

VISIBILITY IMPROVEMENT - STATE AND TRIBAL ASSOCIATION OF THE SOUTHEAST

REGIONAL PLANNING ORGANIZATION OF THE SOUTHEAST

FFY 2003 WORK PLAN

June 23, 2003

The Southeastern States Air Resource Managers (SESARM) submits to the United States Environmental Protection Agency (EPA) a work plan for regional haze activities associated with FY 2003 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 to meet a schedule for regional haze SIP submittal to EPA by December 31, 2007. 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 2003 Work Assignments

VISTAS FY 2003 Budget Summary

FY 2003 Work Assignments	Proposed FY 03 Dollars
Administrative operations (includes salaries, technical coordinator contract, office operations, travel, meeting / conference logistics, and training)	\$312,500
Technical Advisor – Atmospheric Modeling	\$50,000
Technical Advisor – Emissions Inventory	\$75,000
Strategy Identification	\$50,000
Future Year Emissions projections – initiate design	\$50,000
VISTAS Webpage Operation and Maintenance	\$7,500
Ambient Monitoring (Continued Operation Of Existing Focus Sites for 2 additional quarters)	\$170,000
Source Apportionment Techniques (Chemical Mass Balance to define primary sources of organic carbon for 1 Class I area; CATT tool)	\$115,000

Maintenance Of Existing Radar Profilers	\$30,000
Meteorological Modeling– 2 nd year	\$100,000
Emissions and Air Quality Modeling – 2 nd year : \$400,000 Task to install and demonstrate emissions sensitivity module in CMAQ initiated summer 2003	\$565,000
Characterization of Meteorology in Class I.	\$125,000
Total	\$1,650,000
Participation In VIEWS National Ambient Air Monitoring Database (grant holdback to the WRAP)	\$50,000
Grand Total	\$1,700,000

Description of FY 2003 proposed projects

Administrative Operations

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.

Technical Advisor – Atmospheric Modeling and Data Analysis

Dr. Ivar Tombach provides technical assistance to VISTAS in the design and implementation of the technical assessment and review of technical products under an existing contract. An important focus of his work is in the modeling area. Dr. Tombach was hired in 2002. His services will continue through 2005, supported by additional funding from this grant.

Technical Advisor – Emissions Inventory

VISTAS posted a request for proposals for a technical advisor to oversee emissions inventory contracts in May that closed on June 6, 2003. The selection process will be completed in June and a contract is expected to be in place in early July. The assignment will continue through FY 2005. This individual is expected to advise VISTAS on emissions inventory improvements, assist in development of requests for proposals, assist in the public planning process to design emissions control strategies, and review inventory products.

Strategy Identification

VISTAS intends to develop a menu of potential emissions control options for point, area, and mobile emissions sectors. Growth factors for targeted future years, available emissions reduction technologies, and costs of controls will be identified. This information will assist VISTAS in designing emissions control strategies to be tested in the atmospheric modeling process. The Technical Advisor for Emissions Inventory will facilitate this process beginning in the fall of 2003.

Emissions Projections

The VISTAS 2002 base year inventory is being developed for VISTAS by MACTEC, Inc. (point and area sources) and E. H. Pechan and Associates, Inc. (mobile on-road vehicles and non-road engines). The draft inventory will be delivered in June 2003 and finalized in the fall of 2003. FFY 2003 funding allows VISTAS to initiate development of a future year inventory for the year 2018. VISTAS will issue a request for proposals for this work during August 2003 and hire a contractor by late fall of 2003. Growth assumptions and control strategies that were developed under the proceeding strategy identification project will be used to develop future year inventories in this project. Additional funding will be required in FFY 2004 to complete the future year inventory and to deliver future year emissions control strategies.

VISTAS Website

Todd Barrett has recently become the VISTAS webmaster. Previously the effort was provided as an in-kind service from the North Carolina Division of Air Quality. The webmaster will work to redesign the VISTAS website and to post technical products as they become available.

Ambient Monitoring

FFY 2003 funding will allow VISTAS to continue operation and data archive for several monitoring efforts initiated in 2003. These activities include:

- Continuous monitoring of sulfate, nitrate, and carbon at three Focus sites (Look Rock in the Great Smoky Mountains National Park, TN; Cape Romain Wilderness Area, SC; and Milbrook, NC). These sites were chosen because measurements of surface meteorology, ozone, gaseous precursors, and speciated fine particle mass are also already collected at these sites. The FFY 2003 VISTAS Ambient Monitoring budget is sufficient to support operation of the continuous monitors at the 3 Focus sites for an additional 6 months.
- Operation of monitors and data archive for trace gases at Great Smoky Mountains National Park. The FY 2003 budget covers an additional year of monitoring.
- Analysis of ammonium from IMPROVE samples for 13 of 15 IMPROVE sites in the VISTAS region. The FY 2003 budget will continue these analyses for another 12 months.
- Operation of a nephelometer at Cape Romain. VISTAS has requested EPA to transfer ownership of 1-2 nephelometers that are no longer being used in the CASTNET program. VISTAS is waiting for EPA permission to begin operation at Cape Romain. FY 2003 funding provides for installation and one year's operation of at least one nephelometer.

