

MANE-VU
Mid-Atlantic/Northeast Visibility Union

**LONG RANGE STRATEGY
FOR
REGIONAL HAZE PLANNING**

December 2001 Revision

Prepared by the
Ozone Transport Commission

In cooperation with the

Northeast States for Coordinated
Air Use Management (NESCAUM)

and

Mid-Atlantic Association for Regional
Air Management (MARAMA)

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**Mid-Atlantic/Northeast Visibility Union (MANE-VU)
Long Range Strategy for Regional Haze Planning
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I. Overview of this Long Range Strategy

A. Background

By finalizing the regional haze rule in mid-1999, and funding regional planning organizations across the country, the U.S. Environmental Protection Agency (EPA) started in motion a process for States and Tribes to address regional haze. The rule strongly endorses regional planning. On July 24, 2001, the Mid-Atlantic/Northeast Visibility Union (MANE-VU) was formed at its Board's first meeting. Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Jersey, New Hampshire, New York, Pennsylvania, the Penobscot Indian Nation, Rhode Island, the St. Regis Mohawk Tribe and Vermont are participating in this effort, along with EPA and Federal Land Managers (see July 24, 2001, Final Interim Operating Procedures).

The regional haze rule requires States and Tribes to make reasonable progress toward natural background conditions in major National Parks and wilderness areas designated by the Clean Air Act as Class I areas over a period of several decades. Because pollutants that cause haze are emitted over wide areas and are transported by winds, a regional program ensures improved visibility not only in parks and wilderness areas, but also in many other areas of MANE-VU's region. Regional air pollutants are inextricably related. EPA's Federal Advisory Committee Act (FACA) Subcommittee on Ozone, Particulate Matter, and Regional Haze stressed the interrelationships of ozone, particulate and regional haze air pollution problems. MANE-VU's work will develop technical analysis products that will illuminate the nature of the regional haze problem within the region. Given the linkages between regional haze and other regional pollutants, this work may also provide benefits to other regional pollutant programs. Section C, below, provides more details on the potential long-term integration of air pollutant programs.

To ensure reasonable progress towards reaching background conditions, the regional haze rule requires a sequence of periodic State Implementation Plan (SIP) revisions. (Tribes may submit Tribal Implementation Plans (TIPs).) This long range strategy focuses on the initial years of the program, including the initial regional planning SIPs and the first control strategy SIPs. Under the regional haze rule, States that attain the fine particulate (PM-fine) standard are required to submit SIP revisions within 12 months after EPA designation, unless they opt to participate in regional planning. As MANE-VU's members are participating in regional planning, and given the incentives within the final rule for regional planning, they are eligible to submit the preliminary and the subsequent control strategy SIPs on a schedule consistent with those of nonattainment areas. Under the terms of the rule, the latest date for submitting the first regional haze control strategy SIPs is December 31, 2008.

This document describes how MANE-VU members, with the support of the Ozone Transport Commission (OTC), the Northeast States for Coordinated Air Use Management (NESCAUM) and the Mid-Atlantic Regional Air Management Association (MARAMA), intend to approach regional haze planning. In Section B, below, Figure 1 and Tables 1 and 2 summarize MANE-VU's overall long range planning approach. Work plans for individual years will provide more detail on work in the context of annual grant applications.

B. MANE-VU Program Planning Overview

Figure 1, below, is a simplified diagram showing the staging of the various activities of the regional haze planning process. It is based on the regional haze rule, the traditional SIP planning process, and the activities in this strategy. Table 1 is a matrix that summarizes major strategy elements and the relative intensity of each activity over time. It shows how the emphasis progresses from developing fundamental technical information on the causes of regional haze to developing and implementing solutions to the problem. The strategy elements (e.g., monitoring and assessment) are described in more detail below. Table 2 provides a summary of potential year-by-year activities, starting with 2002, the third year in the regional planning effort. The activities in the out years are preliminary, because activities in these years are highly dependent on the results of projects and activities in earlier years, as well as funding availability.

