



COORDINATING RESEARCH COUNCIL, INC.

3650 MANSELL ROAD, SUITE 140
ALPHARETTA, GA 30022
TEL: 678/795-0506 FAX: 678/795-0509
WWW.CRCAO.ORG

December 17, 2010

In reply, refer to:

CRC Project Number A-76

Subject: CRC Request for Proposal No. A-76, "Effects of Light-Duty Vehicle Emissions on Ozone and PM with Past, Present, and Future Controls."

Dear Prospective Bidder:

The Coordinating Research Council (CRC) invites you to submit a written proposal on the subject topic. A description of the project (CRC Project No. A-76) is given in Exhibit A

Please indicate via letter, fax, or email by **January 4, 2011** whether or not you intend to submit a written proposal for the project. CRC will answer technical questions regarding the Request for Proposal if they are submitted in writing. CRC will then return written answers to all prospective bidders, along with a copy of the original questions.

The CRC technical group generally composed of expert representatives from industry and government will evaluate your proposal. CRC reserves the right to accept or reject your proposal.

The reporting requirements will be quarterly progress reports and a draft journal article plus supporting appendices at the end of the contractual period along with associated detailed protocol descriptions. The reporting requirements are described in more detail in the attachment entitled, "Reports" (Exhibit B).

The "Intellectual Property Rights Clauses" (Exhibit C and Exhibit D) and "Liability Clause" (Exhibit E) will be a part of the agreement anticipated as a result of this Request for Proposal solicitation.

All computer code developed in this project shall be free of copyright restrictions and licensing requirements. The contractor will assure CRC that it will comply with any copyright restrictions and licensing requirements for any software used in this program.

The proposal must be submitted as two separate documents. The technical approach to the problem will be described in Part One (20 pages or less including the background and technical

approach). 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. CRC expects to negotiate a cost-plus fixed fee or cost reimbursement contract. Note that there will be a performance requirement clause in the contract. Important selection factors to be taken into account are listed in Exhibit F. 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.

Thirty (30) copies of the technical proposal (or one electronic copy) and three (3) copies of the cost proposal (or one electronic copy) should be submitted to:

Mr. Brent K. Bailey
Coordinating Research Council
3650 Mansell Road, Suite 140
Alpharetta, GA 30022

Phone: 678-795-0506
Fax: 678-795-0509
E-mail: bkbailey@crcao.org

The deadline for receipt of your proposal is **January 25, 2011**.

Sincerely,



Brent K. Bailey
Executive Director

EXHIBIT A

Statement of Work

Coordinating Research Council Atmospheric Impacts Committee
Project A-76

“Effects of Light-Duty Vehicle Emissions on Ozone and PM with Past, Present, and Future Controls”

Objective:

Determine ozone and PM levels derived from existing emission controls on light-duty vehicles (LDV's). Then determine the levels based on planned future controls. Finally, determine the remaining benefit from additional controls on LDV's and fuels.

Background: An ozone or PM contribution has often been assigned to mobile sources. The mobile source category has included non-road and on-road vehicles; on-road vehicles include LDV's and heavy-duty vehicles (HDV's). Regulations to date have reduced emissions from all vehicles. Therefore, the importance of LDV mobile source emissions on the inventory has changed.

With additional controls on LDV's planned, the relative contribution of LDV's compared to other mobile sources will change further, and the absolute contribution to ozone and PM may become quite small. Finally, the absolute and relative contributions of on-road vehicle emissions to ozone and PM will likely be affected by the switch from MOBILE6 to MOVES for emissions projections, but this study will only use MOVES.