These data will be used to evaluate performance of photochemical modeling and support understanding of temporal and spatial variation in baseline conditions.

Data Analysis

Air Resource Specialists, Inc. has characterized the components of fine particle mass and their contribution to visibility in the VISTAS region using available data for 1998-2001 from Interagency Monitoring of Protected Visual Environments (IMPROVE) sites, from the Southeast Aerosol Research Characterization study (SEARCH), and from the EPA Speciated Trends Network. These analyses will be extended to include the 2002 monitoring data. VISTAS intends to initiate Chemical Mass Balance analyses of sources of primary organic carbon at one Class I area in the VISTAS region. Chemical Mass Balance analyses will identify the relative contributions of primary sources of organic carbon (e.g.; gasoline, diesel, wood smoke, vegetative detritus, dust, etc.).

Maintenance of New and Existing Radar Profilers

VISTAS will support, as necessary, maintenance and repair of new and existing radar profilers at several locations in the Southeastern US. Funding was first committed in FY99 and is being spent only as necessary to assure credible monitoring data.

Meteorological Modeling

Baron Advance Meteorological Systems, Inc. is currently evaluating performance of several alternative configurations of the MM5 meteorological model for 3 episodes in July 1999, July 2001, and Jan 2002. Runs are being made for the national modeling domain using a 36 km grid and for the eastern US using a 12 km grid. The modeling protocol for annual base year modeling will be delivered in the fall of 2003 and annual modeling using 36 and 12 km grids will begin in December 2003. FY 2002 funding is sufficient to begin, but not to complete, VISTAS' annual base year modeling. FY 2003 funds will allow completion of the annual base year meteorological modeling during FY 2004.

Emissions and Air Quality Modeling

ENVIRON, University of California at Riverside, and Alpine Geophysics are evaluating the performance of several alternative configurations of the SMOKE emissions model and of two integrated, one-atmosphere air quality models: CMAQ and CAMx. Performance is being evaluated for three episodes in July 1999, July 2001, and Jan 2002 using 36 and 12 km modeling grids consistent with the meteorological modeling. The modeling protocol for the annual base year modeling will be delivered during December 2003 and annual emissions and air quality modeling will begin as soon as meteorological inputs are available. FY 2002 funding is sufficient to begin model evaluation. FY 2003 funding is necessary to complete modeling evaluation and to initiate annual emissions and air quality modeling in 2004. An additional \$950,000 is estimated to be needed in the FY2003 or 2004 budgets to complete the annual base year modeling, annual future base year modeling, and future year emissions strategy runs. VISTAS emissions and air quality modeling will be used to support VISTAS states in the development of state implementation plans for regional haze. VISTAS' annual base year modeling is also being designed to meet the requirements for annual base year modeling for PM_{2.5} nonattainment areas. All model-ready input and output files will be provided to VISTAS and VISTAS states for application to model emissions control strategies for PM_{2.5} attainment.

Geographic Sensitivity Analyses

The Direct Decoupled Method (DDM) provides a sensitivity analysis tool to project changes in air quality at specific receptors in response to changes in emissions in specific source areas. DDM is operational with gas phase chemistry in CAMx and in CMAQ, but currently DDM is not operational with aerosol chemistry in either model. Within the FY2003 budget, VISTAS has identified \$150,000 to support development and installation of DDM-PM in CMAQ. As well, VISTAS is interested in funding a demonstration of DDM-PM in CMAQ for the three episodes used for model performance evaluation.

Characterizing Meteorology

VISTAS will post a request for proposal to characterize the relationships between meteorology and components of fine particle mass and visibility in the VISTAS region. This information will be used to identify the frequencies of occurrence of specific meteorological conditions at a single site and the commonality of occurrence of such conditions across the VISTAS region. This information will also be used to understand how the period selected for atmospheric modeling represents the baseline period for regional haze modeling.

IEWS National Ambient Air Monitoring Database Archive

VISTAS continues to participate in IEWS, national data website and archive. Each year, \$50,000 is withheld from VISTAS budget allocation and transferred to the WRAP to manage on behalf of all the RPOs.

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.

Signature.

[Original Signed By]

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

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