FIGURE 1: The Regional Haze Planning Process

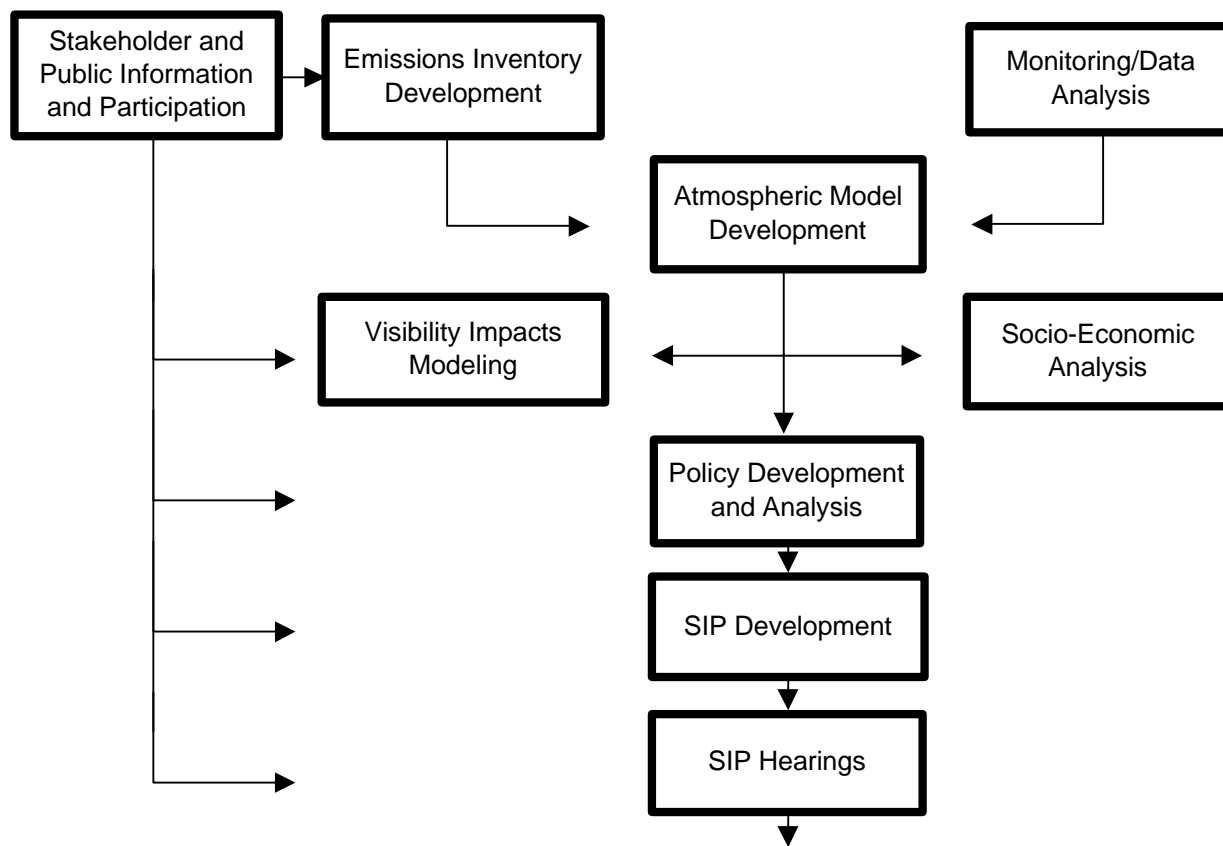


Table 1 - Summary of Long Range Strategy for the Mid-Atlantic/Northeast Visibility Union

