

MARAMA

**Mid-Atlantic
Regional Air
Management
Association, Inc.**



Allegheny County Health Dept., Air Quality Program, Pittsburgh, PA.
District of Columbia Dept. of the Environment, Air Quality Division
Delaware Dept. of Natural Resources & Environmental Control, Air Quality Mgmt. Section
Maryland Dept. of the Environment, Air & Radiation Management Admin.
New Jersey Dept. of Environmental Protection, Division of Air Quality
North Carolina Dept. of Environment & Natural Resources, Division of Air Quality
Philadelphia Dept. of Public Health, Air Management Services
Pennsylvania Dept. of Environmental Protection, Bureau of Air Quality
Virginia Dept. of Environmental Quality, Air Division
West Virginia Dept. of Environmental Protection, Division of Air Quality

8600 LaSalle Road ~ Suite 636 ~ Towson, MD 21286

Phone 443.901.1882 ~ Fax 443.901.1886 ~ www.marama.org

February 9, 2011

Request for Proposals Concerning Emissions Inventory Development

A. Overview

The purpose of this request for proposals (RFP) is to obtain additional assistance in developing and/or updating regional emission inventories and quantifying predicted emissions reductions due to control measures. The regional emissions inventories will be used to support air quality modeling analyses, control strategy assessments, and other air quality management needs.

The Mid-Atlantic Regional Air Management Association (MARAMA) is a non-profit, voluntary association of ten state and local air pollution control agencies in the Mid-Atlantic Region. MARAMA is working with the Ozone Transport Commission (OTC) and the Northeast States for Coordinated Air Use Management (NESCAUM) to provide air quality technical and policy support for the states in the Ozone Transport Region (OTR) and in the Mid-Atlantic/Northeast Visibility Union (MANE-VU).

The OTR includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, and Virginia. Except for Virginia, these states are also included in MANE-VU, whose purpose is to coordinate regional haze planning for the region. In this document, the term "OTC states" includes all the states in MANE-VU plus Virginia.

With the support of MACTEC Engineering and Consulting and Alpine Geophysics, MARAMA has developed baseline emissions inventories for regional modeling for the years 2007, 2013, 2017, and 2020 for all sectors except on-road mobile sources and except future emissions from electricity generating units (EGUs). Emissions from on-road mobile sources are being developed separately in cooperation with NESCAUM and several OTC states. MACTEC is developing a program to be used to calculate future emissions from EGUs, which is expected to be completed by June 2011.

This RFP covers additional tasks for which contract assistance is needed in beyond that covered by MARAMA's current contracts.

The regional inventory will be used to concurrently address compliance with national ambient air quality standards (NAAQS) for ozone and fine particles and to evaluate progress towards long-term regional haze goals. Because similar pollutants and atmospheric processes affect the chemical formation and

transport of fine particles, ozone, and regional haze, similar technical analyses are necessary to evaluate air quality benefits of controls. The emissions inventories will support an integrated, one-atmosphere air quality modeling platform to support state air quality attainment demonstrations.

Coordination with the U.S. Environmental Protection Agency (USEPA) and use of approved methods is key. In addition, coordination with other regions and states outside the Mid-Atlantic and Northeast is desired to minimize costs and facilitate collaboration.

States may include portions of the regional emissions inventory in their State Implementation Plans for purposes of establishing reasonable progress targets, and there are specific EPA requirements that must be met, including format and documentation, to enable this use of the data. Inventory formatting and documentation should be adequate to facilitate evaluation of the effectiveness of control measures for relevant pollutants, averaging times, and geographic scales.

B. Sample Tasks

MARAMA plans to establish one or more contracts to include some or all of the following tasks. The decision about which tasks to undertake will depend in part on the estimated costs, and MARAMA may choose to omit certain tasks. Other related work may be assigned on an as needed basis.

Bids may include some or all of the listed tasks. More than one contractor may be selected. Cost estimates should be provided separately for each task for which a contractor wishes to be considered.

