

Draft Minutes
VISTAS Data Workshop
January 15-16, 2002

The Data Workshop Agenda and list of attendents follow this summary. Speakers' presentations are posted to the VISTAS website at <http://vistas-sesarm.org/data/dataminutes.htm>.

Ted Russell, Georgia Tech, and Sharon Douglas, SAI, discussed monitoring data needs to support regional air quality modeling. Sharon Douglas also explained the application of CART analyses to select episodes for atmospheric modeling. Michael Chang and Ted Russell, Georgia Tech, summarized monitoring under the Georgia Fall Line Air Quality Study and the Atlanta ASACA study. Eric Edgerton, ESE, and John Jansen, SOS, presented monitoring results from the SEARCH aerosol monitoring network. Roger Tanner, TVA, presented results of aerosol monitoring at Great Smoky Mtns and other sites in the Tennessee Valley. John White, NC, summarized available meteorological monitoring data. Dick Karp, Mineral Management Services, discussed siting a radar profiler on the Gulf Coast. Joe Adlhoch, Air Resource Specialists, summarized monitoring data available at IMPROVE sites.

Workshop participants developed priorities for supplemental monitoring in 2002 and identified longer-term monitoring goals. The VISTA data workgroup has budgeted \$150K in 2002 for supplemental monitoring to support VISTAS atmospheric modeling. Nationally the regional planning organizations are considering daily modeling for either the calendar year 2002 or a modeling year beginning May 2002. Ideally VISTAS would like any supplemental monitoring to be installed by summer 2002.

Priorities for 2002:

- 1) Add continuous (hourly) speciated PM_{2.5} monitoring capability at selected existing sites with speciated PM_{2.5}. Ideally an expanded site would monitor:
 - a) Meteorology
 - b) PM_{2.5} mass, SO₄, NO₃, NH₄, EC, and OC
 - c) tracer gases: SO₂, NO_y, CO
- 2) Relative Humidity monitoring added at IMPROVE sites where not currently measured and where infrastructure for monitoring is available
- 3) Archive samples from speciated PM_{2.5} monitors operating every 3rd or every 6th day to analyze in the future for speciated organic fraction PM_{2.5} and NH₄, as funding available
- 4) Add upper air measurements to improve understanding of vertical structure for temperature, winds.

- 5) Consider role for additional optical measures at IMPROVE sites or continuing archival of camera data at IMPROVE sites. Optical measures have been correlated to reconstructed extinction; measures have been discontinued at some USFS sites.
- 6) Write separate proposal and justification for intensive monitoring in fall/winter 2002 or summer 2003.

Workgroup participants began a list of existing monitoring sites where speciated PM2.5 monitoring is ongoing.

Continuous speciated PM2.5 monitoring in the VISTAS states:

- 1) 8 SEARCH paired urban and rural in GA, FL, AL, MS
- 2) 3 EPA is funding a total of 3 sites, one each in GA, SC, and NC, proposed to be colocated with the Eastern Supersites (ESP01). The group suggested that EPA and the states consider colocating at least one continuous monitor at an IMPROVE site rather than an urban sites (e.g. relocate from Charleston urban to Cape Romain coastal).

Other speciated PM2.5 monitoring:

- 1) State sites collect speciated PM2.5 every 3rd or every 6th day
- 2) IMPROVE sites collect speciated PM2.5 every 3rd day
- 3) TVA has conducted intensive studies with continuous speciated PM2.5 monitor colocated with the IMPROVE site at Look Rock in GRSM.
- 3) TEOM samplers collect PM2.5 mass continuously.
- 4) CASTNET sites collect weekly composite wet and dry deposition (dry deposition is based on aerosol mass times a constant deposition factor for each species), also temp or relative humidity

Air Resource Specialists has been selected by VISTAS to collection and analyze existing data relevant to PM2.5 and regional haze. Joe Adlhoch, ARS, attended the workshop and will continue the effort to gather, organize, and analyze the existing aerosol and visibility data.

Workshop participants also discussed speakers' recommended monitoring data needs to support atmospheric modeling. ARS will use this discussion as part of its task to identify data gaps and recommend which gaps should be addressed.