	Numbers 1 through 3 indicate expected level of effort						
	Phase I		Phase II			Phase III	
	YR1 2000	YR2 2001	YR3 2002	YR4 2003	YR5 2004	YR6 2005	YR7 2006+
Monitoring and Assessment Collect/assess data, ID best/worst days, evaluate natural conditions, develop conceptual model, document/refine network, cameras, analyze secondary organic aerosols	3	3	2	1	1	2	1
Modeling (including receptor models) Evaluate/select models, develop inputs/protocols, verify base years, sensitivity runs, estimate in/out region reductions, state contributions, control scenarios, socioeconomic analysis links	1	1	2	2	3	3	1
Inventory ID weaknesses, complete ammonia inventory, develop state-by-state inventories and out-of-region inventories, emissions modeling and projections, account for expected/potential controls, contract support	2	3	3	2	2	1	1
Training Science of haze, role of transport, inventory models, dispersion models, receptor models, photochemical grid models, BART, control options, SIP development	2	2	2	1	1	**	**
Planning Body Establish by-laws, finalize membership, regional meetings, biannual meetings/coordination with other bodies, stakeholder meetings, briefing documents, public hearings on regional SIP (if applicable)	2	2	2	2	2	2	1
Regulatory Efforts Establish baseline and natural conditions, ROP goals, economic impact assessment, state and regional SIPs, public hearings	1	1	1	2	2	3	3
Control Strategy Assess control options, ID BART-eligible sources/technology, evaluate market-based approaches, co-benefits, implementation schedule	**	1	1	1	3	3	1
Other Study past efforts, website, outreach	1	2	1	2	2	2	2
Major Regulatory Milestones Data for baseline conditions PM2.5 attainment designation 1st SIP (describe monitoring network, commit to regional process, BART eligible source list) ¹ 2nd SIP (Establish baseline and natural conditions, ROP goals, BART determinations, control program) ² SIP review and adjustment (2013) 3rd SIP (2018)	X	X	X	X X	X X	X	X

Level of Effort: 1 = Low, 2 = Moderate, 3 = High, ** = minimal

¹ Assumes states opt for a regional process. For those that do not, 1st SIP due 3 years after PM2.5 designations and must be comprehensive.

² Could be due in 2007-08 depending on PM2.5 designation process.

TABLE 2: Year-by-Year Summary of Potential Tasks

Year 3: February 2002 – January 2003: Initiate SIP Development Activities

- Begin enhanced monitoring and assessment activities to support base year modeling effort
- Develop specific data inputs for a model to address fine particle formation and transport in MANE-VU's region
- Assist States in compiling inventories
- Implement training to meet state/tribal needs
- Develop special meetings for relevant technical and policy issues
- Work on establishing baseline and natural conditions, and other relevant regulatory concepts
- Continue source attribution analysis for Class I areas
- Develop a process for the identification of BART-eligible sources
- Start integrating regional haze into regional public information activities

Year 4: February 2003 – January 2004: Continue SIP Development Activities

- Continue source attribution analysis for Class I areas
- Compile and evaluate regional fine particulate and IMPROVE monitoring data
- Evaluate additional monitoring needs and costs
- Continue construction of regional modeling tools
- Continue work on emissions inventories
- Continue to evaluate training needs and hold meetings
- Organize specific meetings on BART determinations
- Continue special meetings for any policy relevant issues, including potentially socioeconomic analyses
- Continue public information activities
- Support States in preliminary SIP development (regional planning SIPs)

Year 5: February 2004 – January 2005: Begin Major Regulatory Support and Control Strategy Activities

- Continue source attribution analysis for Class I areas
- Propose monitoring network improvements and enhancements
- Start simulation through modeling of control strategies
- Start to define control strategies, including evaluation of co-benefits and other socioeconomic analyses
- Refine emission inventories
- Get feedback on specific control strategies from RPO participants
- Intensification of public information efforts
- Complete implementation of BART determination process
- Hold SIP development workshops and continue annual data analysis workshop series

Year 6: February 2005 – January 2006: Continue Activities Discussed Above

Year 7 or 8: February 2006 – January 2008: Conclude any Multi-State Agreements; States move ahead with SIP submittal process

C. Integrating Regional Haze Planning With Other Air Quality Initiatives

MANE-VU will use an integrated planning approach to assist its members in developing a cost-effective long-term strategy for improving visibility in its Class I areas. Members view the regional haze planning effort as a tremendous opportunity to leverage and enhance on-going efforts related to fine particles, ozone, acid deposition and other air pollution problems. It is consistent with the Ozone/Particulate Matter/Regional Haze FACA process, which sought opportunities to integrate planning, and implementation efforts for these pollutants. In this way, MANE-VU will maximize the funding provided for regional haze purposes.

