

MARAMA

Mid-Atlantic
Regional Air
Management
Association, Inc.



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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
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Request for Proposals Concerning Development of a Northeast Regional 2011/2018/2028 Emissions Inventory

A. Overview

The purpose of this request for proposals (RFP) is to obtain contractor assistance in preparing a Northeast Regional 2011 Emissions Inventory with a projection to 2018 and 2028. The 2011/2018/2028 emissions inventory will be used in analysis and also as an input to an integrated, one-atmosphere air quality modeling platform to support state air quality attainment demonstrations. 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. For the tasks described in this RFP pollutants estimated shall include CO₂, NO_x, SO₂, CO, PM₁₀, PM_{2.5}, NH₃, and VOC unless otherwise indicated.

The Mid-Atlantic Regional Air Management Association, Inc. (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) to provide air quality technical and policy support for the states in the MARAMA, Ozone Transport Region (OTR) and the Mid-Atlantic/Northeast Visibility Union (MANE-VU).

Table 1 shows the agency membership in the various regional organizations. The last column of Table 1 lists those entities that will be covered by this project and shall be referred to as THE COVERED STATES in the remainder of this document.

In addition to this RFP, there are a number of supporting materials located at the RFP WEBSITE. That link is:

<http://www.marama.org/requests-for-proposals>

The MARAMA 2011/2018/2028 inventory will build off of the existing USEPA 2011 NEI V1 inventory and the USEPA 2011/2018 V6 Modeling Inventory. If a more recent version of these inventories is available at the time that a task is completed then the task will be completed using that version.

MARAMA seeks contractor assistance to perform tasks related to development of the MARAMA 2011/2018/2028 inventory. To identify suitable contractors a series of sample task have been developed as follows:

1. Re-distribute the 2011 EPA modeling platform point source files into three groups for the COVERED STATES

2. Develop emission factors for pollutants other than NO_x and SO_x for EGU Sources in the COVERED STATES
3. Estimate 2028 onroad mobile source emissions for the COVERED STATES
4. Estimate 2028 nonroad mobile source emissions for the COVERED STATES
5. Prepare a combined base and future projection Technical Support Document (TSD) for the MARAMA 2011/2018/2028 Inventory

Table 1. Agency Membership in Various Regional Organization and those covered by this project

Agency	Regional Organizations				Regional Inventory
	MARAMA	NESCAUM	OTC/OTR	MANE VU	
Allegheny Co., PA	X				X
Connecticut		X	X	X	X
Delaware	X		X	X	X
District of Columbia	X		X	X	X
Maine		X	X	X	X
Maryland	X		X	X	X
Massachusetts		X	X	X	X
New Hampshire		X	X	X	X
New Jersey	X	X	X	X	X
New York		X	X	X	X
North Carolina	X				X
Philadelphia	X				X
Rhode Island		X	X	X	X
Tribal Nations				X	
Vermont		X	X	X	X
Virginia	X		Partial		X
West Virginia	X				X

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. Cost estimates should be provided separately for each task.

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.

The selected contractor will prepare a draft and final combined Work Plan and Quality Assurance Project Plan (QAPP) at the beginning of each task, where appropriate. A plan prepared for an earlier MARAMA project is included as a supporting file with this RFP as an example of the required level of detail. It is titled “Final MARAMA QAPP.pdf” and is located at the RFP WEBSITE.

For each task the contractor will also prepare monthly progress reports, participate in periodic telephone conference calls with COVERED STATES as needed, and periodic discussion with the MARAMA project officer. The contractor will provide drafts of all final products for a review period. The contractor will submit final deliverables to MARAMA. File transfer will be by email and ftp site postings.

Sample Task 1 – Re-distribute the 2011 EPA modeling platform point source files into three groups for the COVERED STATES

Point source emission units in the USEPA 2011 modeling platform are split into three groups as follows:

IPM-EGU,
EGU Peaking units, and
Non-EGU point.

The MARAMA 2011/2018/2028 inventory will use the following scheme to classify point sources:

- ERTAC EGU – Units included in the ERTAC EGU input files.
- EGU peaking units – Non-ERTAC units identified by USEPA as peaking units.
- Non-ERTAC point – Units not included in either the EGU peaker or the ERTAC EGU input files.

