS Region.	\$100,000
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	\$200,000
Total	\$3,139,000

Summary of Costs for 2002 - 2005

<u>Year</u>	<u>Cost</u>
<u>2002</u>	<u>\$1,742,000</u>
<u>2003</u>	<u>\$2,327,500</u>
<u>2004</u>	<u>\$2,754,500</u>
<u>2005</u>	<u>\$3,139,000</u>
<u>Total</u>	<u>\$9,963,000</u>

Summary of Funding and Work Under Federal FY01 Grant

Major Task	Proposed Completion Date	Funding Level
Meteorological Modeling	December 31, 2003	\$300,000
Emission Inventory Development	June 30, 2003	\$100,000
Episode Selection	September 30, 2003	\$70,000
Modeling Protocol Development	December 31, 2003	\$30,000
Total Funding for FY01 Grants		\$500,000

Appendix A

VISTAS Timeline