Each task must include preparation of a Quality Assurance Project Plan if needed, preparation of monthly progress reports, participation in periodic telephone conference calls with OTC states as needed, and periodic discussion with the MARAMA project officer. Emissions of all pollutants in MARAMA's 2007, 2013, 2017, and 2020 baseline inventories must be included.

TASK 1 - Baseline 2025 Emissions Inventory. Develop a baseline emissions inventory for the OTC states for the year 2025 for certain sectors. The inventory would be projected (grown and controlled) based on the existing 2007 MARAMA base year inventory and associated inventories for future years. This would include emissions from non-EGU point sources, area sources, and marine, air, and rail (MAR) sources. It is anticipated that growth would be a straight line projection using the projection factors developed for the 2013, 2017 and 2020 inventories. Control programs already identified would be extended to consider any further reductions. To the extent that states know of additional controls to be installed these will be provided by MARAMA. The contractor will collate, QA and document state inputs in a form suitable for a maintenance plan inventory. States may provide data in a variety of formats, including spreadsheets, comma delimited files or database files. The contractor will also standardize all state files on a single NIF format. States will generally be provided a two week review of the draft NIF format inventory to provide comments.

Bidders should provide costs by sector for Non-EGU Point, Area, and Marine/Air/Rail (MAR) sectors. In addition, bidders should break out the cost to develop ORL files.

Schedule: This task must be completed by June 30, 2011.

Deliverables: Draft and final Quality Assurance Project Plan (QAPP), NIF files, ORL files, documentation, summaries, and a power point presentation suitable for presentation of the results to a stakeholder briefing or meeting of OTC state management. The contractor will prepare documentation

of the work suitable for inclusion in state SIPs, including summary tables for each state at the county level by SCC, pollutant, and year. County level summaries will be provided as queries in an ACCESS database of the emissions.

TASK 2 - Preparation of future controlled and beyond on the way (BOTW) inventories and documentation.

This task will develop estimates of emissions for 2013, 2017, and 2020, including estimates of emissions reductions due to control measures to be included in State Implementation Plans (SIPs) and potential federal measures. Emissions reductions from both federal measures and measures developed states and the OTC process will be estimated and separately applied to each baseline future year inventory. For each future year, the result will be two inventories as follows:

- a) Future controlled inventories (including the measures states plan to include in their SIPs) and
- b) BOTW inventories (including both the state SIP measures and the potential federal measures requested from EPA).

a. OTC Measures –

States are evaluating possible controls via an OTC process to achieve further emission reductions to help demonstrate attainment of the ozone and PM2.5 NAAQS. Thus far, states have agreed to pursue measures affecting the following source categories:

- i. Oil and Gas-fired Boilers Serving EGUs
- ii. New Small Natural gas-fired boilers, steam generators, process heaters, and water heaters
- iii. Motor vehicle & Mobile Equipment Non-Assembly Line Coating Operations
- iv. Stationary Generators
- v. Consumer Products
- vi. Large Above-ground Storage Tanks
- vii. High Electricity Demand Day (HEDD) EGUs/Turbines.
- viii. Architectural and Industrial Maintenance Coatings (AIM rule)
- ix. Sulfur in fuel oil (MANE-VU measure to be in place by 2018)

Agreements (MOUs) to pursue these measures are on the OTC website at www.otcair.org under Documents/Formal Actions. Other measures under consideration include:

- x. Potential Mobile Source Controls:
Off-shore lightering of ships; non-road vehicle and equipment idle reduction; regional fuel; diesel inspection and maintenance; and VMT reductions;
- xi. Potential Point Source Controls:
ICI boilers; EGUs, HEDD units; municipal waste combustors; distributed generators; and energy efficiency/renewable energy; Low Solvent Degreasing; Compressors; Energy efficiency;
- xii. Potential Area Source Controls:
Cleaning solvents; gasoline service stations, and pipeline compressor stations.