Methodology:

- Develop and report separate gridded emissions inventories for LDV's, HDV's, and non-road vehicles. Keep the HDV and non-road inventory constant for the appropriate emission standards applicable in the year modeled.
- Use the Motor Vehicle Emissions Simulator (MOVES) to provide emission inventory for 2008 (Represents LDV Tier 2 phase-in and all E10 with few FFVs.) Separate LDV inventory from MOVES into the major sub-categories, e.g., hot soak, diurnal, running loss, cold start exhaust, stabilized exhaust (and others if appropriate). Separate the sub-categories by high vs. low emitters or by model year categories to address the effects of age.
- For a future year (e.g., 2020), keeping the HDV and non-road inventory constant:
 - Propose options for the base fuel percentage of ethanol (depending on the locale modeled and time frame) and give the pros and cons of each choice. Economic modeling is beyond the scope of this project. Refer to the RFS2 rulemaking and use those assumptions or provide modified assumptions with a rationale for the modifications.
 - Use the latest vehicle emission model (MOVES) to estimate LDV emissions controls for:
 - Tier 0
 - Tier 1
 - Tier 2
 - California LEV III nationwide (Requires agreement on the standard before starting this scenario.)
 - Mid-way between Tier 2 and CA LEV III
 - No LDV mobile source (Zero out LDV emissions)

- Optional: ZEV's (100% ZEV, Include Electric Generating Unit emission increases, remove petroleum-related inventory)
- Provide results for a summer and winter month, including provisions for summer/winter fuel formulations.
- Contractor will propose the best available input inventories and meteorological data sets. CRC will review the proposals and refine them if necessary. Additionally, contractor will propose the source-specific emission and activity factors to be used. For sources other than LDV's, use the EPA speciation profiles recommended for SIP modeling. For LDV's, assess updating the EPA profiles.
- The proposal should discuss whether and how the proposed meteorological fields have been evaluated against observations. If no evaluation has been done, the proposal should include an option for such an evaluation.
- Conduct regional 3D simulations of ozone and PM formation during a winter and summer month using nested grids for urban areas outside California. To the extent practical, these urban areas should be those used in the June 2010 EPA Office of Air Quality Planning and Standards report "Quantitative Health Risk Assessment for Particulate Matter." Use source apportionment and/or sensitivity methods to determine LDV contributions to ozone and PM for each emissions scenario.
- The proposal should include an option for conducting annual time period modeling.

Project Deliverables: Provide emission inventories, air quality simulations, quarterly reports, and a final report suitable for journal publication. If any computer code is developed as part of this project, the code should be made available without any licensing restrictions.

Utilization of Deliverables: Understand the contributions of different mobile source categories to ozone and PM. The project will provide the best available assessment of the progress in reducing the LDV contributions to ozone and PM and the importance of the LDV contributions in the future.

Contact: Brent Bailey, Coordinating Research Council, (678) 795-0506, extension 107.

Reference: June 2010 EPA Office of Air Quality Planning and Standards published the report "Quantitative Health Risk Assessment for Particulate Matter." The report describes the assessment of PM-related risks to public health to support the review of the primary PM NAAQS. There were 15 urban study areas included in the risk assessment (including seven PM regions used to guide selection of study areas).