The following are some examples of how the regional haze planning process will be integrated with other air quality goals and obligations in the Northeast and Mid-Atlantic region:

- The regional haze monitoring requirements are largely met with the emerging PM-fine network and the expanding IMPROVE network. MANE-VU will target regional haze program monitoring resources on speciation work to improve understanding of the chemical composition of fine particulate matter collected as a part of those efforts.
- MANE-VU will conduct comprehensive analyses of fine particulate and other monitoring data to improve understanding of the pollutants and sources that degrade visibility and their relationship with PM-fine and ozone. These analyses to understand and protect visibility in Class I areas will support efforts to address other air quality issues of critical importance in the Northeast and Mid-Atlantic region.
- In order to develop effective control strategy options, MANE-VU plans to conduct detailed source-receptor analyses to identify sources of SO₂, PM and NO_x that contribute to regional haze problems. The results of this work will help target additional control efforts on those sources that most affect the MANE-VU region.
- The emission inventory effort funded through MANE-VU will serve to upgrade the ozone precursor inventory and will also serve as a basis for the PM-fine inventory.
- The modeling needed to support the regional haze program to the extent possible will be integrated with modeling of other pollutants (e.g., ozone).
- MANE-VU will consider comprehensive field studies of its airshed similar to those conducted in Lake Michigan Region, the Southern Appalachians and California. This effort could build off the North American Research Strategy for Tropospheric Ozone (NARSTO)-Northeast initiative. This would improve the overall understanding of our airshed.
- Any controls implemented to address visibility degradation in Class I areas in the region will provide broader benefits because of the emissions reductions

These are examples of how MANE-VU will provide critical support to its members as they address regional haze and other air quality problems in the region. Efforts to protect visibility in Class I areas will also reduce visibility impairment in cities and towns, parks, beaches and wilderness areas that are not specifically targeted by the regional haze rule.

II. Anticipated Activities in Year 3 (2002)

Below is a brief summary of anticipated year 3 activities. More information is provided in the year 3 work plan.

A. Monitoring and Assessment

Calendar year 2002 may be used as the base year for emissions inventory and modeling activities that will be incorporated into the SIP process. With this in mind, efforts will be made in year 3 on enhanced monitoring and assessment, which may be used for model validation in subsequent years.

B. Modeling

Modeling activities in year 3 will go beyond the exploratory phase of years 1 and 2 that involved installing and becoming more familiar with such models as REMSAD and MODELS-3 and other feasibility assessments. In year 3, construction of the region-specific models for use in subsequent years will begin. Emphasis will be placed on developing a version of the model with regional data to specifically address fine particle formation and transport in the region. Preliminary meteorological and emissions data representative of the 2000-2004 time period, which is properly formatted for use in the selected air quality model, requires substantial effort to produce. Observational data from the monitoring networks is needed in a form appropriate for model comparison, including speciated measurement data and relative humidity data for the time periods to be modeled. Initial model runs may also focus on time periods that exhibit "average" visibility conditions, typical of the given location and season. During these initial stages of modeling activity, it is expected that the MANE-VU will serve a significant role in facilitating communication and coordination of modeling activities with its members, as well as among the other RPOs, on developing data inputs and modeling protocols. Initial studies will examine model sensitivity under different meteorological conditions and with different chemistry and emissions inputs. In doing these initial studies, the potential usefulness of eventual model outputs for subsequent evaluation of socioeconomic factors and co-benefits will be considered.

C. Emissions Inventory

Individual State inventories are critical inputs to modeling work, as well as other assessments. In year 3, MANE-VU plans to continue assisting States and interested Tribes in developing their respective inventories. The scope of work (internal and for any contractor assistance) will be based on the emissions inventory work plan developed in year 2. The quality of the inventory will be dependent on available funding. MANE-VU will work with its members to enhance regional emissions modeling capability, and ensure that the models have the necessary inputs. Obtaining comparable data outside MANE-VU's region will be investigated, as the modeling domain is anticipated to be larger than MANE-VU's region. Contractual work on inventory development will continue on an as needed basis in the areas of greatest need, assuming funding is available.

D. Training

Most of the training activities will fall under the purview of MARAMA, with involvement of NESCAUM, as well as OTC. There will be an ongoing evaluation of the need for training in meteorological processing, emission inventory, modeling, and data analysis. A workshop on SIP development will be initiated in year 3, beginning the process of developing model SIP submittals. An emission inventory workshop coordination meeting is anticipated, along with modeling training/coordination as needed. An annual data analysis workshop will be scheduled, and MARAMA and NESCAUM will continue to integrate regional haze topics into MARAMA and NESCAUM Monitoring Committee meetings/workshops.

