



COORDINATING RESEARCH COUNCIL, INC.

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March 9, 2016

In reply, refer to:

CRC Project No. E-120

Dear Prospective Bidder:

The Coordinating Research Council (CRC) invites you to submit a written proposal to provide services for “Assessment of Anthropogenic and Biogenic PM Source Apportionment,” (CRC Project No. E-120). A description of the project is presented in Exhibit A, “Statement of Work.”

Please indicate by letter, fax, or email by **March 23, 2016** if you or your organization intends to submit a written proposal for this research program. CRC will answer technical questions regarding the Request for Proposal if they are submitted in writing. CRC will then return written answers to all of the bidders, along with a copy of the original questions.

A CRC technical group composed of industry representatives will evaluate your proposal. CRC reserves the right to accept or reject any or all proposals.

The reporting requirements will be monthly progress reports and a summary technical report at the end of the contractual period. The reporting requirements are described in more detail in the attachment entitled “Reports” (Exhibit B).

The proposal must be submitted as two separate documents. The technical approach to the problem will be described in part one, and a cost breakdown that is priced by task will be described in part two. The cost proposal document should include all costs associated with conducting the proposed program. The technical proposal shall not be longer than 10 pages in length.

CRC expects to negotiate a cost-plus fixed fee or cost reimbursement contract for the research program.

Contract language for intellectual property and liability clauses is presented in Exhibit C and in Exhibit D, respectively.

Important selection factors to be taken into account are listed in Exhibit E. CRC evaluation procedures require the technical group to complete a thorough technical evaluation before considering costs. After developing a recommendation based on technical considerations, the costs are revealed and the recommendation is modified as needed.

Electronic copies of the technical and cost proposals should be submitted to:

Dr. Christopher J. Tennant
Coordinating Research Council
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Phone: 678-795-0506
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The deadline for receipt of your proposal is **April 8, 2016**.

Yours truly,

Christopher J. Tennant
Deputy Director

EXHIBIT A
Statement of Work

Assessment of Anthropogenic and Biogenic PM Source Apportionment

Background

The composition of ambient PM is influenced by a diverse set of anthropogenic and biogenic sources. Some examples of anthropogenic sources of PM include heavy and light duty vehicles, manufacturing, wood burning, agriculture, and cooking. Examples of biogenic sources of PM include trees and plants, wildfires, and oceans. Efforts to reduce the overall ambient PM concentration have focused on the anthropogenic sources since these are due to human activity. Biogenic sources of PM are difficult to control and thus are generally considered to produce background PM emissions. Both sources also produce secondary organic aerosols (SOA), which are formed from volatile organic compound (VOC) reactions and nucleation in the atmosphere. It's important to correctly apportion the sources of PM in order to define those areas of emphasis which could result in the most productive reductions in the ambient concentration of the pollutant.

The apportionment of anthropogenic PM sources is changing due to more stringent PM regulations on vehicles and industry activities. U.S. federal and state regulatory agencies have placed stringent regulations on some PM sources, such as heavy and light duty vehicles, over the last few decades. The most recent regulation from the U.S. EPA for light duty vehicles, to be phased in from 2017 to 2022, reduces the maximum PM emissions rate to 3 mg/mi. This may shift the fractions of PM contributed by various anthropogenic sources; for example, PM from cooking emissions, which constituted almost a third of the organic PM apportionment in 2010 (Figure 1, ambient measurement in Pasadena, CA), could become a major contributor over the next few decades. In the biogenic area, wildfires are becoming a major concern due to recent severe droughts, thus increasing the background PM in certain areas.

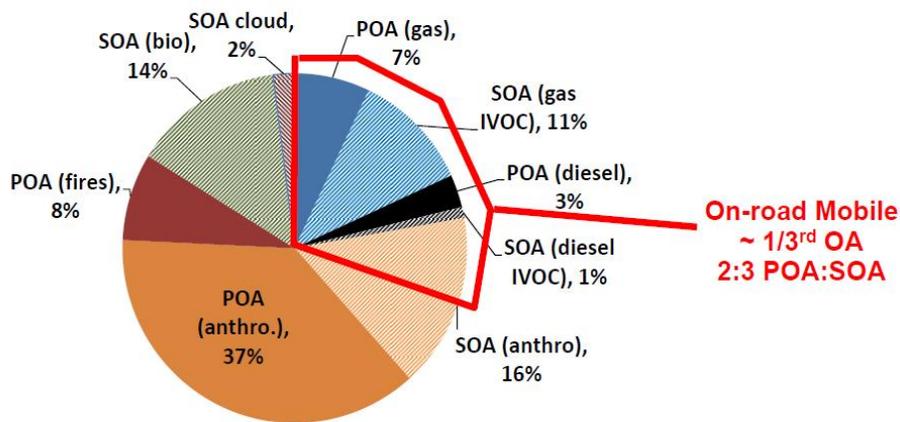


Figure 1. Organic PM Source Apportionment in 2010 (CRC Project E-96/A-74) (POA- Primary Organic Aerosols, SOA-Secondary Organic Aerosols)

Project objectives

The major study objectives are:

- Produce via literature review an up to date source apportionment of the major anthropogenic and biogenic contributions to ambient PM. This will depend on region, so major regions will need to be identified. It should include primary and secondary PM, keeping in mind recent work on what defines “primary”, e.g., CRC Project A-74/E-96.
- Based on this, identify knowledge gaps and assess trends in source apportionment.
- Identify research opportunities to address potential PM concerns for the next decade.