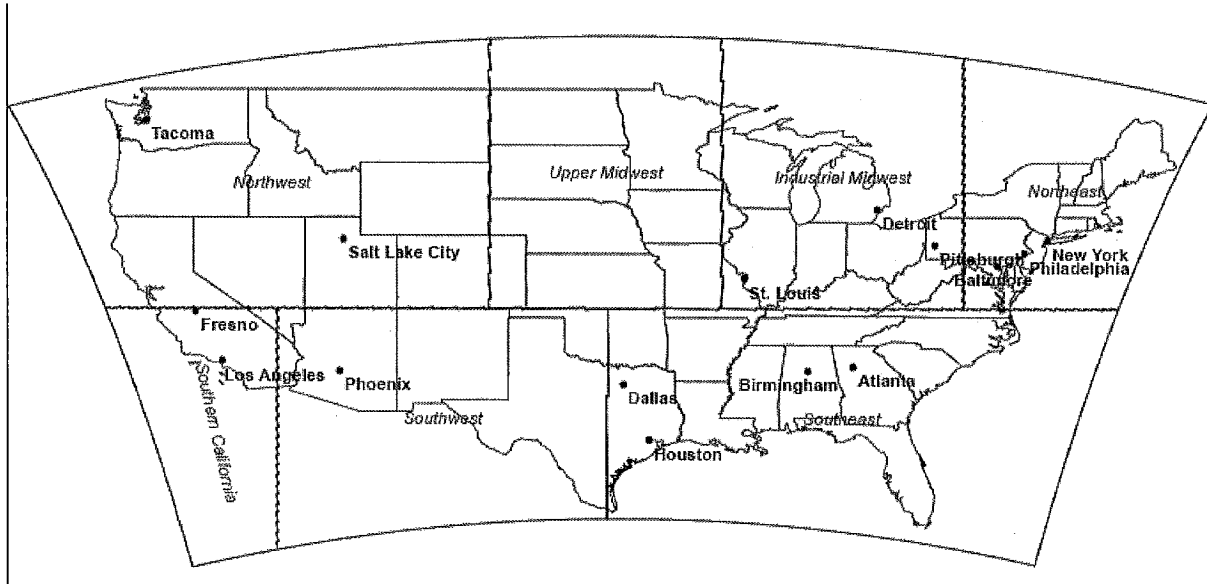


EXHIBIT B

REPORTS

QUARTERLY TECHNICAL PROGRESS REPORTS

The contractor shall submit a quarterly technical progress report covering work accomplished during each calendar quarter of the contract performance. The Work Scope Document may serve as one of the progress reports. Thirty-five (35) hardcopies or one electronic Microsoft Word compatible file (<1 MB) of the quarterly 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 thirty-five (35) hardcopies (or one hardcopy and one electronic word and pdf-compatible 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, 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 program and results achieved under the contract. The report shall be complete in itself and contain no reference, directly or indirectly, to the periodic progress report(s). The final report for this project will be in the form of a journal article as the main body of the report with all other supporting data and information presented in appendices of the report.

The CRC Steering Committee shall furnish comments regarding the report to the contractor within one (1) month after receipt of the draft copy.

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. Incomplete draft reports or reports of poor quality requiring additional outside editorial review may have outside editorial services charged back to the project budget.

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 twenty (20) hardcopies including a reproducible master copy of the final report. The final report shall also be submitted as an electronic copy in Microsoft Word file format. The electronic copy will be made available for posting on the CRC website.

EXHIBIT C

INTELLECTUAL PROPERTY RIGHTS

A. Protected Works

The term "Protected Works" as used in this agreement includes any and all works of authorship, inventions, discoveries, processes, machines, manufactures, compositions of matter, formulas, techniques, computer programs, systems, mask works, trade secrets, proprietary information, schematics, flow charts, databases, customer lists, marketing plans, product plans, business strategies, financial information, forecasts, trademarks, service marks, brand names, trade names, compilations, documents, data, notes, designs, drawings, ideas, concepts, technical data and/or training materials, and improvements to or derivatives from any of the above, whether or not patentable, or subject to copyright or trademark or trade secret protection, delivered by _____ to CRC under this Agreement or conceived, developed or produced by _____, whether alone or jointly with others, in connection with or pursuant to _____'s performance under this Agreement.

B. Assignment and Ownership of Protected Works

_____ agrees that except as provided in Section C below:

(1) All copyrightable Protected Works which are created by _____ pursuant to this Agreement shall be deemed "Works Made for Hire," as that phrase is defined in Section 101 of the United States Copyright Act, 17 U.S.C. 101, and used in 17 U.S.C. 201, on behalf of CRC and that CRC shall own right, title, and interest, including the worldwide copyright, in and to such materials; and

(2) _____ hereby assigns and agrees to assign to CRC all of its respective rights, title, and interest in Protected Works, including all rights of inventorship and authorship, all patents and patent applications, all copyrights, all trademark and service mark rights, all rights in trade secret and proprietary information, all rights of attribution and integrity and other moral rights, and all other intellectual property rights of any type (collectively referred to herein as "Intellectual Property Rights"); and

(3) _____ and _____'s successors in interest will, at CRC's request and without further consideration, communicate to CRC any facts known to them respecting the Protected Works, and testify in any legal proceedings, sign all lawful papers, make all rightful oaths, execute all divisional, continuing, continuation-in-part, or reissue applications, all assignments, all registration applications and all other instruments or papers to carry into full force and effect, the assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible for title to Intellectual Property Rights in the Protected Works to be clearly and exclusively held by CRC, including the execution from time to time as requested by CRC, Confirmatory Assignment, Agreements in the form attached as Exhibit D; and

(4) _____ agrees that it will not apply for any state, federal, or other U.S. or foreign jurisdiction's registration of rights in any of the Protected Works, and that it will not oppose or object in any way to applications for registration of same by CRC or others designated by CRC; and

(5) _____ agrees to provide CRC a copy of the source code and all annotations thereto for all deliverables under this Agreement.