E. RPO Coordination

Consensus building among participants is a basic principle reflected in MANE-VU's Final Interim Operating Principles adopted at the Board's first meeting on July 24, 2001. OTC will continue to work with MANE-VU members, as well as MARAMA and NESCAUM, toward consensus building to further develop MANE-VU's operations. This includes the Committee work, and the relationships between the Committees and the MANE-VU Board. Establishing norms and procedures over time will facilitate multi-jurisdiction agreements in the future.

Inter-RPO coordination, especially on technical matters, is expected to grow during year 3. OTC will continue to serve as overall liaison. NESCAUM and MARAMA, with key staff from MANE-VU's members, will spearhead the technical effort and represent MANE-VU in inter-RPO discussion groups. Agreements on some matters, such as data sharing protocols, emissions inventory formats, and modeling grid and projections are expected to be made in 2002, based on initial efforts in year 2.

F. Public Outreach and Communication

OTC will continue to manage activities of the MANE-VU Communications Committee, and find opportunities to co-function with the OTC Communications Committee. This will achieve economies of scale and will help to develop effective regional air pollution communication strategies. Building on the work of year 2, MANE-VU will enhance its web site in year 3. Processes for tracking and communicating with stakeholders will continue to be developed. Major outreach activities are not anticipated until year 4, when the SIP submittals start being developed.

G. Regulatory Support Efforts

Regulatory support efforts will be in the early stages in year 3. The monitoring and assessment activities are an effort to establish baseline and natural conditions, consistent with EPA's guidance and the regional haze rule. This year's priority is to work with States to develop the major elements of committal SIPs demonstrating on-going participation in the regional process. Another major effort will be to work with MANE-VU members to develop the initial list of BART-eligible sources and refine the source region description.

H. Control Strategies

As mentioned above, regulatory support activities in year 3 will involve further developing the identification of BART-eligible sources. The regulatory implications of the BART program will continue to be explored. Analysis of alternative implementation strategies to a source-by-source approach will also commence. Such strategies may involve sources in other sectors where reductions are expected to be reasonably available. Thorough evaluation of control strategies will require modeling capabilities that will not likely be in place until about year 5.

III. Longer Term Activities: Years 4 (2003) through 7 (2006)

During years 4 through 7, MANE-VU will focus on developing of regulatory support data and information. (After year 7, the focus will be on developing control strategies and any multi-jurisdiction agreements that may be needed.) The activities for this time period are elucidated below. Note that work required in any particular year depends substantially on the products of previous MANE-VU work, as well as the products of EPA's work, and available funding. Where appropriate, an estimate of the timing of activities, year by year, is indicated.

A. Monitoring and Assessment

In year 4 and 5, the monitoring and assessment activities will be at a lesser level of effort than inventory, modeling, and SIP development activities. Class I monitoring will continue to be implemented. Any enhanced monitoring of various types will be identified as a part of the regional monitoring strategy. This may focus, in part, on supplementing information for the 2002 potential base year, and is highly dependent on available funding. Assessment and resource valuation activities in year 4 and beyond will be subject to the constraints of available funding.

B. Modeling

Year 4 modeling activities will build on the previous years' activities. The primary emphasis will be to develop a fully functioning MANE-VU model, and to undertake a performance evaluation of this model. Specifically, models will be evaluated based on their ability to accurately reproduce observed levels of fine particles as well as the ability to calculate the relative mass fraction of primary and secondary particulate as measured in MANE-VU's region. This may include further sensitivity analysis of the model(s) to specific parameterizations (e.g., boundary layer height, clouds, etc.) and testing time periods when atypical conditions were experienced to determine how successful the model(s) is (are) at reproducing a variety of conditions. This will involve simulating time periods representative of "best" and "worst" visibility conditions when speciated fine particle and humidity measurements are available.

As modeling protocols are established, they will determine if an entire year is to be modeled or specific episodes, the domain to be studied and model resolution. This will require us to identify and obtain meteorological input data at the proper spatial and temporal resolution for the selected periods. MANE-VU will coordinate these activities with emission inventory activities, ensuring that refined inventories are incorporated as the project progresses. MANE-VU will also coordinate with other planning centers in the development of modeling protocols and exchange data inputs where appropriate.