More information on measures under consideration may be found on the OTC web site under meetings, 2010, SAS/Mobile Source/Modeling Committee Meeting September 16, 2010 and other meetings posted there. Additional information that may be useful is posted on the OTC website under Documents/OTC Reports/2007/Control Measures 2007 (Technical Support Document).

MARAMA will work with states to identify which measures should be applied in individual states and when they should be applied. The contractor will develop control factors for measures on an SCC level and apply these factors to the future year inventories. In some cases, the development of the control factors may be relatively simple. For example, an AIM coating rule enhancement might be accounted for by a simple percent reduction applied to a given SCC and all counties in the modeling domain. In other cases, the development of control factors could be more time consuming. For example, an ICI boiler rule may require the development of control factors that vary by county, boiler size, and fuel type.

States will review and comment on control factors to be applied in their states. The contractor will collate, QA, and document state inputs and other technical information. States may provide data in a variety of formats, including spreadsheets, comma delimited files or database files. The contractor will standardize all state files on a single NIF format. States will generally be provided a two week review of the draft NIF format inventory to provide comments. The contractor will incorporate and document changes to the draft and finalize the inventory. The contractor will convert inventory files into ORL files suitable for modeling.

The contractor will prepare documentation of the work suitable for inclusion in state SIPs. The documentation will be similar to Section 5 of "Development of Emissions Projections for 2009, 2012, and 2018 for Non-EGU Point, Area, and Non-road Sources in the MANE-VU Region, February, 2007. This document is posted on the MARAMA website under Publications.

Schedule: Bidders are invited to propose schedules for completing this task, beginning work in March 2011.

Deliverables: Draft and final Quality Assurance Project Plan (QAPP), NIF files, ORL files, documentation, and summaries. Documentation of the work suitable for inclusion in state SIPs including summary tables for each state at the county level by SCC, pollutant, and year. County level summaries will be provided as queries in an ACCESS database of the emissions. A power point presentation suitable for presenting the results to a stakeholder briefing or meeting of OTC state management.

Bidders should provide a firm quote to incorporate the completed measures (i - ix) into the future controlled inventory. The quote should be provided into two prices: one for 2017 and 2020 and add-on prices to complete 2013. In addition, separate prices should be provided to convert the files from NIF to ORL.

Additional tasks may be defined to incorporate additionally completed measures such as (x-xii). The bidder should provide hourly rates that will be used in completing additional tasks.

b. Federal Measures

The National Association of Clean Air Agencies (NACAA), at its 2010 Fall Membership Meeting, adopted a resolution calling for EPA promulgation of strong federal control measures

to support attainment and maintenance of the NAAQS. In the resolution, NACAA “strongly urges EPA to adopt or refine national rules for the following seven source categories to achieve multi-pollutant emission reductions that help all areas of the nation attain and maintain existing and new NAAQS:” 1) electric generating units; 2) industrial, commercial and institutional boilers; 3) cement kilns; 4) light-duty vehicles; 5) locomotive engines; 6) oceangoing marine engines; and 7) aircraft. NACAA also urges EPA “to adopt these rules in a timeframe that ensures that reductions begin no later than 2015 and that they are phased in so that attainment is achieved by the required attainment dates for new and existing NAAQS.”

MARAMA is seeking contractor assistance to quantify the impact of these measures on an SCC basis and modify the emissions inventory for the eastern US. The contractor would review existing information concerning EPA proposed rules, previous documents analyzing the reasonableness of controls for regional haze SIPs and other documentation and prepare a white paper analyzing the potential for emissions reductions from each of the seven sectors identified above. The analysis would reflect technical feasibility, not including a cost analysis. The goal is to estimate potential emissions reductions in the Eastern US from the implementation of federal measures. Provision for state and EPA review and contractor revision of this document should be included (2 drafts plus a final).

Schedule: Bidders are invited to submit a proposed schedule for completing this task, beginning work in March 2011.

