

## **Recommendation by MARAMA Modelers Regarding Unified Domain/Inventory for Class I Area Modeling**

### Recommendation

During discussions at the recent MARAMA modeling workshop, the state/local modeling staff and representatives of the NPS and EPA expressed the need for a regional modeling initiative for Class I Area Modeling. NESCAUM is working on this type of unified inventory/modeling analysis for their Class I areas already. **MARAMA modelers would like to form a Class I Workgroup for exploration of a similar modeling initiative in our region. The workgroup would initially work on determining scope of the effort and resources required, as well as reaching an agreement on the process (as explained below in 4 and 5) for the purpose of developing an inventory and modeling system** that could be used by all applicants which could have an impact on Class I areas in the Mid-Atlantic region. MARAMA modelers would like to explore the possibility of working on this project in cooperation with NESCAUM. Developing a unified inventory and modeling system for Class I permit applicants would speed up the process, eliminate duplicate work, and provide a consistent baseline for examining impacts in Class I areas which would be helpful for regional haze work as well as permitting applications.

### Background

1. Over the past few years NSR/PSD permitting has significantly increased in the Mid-Atlantic Region. In particular the States of VA, WV, and PA and NJ have seen a two to threefold increase in permit applications. Class I areas are located in WV, VA, NJ, and NC. Therefore many permit applicants in the Mid-Atlantic are required to do a Class I increment and AQRV analysis. **A significant portion of time is spent obtaining inventories and performing modeling analysis for these Class I areas.** Unlike Class II areas, where the geographic area of concern varies based on pollution impacts of the applicant, the geographic area of concern for Class I areas is pre-determined. Therefore, a more efficient system for analyzing these areas could be developed.
2. Currently, **there is no database which maintains inventories** that are applicable to specific Class I areas nor is there any pre-set modeling domain that is used for these areas. Since large geographic areas (greater than 50 km) often need to be modeled, many emission sources are included and the analysis may involve inventories for several states. However, each state must individually contact the others to obtain the needed inventories for the applicants. There is no central database for this information. In addition, **there is no unified modeling domain** that has been developed for these areas. Therefore, the modelers must develop a new grid with new parameters, meteorology etc. for each application. These are very time consuming tasks.
3. Since Class I areas are geographically pre-determined, development of both an inventory and modeling domain along with a set of meteorology would be applicable for all Class I analyses in the Mid-Atlantic Region. As new sources come in or existing sources are modified, they would be added to the inventory. Modelers could obtain the inventory, domain and meteorological files easily, add in their new source, and perform the analysis. **The availability of such a system**

**would reduce the costs and time needed to prepare a permit application, and eliminate much of the duplicative work that now occurs.**

4. In order to develop such a system, **all state/local agencies, EPA, and the NPS and FWS would need to agree on the basic inventory, air model, modeling domain, and meteorology to be used.** The use of this system would be optional for applicants. Applicants could perform another analysis if appropriate. In order to develop this type of unified system for analyzing Class I areas, some changes from current Class I analysis methods may be required. Currently, the most recent meteorology would be used in an analysis. However, **if the parties mentioned above agree, a set of representative meteorological data could be prepared and perhaps updated on a regular basis such as every five years.** A schedule could be developed for updating “actual” inventory emissions. In order to develop this unified inventory/modeling domain all the State/local agencies in MARAMA and the NPS and FWS would have to agree on the specifics of the inventory and domain etc.

5. **Permit applicants in the region, the NPS and the FS have expressed interest and support for a regional Class I are modeling initiative.** It would be beneficial to include them in this process once it has begun and explore the possibilities of obtaining in-kind support or other funding from them.