During the year 5, it is anticipated that a preliminary modeling protocol will be in place and the primary data needs will have been collected. At this point, MANE-VU will be in a position to simulate a variety of control strategies on non-source specific emissions. Thus, work will primarily focus on carrying out the specific calculations outlined in this protocol and testing various control strategies in support of visibility goals. These will include calculations of individual state-by-state contributions to visibility reductions at each Class I area. Additionally, the MANE-VU will calculate the extent of regional reductions needed from inside and outside its region in order to achieve visibility goals. Coordination of members' activities at this point can significantly reduce duplication of efforts and strengthen the regional knowledge base for designing an effective plan for achieving visibility improvements. Continued interaction with the emissions inventory activities will be required to insure that the most up-to-date emissions information is included in model calculations. It is also anticipated that MANE-VU will continue to coordinate with other regional centers regarding any modifications to the modeling protocols.

During year 6 (2005), it is expected that a path toward visibility improvements, based on the simulations performed by member agencies in year 5, will have been chosen. Thus, full-scale modeling of the proposed control strategies will be undertaken to demonstrate reasonable progress between the initial base period of 2000-2004 through the target year of 2018. This will involve finalizing all input data and modeling protocols, calculating relative reduction factors needed for the specific components of PM, and identifying the geographical locations where reductions are required. Significant interaction between the modeling and control strategy development communities is expected during this time period, as the initial stages of SIP preparation will be underway. Unanticipated modeling runs may need to be performed in order to strengthen the case for the selected control strategy.

By the year 7, it is expected that the majority of modeling efforts will be focused on assisting with the final SIP process. Data resulting from modeling efforts will need to be clearly communicated in support of the control strategies adopted by MANE-VU members.

C. Emission Inventory

During year 4 (2003), the work on developing MANE-VU members' respective inventories will continue as required. MANE-VU will work with its member to compile expected emission reductions from current and planned control programs, and will prepare a preliminary assessment. Further contractual work on inventory development is anticipated to proceed as needed, and preliminary emissions modeling will begin.

Assuming that all of the work above has been completed (or nearly so), work with members on projection year regional inventories, and refining individual inventories can proceed in year 5. Work with other regions to merge refined inventories could also occur. MANE-VU will continue to work on quantifying expected emission reductions from current and planned control programs.

During the year 6, the projection year regional inventory and the coordinated multi-region inventory can be completed. A final assessment of expected emission reductions from current, planned and potential control programs will be prepared at that time. During the seventh and eighth years, MANE-VU will coordinate with individual members as they proceed to document their emission inventories for their SIP submittals.

At a point when inventory and modeling efforts are better defined, it will be important to reevaluate this schedule and make adjustments. States will be preparing periodic inventories for 1999 and 2002. It is also expected that monitoring data for the 2000-2004 period will be the basis for setting regional haze goals. Current consensus appears to be for 2002 as the base year for regional haze efforts. However, how this will be integrated with the overall schedule cannot be determined until status of the fine particle standard is clarified, since the regional haze schedule begins with the designation of fine particle nonattainment areas. Thus, the schedule for emissions inventory development requires further refinement and integration with other activities.

D. Training and Technical Coordination Meetings

In year 4 (2003), the evaluation of the needs for training will continue, and training support will be provided as needed. A workshop on BART determinations and control options could be presented, though this may have to be moved up to 2002. A workshop on the use of receptor models and/or photochemical grid models may be developed. Continuation of the SIP development workshop series is expected. An annual data analysis workshop is planned, and MARAMA and NESCAUM will continue to integrate regional haze topics into their Monitoring Committee meetings/workshops.

During the year 5 (2004), the ongoing training needs evaluation above will be continued. Greater emphasis will begin to be placed on assisting MANE-VU members in developing regional haze plan submittals. A third (and possibly fourth) workshop on SIP development is expected, with a focus on control strategy identification and evaluation, as is an annual data analysis workshop. MARAMA and NESCAUM will continue to integrate regional haze topics into their Monitoring Committee meetings/workshops.

During the sixth, seventh, and eighth years, needs evaluations will continue. However, it is expected that emphasis will be on preparing SIP submittals and control strategy evaluation. These activities will likely lead to an emphasis on technical coordination meetings rather than training, per se.