Deliverables: Draft and final Quality Assurance Project Plan (QAPP), NIF files, ORL files, documentation, and summaries. White paper including a description of how the reductions were calculated and a discussion of ranges of plausible estimates.

The quote should be provided into three prices: one for 2017 and 2020 and add-on prices to complete 2013 and 2025 respectively.

TASK 3 - Future EGU Emissions. The OTC states are working with other states and regions through the Eastern Regional Technical Advisory Committee (ERTAC) to develop a tool for forecasting future emissions from EGUs. The tool will incorporate three elements: 1) a state-developed database of emission units and controls; 2) growth files; and 2) software that grows emissions from the units. The program is not an economic model. Since this program has not yet been developed, bidders should state and give a rationale for their assumptions regarding the amount of time it will take to run the program and the nature of output files that the program will produce.

MARAMA may select a contractor to exercise the tool to develop future EGU inventories for 2013, 2017, 2020 and/or 2025 for the OTC states. States will revise the emission unit database and provide it to the contractor. The contractor will run the program, summarize the results of the runs, and provide the results to states for their review. It is expected that there will be three iterations of runs before a satisfactory result is obtained. Between each iteration the states will review and revise the emission unit and control database and the growth files. Once a final result is obtained, the contractor will prepare documentation of the work suitable for inclusion in state SIPs. The contractor will convert inventory data files into ORL files suitable for modeling

Schedule: This task is not expected to begin until June 2011 or later.

Deliverables: Draft and final Quality Assurance Project Plan (QAPP), NIF files, ORL files, documentation, data summaries, and a power point presentation to be used to explain the results at a meeting with stakeholders and/or OTC state management.

Bidders should provide three quotes: one for 2017 and 2020 and add-on prices to complete 2013 and 2025 respectively.

TASK 4 – Inventory Updates. Information may come to light that will result in a need to revise the inventory for 2007, 2013, 2017, and/or 2020. As those situations arise there will be a need to incorporate the changes and revise the 2007 and/or future inventories and associated documentation. The bidder should provide personnel qualifications and hourly rates for this task, including preparation of QAPP, NIF and ORL files, revised summary tables, and documentation of changes. This task will be undertaken as needed and as funds permit.

TASK 5 - Convert emissions from NIF to ORL format for states outside the OTR. This task may be needed in order to provide data for input into SMOKE for available years corresponding to 2007, 2013, 2017, 2020 and/or 2025 for states in the Midwest. The Lake Michigan Air Directors Consortium (LADCO) uses CONCEPT rather than SMOKE to process emissions for input into air quality models. Further, LADCO may not prepare emissions estimates for the same years that are needed by OTC modeling centers. The Contractor would obtain available emissions files from LADCO and/or EPA for the states in the LADCO region.

- a. If the LADCO/EPA inventory is not provided for the same years as the MANE VU inventory interpolation may be necessary. The contractor will interpolate or project, as necessary, to estimate for specific years. A separate cost should be provided to perform this sub-task, since it may not be needed even if Tasks b and c are needed.
- b. The Contractor will convert the LADCO emission files into the ORL format required for processing of these data in SMOKE. The Contractor will analyze the file format for compatibility with the MARAMA SMOKE modeling platform. The Contractor will conduct QA of the ORL files to ensure that the reformatting of these data does not invalidate the integrity of the original inventories.
- c. The Contractor will prepare documentation describing the methods and results of these data conversion processes, which will be submitted through MARAMA to States for review and approval.

Deliverables: Draft and final Quality Assurance Project Plan (QAPP), documentation, and summaries.

Bidders should provide three quotes: one for 2017 and 2020 and add-on prices to complete 2013 and 2025 respectively.

C. Nature of Contract(s)

MARAMA may establish more than one contract under this request for proposals depending on the proposals received and the sources of funding available. Contracts may be established as fixed price contracts or cost reimbursable contracts.