- 1) Model input data
 - a) Meteorology
 - Cloud formation
 - Vertical structure of temperature and winds
 - Precipitation
 - Relative Humidity for visibility calculations

- b) Initial/boundary/background air quality conditions
 - SO₂ and NO_x: to better establish spatial variation and to serve as tracer for specific source
 - Vertical structure

- c) Emissions factors
 - Primary PM_{2.5} emissions (intensive field studies)
 - Speciated organic carbon emissions
 - NH₃ emissions
 - Elemental Carbon
 - NO_x, CO, SO₂ as tracer gases

- d) Model development/representation of chemical transformations
 - Gas to aerosol reaction rates: H₂O₂, NH₃, HNO₃
 - Conversion of primary to secondary organic carbon: Speciated organic carbon

- e) Model output performance evaluation
 - Meteorology
 - Temporal frequency of monitoring on same time scale (hourly) as models
 - Spatial representation: Class I areas in mountainous and coastal areas, rural areas, urban areas
 - Emissions sources
 - Speciated PM_{2.5}
 - Speciated organic carbon
 - Trace gases (e.g. CO, NO_y, SO₂)
 - Deposition chemistry

- f) Air Quality Management
 - Tracking compliance with PM_{2.5}: PM_{2.5} mass
 - Tracking progress for regional haze: IMPROVE
 - Source characterization

- g) Visibility Analyses
 - Evaluate assumptions to calculate extinction
 - Evaluate water content of aerosols
 - Evaluate need to increase measurement of optical parameters, particularly for coastal Class I areas
 - What is role of sea salt on visibility?

Mineral Management Services owns two radar profilers which are currently not in operation. Dick Karp, MMS, offered VISTAS use of one of the profilers plus a commitment to partial fund the operation in FY2002. MMS requires that the profiler be operated on the Gulf Coast. John Jansen, Southern Company Services, offered to cofund

operation of the profiler in FY2002 and encouraged MMS to include operational budget for the profiler in FY2003. This project would be managed in parallel to VISTAS efforts, but would not be directly managed by VISTAS. Ideally the profiler would be sited and ready for operation by May or June 2002 to provide information on the coastal boundary during the target model year. A subgroup including Sheila Holman, Dick Karp, John Jansen, and the states of MS, AL, and FL was charged with resolving the location, funding, and installation of the profiler.

Action Items:

- 1) ARS to collect and analyze existing monitoring data under contract to VISTAS data workgroup
- 2) Small workgroup to resolve deployment of MMS radar profiler
- 3) Small workgroup to be formed to develop proposal for intensive monitoring to support VISTAS modeling

Attendance VISTAS Data Workshop January 15-16, 2002:

John White, Dale Kemmerick, Pat Brewer, Sheila Holman, Renee Shealy, Mary Peyton Davis, Chris Arrington, Tim Carroll, Dave Roberts, John Hornback, Joe Adlhoch, Scott Reynolds, Eric Edgerton, Dave Flannery, Krishnan Kandasamy, Bill Murphey, Mike Teague, Skipp Kropp, Pat DalPorto, John Jansen, Sharon Douglas, Charles Bonner, Tim Stone, Maudood Khan, Jim Boylan, Dan Cohan, Tim Martin, Roger Tanner, Tom Siednoff, Jim Osborne, Liz Peuler, Dick Karp, Steve Ewald, Jim Renfro, John Calcagni, Bruce Bayle, Jay Haney, Eldewins Haynes, Mark Aquilar, Ted Russell, Talat Odman, Shinichi Doki, Hitoshi Kunimi

Agenda follows.

FinalAgenda
VISTA Data Workshop
Atlanta Federal Building
January 15 - 16, 2002

January 15

1:00 Welcome, Introductions, and Workshop Objectives

1:15 Brief Overview of existing speciated PM2.5 monitoring sites: Renee Shealy, SC

1:25 Regional meteorological and air quality modeling needs for monitoring data for model performance evaluation: Ted Russell, Georgia Tech

1:55 Regional air quality modeling needs and approach to episode selection: Sharon Douglas, ICF Consulting

2:50 10 min break

3:00 Fall line Air Quality Study (FAQS) and Atlanta (ASACA) measurements: Micheal Chang and Ted Russell, Georgia Tech

3:40 SEARCH and related speciated aerosol monitoring data and preliminary results: John Jansen and Eric Edgerton

4:30 Adjourn

January 16, 2002

9:00 TVA speciated aerosol monitoring data and preliminary results: Roger Tanner, TVA

9:30 Meteorological and aerosol monitoring data locations: John White, NC

10:15 Opportunity for VISTAS to operate radar profiler owned by Mineral Management Services – Dick Karp, MMS

11:15 IMPROVE monitoring summary: Joe Adlhoch, Air Resource Specialists

lunch

12:45 – 3:00 Group Discussion of data gaps and monitoring priorities
Action items and assignments for next steps