E. RPO Coordination

The nature and frequency of MANE-VU coordination activities will depend substantially on the products developed in other parts of the effort, and the need for decision-making. For example, technical work plans are presented to MANE-VU members, but do not typically require multiple meetings of decision makers to discuss the details. However, more directly policy-relevant documents are typically presented for a full discussion of policy makers, because such a discussion provides feedback on key questions and issues. Such feedback can be incorporated into the ongoing effort and reflected individual yearly work plans.

Effort on coordination activities will be focused when it is needed the most. In general, policy-relevant questions and decisions are more likely to occur in later years rather than earlier years. Selected policy-relevant issues, however, will need to be discussed early in the process. This will facilitate directing the overall effort towards developing acceptable SIPs within the time frame of the regional haze rule. Similarly, more technically oriented issues will need to be addressed by State and other participants responsible for technical issues within their agencies. Meetings, conference calls, faxing, e-mail messages, and other standard communications techniques will be used as needed. More frequent communication, including more frequent meetings, will be scheduled if issues (particularly policy-relevant issues) demand it.

MANE-VU's coordination efforts also include continued inter-RPO coordination. While this requires resources, such coordination supports the overall goals of the regional haze rule. Inter-RPO coordination, as expected, is first emphasizing technical matters, but likely will expand further to broader programmatic and strategy activities.

F. Public Outreach and Communication

The goal is to ensure that the public is aware of the regional haze issue, its interrelationship with other pollutants, and possible ways of addressing the problem by the time of SIP development. Public outreach and communication activities will increase as the regional planning process proceeds towards regulatory actions in year 4 and beyond. The general public, especially interested stakeholders, will want access to information generated by MANE-VU. The Communications Committee, operating in close coordination with the OTC Communications Committee, will continue to assess and develop effective means of communicating with a variety of audiences.

There are parallel messages regarding ozone and regional haze in terms of regionality and health effects. Some parts of the public still do not consider air pollution to be regional in scope. Therefore, the regional nature of haze, and its interrelationship with other pollutants will be a complex but necessary message to convey. In addition, an effective means of communicating the health benefits associated with reducing the concentrations of pollutants that cause haze will be needed. Regional haze reduction will also provide other aesthetic benefits for the region as a whole, beyond the Class I areas that are the subject of the regional haze rule. These are themes on which a public information program can be based. Communications mechanisms that have been used in the past, which will be considered for future use include:

- Press kits, brochures, pamphlets, and other written materials;
- Expanded MANE-VU website;
- Public information campaigns State-by-State;
- Coordinated press events across the region; and
- Clearinghouse of information that public information staffs can use.

G. Regulatory Support Efforts

A high priority for year 4 (2003) will be working with MANE-VU members on committal SIPs. This will involve assisting members in refining lists of BART-eligible sources, and coordinating the documentation of the source areas that contribute to visibility impairment in MANE-VU's Class I areas. Work will also continue with members on assessing potential BART controls and other region-wide haze reduction strategies.

During years 5 and 6, regulatory support work is expected to focus on developing control strategy SIPs. It is anticipated that the most intensive activities regarding potential agreements would be possibly in the sixth, and especially the seventh and eighth years. Accordingly, regulatory support studies in these years would most likely be focused on specific regulatory approaches that are to be considered for action by MANE-VU, including potential market-based mechanisms.

H. Control Strategies

After BART-eligible sources (and other sectors where reductions are expected to be reasonably available) have been identified, activities will focus on assessing control strategy options. BART control strategies will certainly be one strategy pursued; however, alternative reduction strategies will be assessed, including emissions trading options.

In year 5, the control strategy options identified can be analyzed in air quality models. A significant degree of coordination between the control strategy and modeling work will be required to insure that the range of options are explored and that the results of model analyses are communicated to regulatory personnel. Analyses of "baseline" conditions (i.e., no controls) will be compared to "BART" reduction strategies as outlined in the regional haze rule. These analyses will be further contrasted against a number of broad scenarios that exceed BART reductions, but provide flexibility in achieving reductions from a variety of locations and pollutant types.

Efforts in years 6 and 7 will focus on finalizing implementation schedules for BART or other control measures and communicating the results of model analyses to the regulatory efforts underway to prepare the SIPs.