For this task the contractor will combine the three USEPA 2011 point source files, categorize each unit as ERTAC EGU, EGU Peaking Unit, or non-ERTAC point, and then re-split the combined file into three new files. The ERTAC input files, CAMD and IPM identifiers in the 2011 NEI, as well as crosswalks developed between the MARAMA 2007 inventory and the 2008 NEI should be used to match units. The contractor will provide draft files for state review showing the match based on the above described files. Some units will be unmatched and states will be asked to provide feedback to manually match the remaining units.

Samples of the ERTAC input file (titled: UAF_2-0_2018_8-16-2013.csv) and the 2007/2008 crosswalk (titled: Appendix_A_CAMD_to_NIF_Crosswalk_Aug12_2010.xls) are located at the RFP WEBSITE.

The EPA 2011 point emissions Flat File 10 (FF10) inventory files are located on the USEPA website as follows:

<ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform>

The following Deliverables shall be provided in formats approved by MARAMA:

Draft and final combined Work Plan and Quality Assurance Project Plan (QAPP)

Draft and final emission inventory files in FF10 format for:

ERTAC EGU point sources

Peaker Units

Non-ERTAC EGU point sources

Technical memorandum documenting the task and quality assurance steps taken

Sample Task 2 – Develop emission factors for pollutants other than NO_x and SO_x for EGU Sources in the COVERED STATES

The Eastern Regional Technical Advisory Committee (ERTAC) has developed an emissions modeling methodology to grow base year hourly inventories for electric generating units (EGUs) into future projection years for use in Air Quality (AQ) modeling. The methodology is currently designed to calculate future projected emissions of NO_x, and SO₂. The purpose of this task is to develop 2011 emission factors for the other pollutants required for AQ modeling (CO₂, CO, NH₃, PM10, PM2.5 and VOC) for EGUs located in the COVERED STATES.

To develop emission factors for EGUs the contractor will merge data elements from four data sources into a single spreadsheet as follows:

- USEPA 2011 NEI V1 emission inventory which provides 2011 annual emissions for criteria air pollutants and NH₃.
- The EPA CAMD unit level file which provides descriptive information about each unit and period totals for heat input, SO₂ mass emissions, and NO_x mass emissions.
- The ERTAC Unit Availability File which provides units included in the ERTAC EGU projection methodology.
- The USEPA AP-42 emission factor document, which contains uncontrolled and controlled emission factors for criteria air pollutants for various types and sizes of combustion devices and fuel types.

The spreadsheet set developed will have tabs segregating the units into three types as follows and the methodology for emission factor calculation will vary by unit type as indicated:

Full year reporters reported emissions to CAMD for all 12 months in 2011. For these sources annual generation, heat input and SO₂/NO_x emissions are available from the CAMD hourly database. The contractor will extract annual emission of all pollutants from the USEPA NEI 2011 annual emission inventory and heat input from the UAF and the CAMD database. The contractor will calculate emission factors using the following formulas:

$$EF_i \text{ (lbs/mmBtu)} = \text{TONS2011}_i \text{ (tons)} * (2000 \text{ lbs/ton}) / \text{HI2011_CAMD (mmBtu)}$$

Where: EF_i = Emission factor for pollutant i

TONS2011_i = Annual 2011 emissions for pollutant i from USEPA NEI V1

HI2011_CAMD = Annual 2011 heat input from CAMD

Partial year reporters reported less than 12-months of generation, heat input and SO₂/NO_x emissions to CAMD in 2011. For partial full year reporters, the contractor will estimate annual 2011 heat input. Where available, the contractor will extract annual 2011 heat input from the ERTAC Unit Availability File and the 2011 annual emissions of all pollutants from the USEPA NEI 2011. Where unavailable, the contractor will use the reported CAMD emissions and annual emissions to estimate annual 2011 Heat input. The emission factors will be calculated the following formulas:

$$EF_i \text{ (lbs/mmBtu)} = \text{TONS2011}_i \text{ (tons)} * (2000 \text{ lbs/ton}) / \text{HI2011_UAF (mmBtu)}$$

Where: EF_i = Emission factor for pollutant i

TONS2011_i = Annual 2011 emissions for pollutant i from USEPA NEI V1

HI2011_UAF = Annual 2011 heat input from ERTAC UAF

New or proposed units are those that did not operate in 2011. The contractor prepare a statistical analysis of the emission rates for similar fuel/unit types in each region. For new units where an emission rate is not provided by the state, a typical emission rates for similar fuel/unit types in a region will be used. Where no factor is available, the contractor will extract emission factors from AP-42 for the appropriate fuel and combustion type.