(6) The deliverables provided to CRC by _____ under this Agreement shall not include any Protected Works which infringe the Intellectual Property Rights of any third party or for which _____ does not have the ownership and authority necessary to make the conveyances of rights described in this Section B. _____ will obtain the express written consent of CRC prior to incorporating into the deliverables any works owned by parties other than _____.

C. Portions of Protected Work

With respect to portions of the Protected Works which were originally developed by _____ prior to and unrelated to the course of performance under this Agreement (Pre-Existing Protected Works), _____ will continue to own these Pre-Existing Protected Works. However, _____ hereby grants to CRC a fully paid, perpetual, irrevocable, worldwide, non-exclusive license to prepare derivative works from such Pre-Existing Protected Works (using either CRC's own employees, independent contractors, or sponsoring participants), and to reproduce Pre-Existing Protected Works and derivative works therefrom, and to make, use, distribute, perform, and display such Pre-Existing Protected Works and derivative works therefrom and reproductions thereof, both in connection with the Protected Works and otherwise, and to sublicense the rights granted to CRC in this paragraph.

EXHIBIT D

CONFIRMATORY ASSIGNMENT

For good and valuable consideration, receipt of which is hereby acknowledged, _____ (_____) has assigned and does hereby assign and transfer to CRC, _____'s entire right, title, and interest in and to any and all Intellectual Property Rights in Protected Works, as defined below, including but not limited to the Protected Works specifically identified below and the Protected Works delivered to CRC by _____ or conceived, developed, or produced by the _____, whether alone or jointly with others, in connection with the Projects identified below:

Specific Protected Works: _____

Specific Projects:

Additional Terms and Definitions:

1. The term Protected Works as used in this agreement includes any and all works of authorship, inventions, discoveries, processes, machines, manufactures, compositions of matter, formulas, techniques, computer programs, systems, software, source code, object code, hardware systems, mask words, trade secrets, proprietary information, schematics, flow charts, databases, customer lists, marketing plans, product plans, business strategies, financial information, forecasts, trademarks, service marks, brand names, trade names, compilations, documents, data, notes, designs, drawings, ideas, concepts, technical data and/or training materials, and improvements to or derivatives from any of the above, whether or not patentable, or subject to copyright or trademark or trade secret protection.
2. The term Intellectual Property Rights as used in this agreement includes all of _____'s rights, title, and interest in Protected Works, including all rights of inventorship and authorship, patents and patent applications, all copyrights, all trademark and service mark rights, all rights in trade secret and proprietary information, all rights of attribution and integrity and other moral rights, and all other intellectual property rights of any type.
3. _____ further agrees at CRC's request and without further consideration, _____ and _____ successors will communicate to CRC any facts known to them respecting said Protected Works, and testify in any legal proceedings, sign all lawful papers, make all rightful oaths, execute all divisional, continuing, continuation-in-part, or reissue applications, all assignments, all registration applications and all other instruments or papers to carry into full force and effect, the assignment transfer and conveyance

hereby made or intended to be made and generally do everything possible for title to Intellectual Property Rights in the Protected Works to be clearly and exclusively held by CRC.

4. _____ agrees that it will not apply for any state, federal, or other U.S. or foreign jurisdiction's registration of rights in and of the Protected Works, and that it will not oppose or object in any way to applications for registration of same by CRC or others designated by CRC.

5. _____ agrees to provide to CRC a copy of the source code and all annotations thereto for all Protected Works assigned under this Agreement.

Signed and sealed this ___ day of _____, _____.

Signed on behalf of CONSULTANT:

By: _____

Printed Name: _____

Title: _____

STATE OF _____

COUNTY OF _____

On this ___ day of _____, _____, before me personally appeared _____ personally known to me proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same of his own free will for the purposes therein set forth.

Notary Public
[SEAL]

EXHIBIT E

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 of Contractor in connection therewith.

EXHIBIT F

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.