Tasks

1. Compile a list of important representative U.S. regions and the primary and secondary PM sources, anthropogenic and biogenic, relevant to each.
2. Perform a literature search to collect source apportionment data related to task 1, again covering anthropogenic and biogenic, secondary and primary, sources.
 - a. These would include journal publications from the U.S., E.U., Japan and other world regions. However, only publications pertaining to U.S. data will be used in the report.
3. Identify knowledge gaps including source types, source strengths, and other relevant data.
4. Compare current literature data to previous source apportionment reviews. Identify trends in source types and source strengths.
5. Based on tasks 3 & 4 identify important questions and areas related to PM source apportionment in the coming decade that need further research.
6. Provide the above information in the form of a final report and conclusions.

Deliverables

- A planning / scope document that covers the regions and sources to be investigated as part of the detailed literature search (Task 1). This will be discussed with the project panel prior to commencing the main work.
- Monthly status reports including major progress and any roadblocks.
- Final report including: detailed reference list of the literature found, assessment of the data quality in each literature report, list of knowledge gaps including their importance, trends in sources, recommendations for further research, and conclusions. This will be reviewed by the CRC.

Resources

The contractor is expected to search available literature and inventory databases to compile the requested studies and information. In addition, the contractor is encouraged to seek additional information from government, academic, and industry sectors as well.

EXHIBIT B

REPORTS

MONTHLY TECHNICAL PROGRESS REPORTS

The contractor shall submit a monthly technical progress report covering work accomplished during each calendar month of the contract performance. An electronic Microsoft® Word compatible file (<1 MB) of the monthly technical progress report shall be distributed by the contractor within ten (10) calendar days after the end of each reporting period. The report shall contain a description of overall progress, plus a separate description for each task or other logical segment of work on which effort was expended during the reporting period.

FINAL REPORT

The contractor shall submit to or distribute for CRC an electronic (Microsoft Word) copy transmittable via email) of a rough draft of a final report within thirty (30) days after completion of the technical effort specified in the contract. The report shall document, in detail, the test program and all of the work performed under the contract. The report shall include tables, graphs, diagrams, curves, sketches, photographs and drawings in sufficient detail to comprehensively explain the test program and results achieved under the contract. The report shall be complete in itself and contain no reference, directly or indirectly, to the monthly report(s).

The draft report must have appropriate editorial review corrections made by the contractor prior to submission to CRC to avoid obvious formatting, grammar, and spelling errors. The report should be written in a formal technical style employing a format that best communicates the work conducted, results observed, and conclusions derived. Standard practice typically calls for a CRC Title Page, Disclaimer Statement, Foreword/Preface, Table of Contents, List of Figures, List of Tables, List of Acronyms and Abbreviations, Executive Summary, Background, Approach (including a full description of all experimental materials and methods), Results, Conclusions, List of References, and Appendices as appropriate for the scope of the study. Reports submitted to CRC shall be written with a degree of skill and care customarily required by professionals engaged in the same trade and /or profession.

Within thirty (30) days after receipt of the approved draft copy of the final report, the contractor shall make the requested changes and deliver to CRC thirty (30) hardcopies including a reproducible master copy of the final report. The final report shall also be submitted as electronic copies in a pdf and Microsoft Word file format. The final report may be prepared using the contractor's standard format, acknowledging author and sponsors. An outside CRC cover page will be provided by CRC. The electronic copy will be made available for posting on the CRC website.

EXHIBIT C

INTELLECTUAL PROPERTY RIGHTS

Title to all inventions, improvements, and data, hereinafter, collectively referred to as (“Inventions”), whether or not patentable, resulting from the performance of work under this Agreement shall be assigned to CRC. Contractor X shall promptly disclose to CRC any Invention which is made or conceived by Contractor X, its employees, agents, or representatives, either alone or jointly with others, during the term of this agreement, which result from the performance of work under this agreement, or are a result of confidential information provided to Contractor X by CRC or its Participants. Contractor X agrees to assign to CRC the entire right, title, and interest in and to any and all such Inventions, and to execute and cause its employees or representatives to execute such documents as may be required to file applications and to obtain patents covering such Inventions in CRC’s name or in the name of CRC’s Participants or nominees. At CRC’s expense, Contractor X shall provide reasonable assistance to CRC or its designee in obtaining patents on such Inventions.

To the extent that a CRC member makes available any of its intellectual property (including but not limited to patents, patent applications, copyrighted material, trade secrets, or trademarks) to Contractor X, Contractor X shall have only a limited license to such intellectual property for the sole purpose of performing work pursuant to this Agreement and shall have no other right or license, express or implied, or by estoppel. To the extent a CRC member contributes materials, tangible items, or information for use in the project, Contractor X acknowledges that it obtains only the right to use the materials, items, or information supplied for the purposes of performing the work provided for in this Agreement, and obtains no rights to copy, distribute, disclose, make, use, sell or offer to sell such materials or items outside of the performance of this Agreement.

EXHIBIT D

LIABILITY

It is agreed and understood that _____ is acting as an independent contractor in the performance of any and all work hereunder and, as such, has control over the performance of such work. _____ agrees to indemnify and defend CRC from and against any and all liabilities, claims, and expenses incident thereto (including, for example, reasonable attorneys' fees) which CRC may hereafter incur, become responsible for or pay out as a result of death or bodily injury to any person or destruction or damage to any property, caused, in whole or in part, by _____'s performance of, or failure to perform, the work hereunder or any other act of omission in connection therewith.

EXHIBIT E

PROPOSAL EVALUATION CRITERIA

- 1) Merits of proposed technical approach.
- 2) Previous performance on related research studies.
- 3) Personnel available for proposed study – related experience.
- 4) Timeliness of study completion.
- 5) Cost.