The following Deliverables shall be provided in formats approved by MARAMA:

Draft and final combined Work Plan and Quality Assurance Project Plan (QAPP)

Spreadsheets containing emission factors for all ERTAC EGU

Technical memorandum documenting the task, results, and quality assurance steps taken.

Sample Task 3 – Estimate 2028 onroad mobile source emissions for the COVERED STATES.

The contractor will perform 2028 MOVES rate mode and SMOKE MOVES runs to estimate mobile source emissions for use in air quality modeling for the COVERED STATES. MARAMA will collect 2028 inputs. The contractor will quality assure the inputs. The set up for the runs should be based on the runs performed for USEPA for their 2011 modeling platform. Documentation for v6 those runs is located here:

<http://www.epa.gov/ttn/chief/emch/index.html#2011>

If a more current version of the modeling platform is available when the task is completed, the contractor may be asked to use the methodology from that version. A process of iterations and additional runs as a result of new releases and/or other un-foreseen situations are expected. Therefore, the bid should provide a cost for a single iteration with an additional cost for each subsequent iteration and an hourly rate for additional work in order to adjust files or model settings to accommodate unforeseen circumstances.

The following Deliverables shall be provided in formats approved by MARAMA:

- Draft and final combined Work Plan and Quality Assurance Project Plan (QAPP)

- Final 2028 mobile source emission files,

- Data summaries in EXCEL format and graphical presentations to help with QA process and also for reviews by states,

- Technical memorandum that includes details of all aspects of the modeling process including:

 - Documentation of quality assurance steps taken

 - Final input data files,

 - MOVES inventory and look-up table set up details,

Sample Task 4 – Estimate 2028 nonroad mobile source emissions for the COVERED STATES

The contractor will run the Nonroad model for the COVERED STATES. The set up and inputs shall be those used in the USEPA 2011 NEI V1. If a more current version of the NEI is available when this task is completed, the contractor may be asked to use the methodology used in that version. Documentation for the USEPA 2011 NEI V1 runs is located here:

<http://www.epa.gov/ttnchie1/net/2011inventory.html>

The bid should provide a cost for a single iteration with an additional cost for each subsequent iteration and an hourly rate for additional work in order to adjust files or model settings to accommodate unforeseen circumstances.

The following Deliverables shall be provided in formats approved by MARAMA:

- Draft and final combined Work Plan and Quality Assurance Project Plan (QAPP)

- Final 2028 nonroad source emission files,

- Data summaries in EXCEL format and graphical presentations to help with QA process and also for reviews by states,

- Technical memorandum that includes details of all aspects of the modeling process including:

 - Documentation of quality assurance steps taken

 - Final input data files,

 - Nonroad model set up details,

Sample Task 5 – A combined base and future projection Technical Support Document (TSD) for the MARAMA 2011/2018/2028 Inventory in the COVERED STATES

The contractor will prepare a TSD for the NE regional 2011/2018/2028 inventory suitable for inclusion in State Implementation Plans (SIPs). In the past, the region prepared an inventory themselves. For this inventory, the

region has elected to use the USEPA inventory for all sectors except point sources. Therefore, unlike prior regional inventories, such as the MARAMA 2007/2017/2020 the Technical Support Document will only provide detailed documentation for the point sector. For other sectors appropriate citations will be made to the USEPA documentation.

C. Nature of Contract(s)

MARAMA may establish more than one contract under this RFP 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. Deliverables

The Contractor shall provide deliverables electronically, formatted as requested by the Contract Officer. These outputs may include CSV, ACCESS database, and spreadsheets in Microsoft EXCEL format with data summaries for state agency review.

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 a proposal to MARAMA by 4:30 p.m. on April 30, 2014. Two 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 June 2015, but may include different rates for various months.

F. Other Considerations

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.

Work products will be owned by MARAMA and will be provided free of charge via MARAMA's website.

G. 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. 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) (10%),
- Responsiveness of the proposal to the RFP (both content and timing of proposed approach will be considered) (20%), 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.

H. Questions

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 April 23th, 2014, and no answers will be posted after April 25, 2014.