For fixed price contracts, contractors will be paid for deliverables received, not on the basis of hours worked. For cost reimbursable contracts, the contract will establish a maximum charge limit.

In either case, payment of the final 10% of each Task will not be made until all agreed products are delivered in acceptable quality.

D. Nature of Deliverables

The Contractor shall provide inventory data electronically, formatted as requested by the Contract Officer. These outputs shall include ACCESS database and spreadsheets in Microsoft EXCEL format with data summaries for state agency review, emissions summaries consistent with EPA emissions inventory reporting requirements, and emissions data prepared for emissions modeling input files.

All information and data developed under the contract(s) and work orders established pursuant to this request for proposals will be in the public domain and must be provided without additional charge to MARAMA upon completion of the project.

E. Submittal of Proposals

If you are interested in being considered for this project, please submit the information listed below to MARAMA by 4:30 p.m. on February 23, 2011. Three paper copies and one electronic copy of the complete proposal must be submitted. Electronic copies must be in Microsoft Word, Excel, and/or Power Point.

Electronic copies should be submitted to jmcdill@marama.org. Paper copies should be submitted to Julie R. McDill, P.E., MARAMA, 8600 LaSalle Road, Suite 636, Towson, MD 21286.

Proposals should be limited to no more than 30 (single) pages typed with 12 point font size with a margin of 1" on all four sides, and should address the following:

- Approach and Deliverables - Summarize work to be done for each task. You may include some or all of the tasks in your proposal. Include information about work already completed or underway, funded by another source, that could satisfy, or partially satisfy, MARAMA's requirements. List deliverables.
- Personnel - Identify personnel you will assign to work on this project, their experience with similar projects, and their expertise.
- Costs – including hourly rates for personnel who will be assigned to the project as well as estimated costs for each task included in your proposal, itemized as noted in this RFP.
- Disadvantaged Business – Identify participation in the proposal by any disadvantaged businesses, including minority-owned or woman-owned businesses.
- References - References whom we can contact regarding previous projects.

Proposals should include a comprehensive rate schedule for all work to be encompassed under the contract. The rate schedule must be applicable through January 2013, but may include different rates for various months.

Funds available for this contract are federal funds from the U.S. Environmental Protection Agency, and contractors must meet all requirements associated with the use of federal funds. Proposals must certify that the contractor is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by and Federal department or agency.

(continued on next page)

F. Evaluation of Proposals

MARAMA will only select experienced contractor(s). The contractor must be familiar with EPA-recommended emissions inventory procedures, EIIP methods, and new developments in methods and data sources. The contractor will be expected to coordinate with similar work in other regions. Selection criteria will include:

- Price, including both hourly and per-task estimates (25%),
- Soundness of approaches proposed (20%),
- Qualifications of personnel identified and dedication of personnel time (20%),
- Qualifications of the firm, including its demonstrated ability to meet federal requirements (administrative and technical) (20%),
- Responsiveness of the proposal to the RFP (both content and timing of proposed approach will be considered) (10%), and
- Percentage of MBE/WBE participation & quality of presentation (5%)

Proposals will be evaluated based upon both hourly rates and estimated prices for tasks. MARAMA is not required to select the lowest cost bid, but will consider cost and the other factors listed.

Depending on the nature and scope of proposals received, MARAMA may request the preparation of follow-up proposals from one or more contractors. MARAMA may adjust the scope of work depending on the proposals received.

It may be necessary to utilize more than one contractor to provide the expertise needed to complete the project. Proposals covering only parts of the work are welcome.

Minority- and women-owned contractors or subcontractors are encouraged to identify themselves, since MARAMA seeks to meet EPA goals for utilizing these businesses.

G. Questions

Any questions about the RFP should be sent in writing via e-mail to Julie McDill at jmcdill@marama.org. Questions and answers will be posted on MARAMA's web site at www.marama.org under "Requests for proposals." No further questions will be taken after February 16, 2011, and no answers will be posted after February 17, 2011.