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October 22, 2015
In reply, refer to:
CRC Project No. E-116

Dear Prospective Bidder:

The Coordinating Research Council (CRC) invites you to submit a written proposal to provide services for "Evaporative Emissions Inputs to the MOVES Model," (CRC Project No. E-116). A description of the project is presented in Exhibit A, "Statement of Work."

Please indicate by letter, fax, or email by **November 3, 2015** 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
5755 North Point Parkway, Suite 265
Alpharetta, GA 30022

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

The deadline for receipt of your proposal is **November 16th, 2015.**

Yours truly,

Christopher J. Tennant
Deputy Director

EXHIBIT A

Statement of Work

Evaporative Emissions Inputs to the MOVES Model

Project objective:
To review, based on available data, the appropriate level of evaporative emissions (evap) assigned as 'input' to the MOVES model. To do this, the contractor should prepare an inventory estimate for calendar years 2004, 2009 and 2014. This inventory will be compared to the profile of vehicles (for instance: age, evap certification, and vehicle technology) currently used as 'inputs'.

Background:
The EPA is currently using 2.0 g/day hydrocarbon as the input to the evap portion of the MOVES model. EPA has recently stated that, based on some outside analysis[1], the evap input with degraded canister may be much higher. EPA also estimates that many older vehicles have degraded canisters.

The Tier 2 certification level (which has been at least partially in effect since 2004) is .95 g/day for cars and 1.2 g/day for trucks. Also the ARB LEVII evap standards limited car evap to .5 g/day and trucks to .65 g/day. Several US states have used CARB standards for several years and this would affect the overall inventory.

In MOVES the evap input is applied to all vehicles, even if they are partial zero emission vehicles (PZEVs), which have zero evaporative emissions from the fuel system. Starting in 2018 automakers will start phasing in more zero evaporative emission vehicles into their fleets, this phase in should also be taken into account in determining the MOVES evap input as evap will decline as the fleet begins to turn over.

Project outline:
Enhanced evap vehicles began to appear in 1995 and were fully phased in nationally by 1999. Using 1995-2015 as the range of years for this study a fleet inventory can be developed.

Estimation of vehicle certification to emissions standards
Prepare an estimate of the amount of evap hydrocarbons emitted in the specified calendar year. Then calculate the appropriate per vehicle evap input to the MOVES model. Please use 2004, 2009 and 2014 calendar years. For purposes of this estimation, please use sales data as of December 31 of that particular year.

Once the total evap emissions from the fleet in these years is known, prepare an estimate of the proper MOVES model input. For example, using the available sales data and the available certification data, a calculation can be made of emissions from all the vehicles in service. If in 2004 the US inventory is 1 million vehicles that emitted a total of 1 million grams of HC per year, the average input should be .0027 g/day/vehicle.

[1] EPA presentation given at CRC Real World Workshop March 25, 2015, Long Beach, CA

As an example of an approach the contractor may take in determining the inventory, the following equation may be helpful:

$$\frac{\frac{grams\ of\ HC\ of\ fleet}{day}}{number\ of\ vehicles}$$

For example of 2009 calendar year, the contractor would determine how many 2009MY Chevrolet Impala's were sold by December 31, 2009. The contractor would determine how many 2008MY Chevrolet Impala's were in the US, and so forth until the model was no longer available. It is expected that the contractor would use the available sales data from RL Polk (or something similar) and be able to mine the EPA and ARB databases to understand the evap certification result for these model years. The analysis would continue until all the vehicles in the US car park that were newer than 1980 were accounted for and all of their certification results were known. Then an overall inventory can be developed and then per vehicle input can be calculated.

In-Use Test Data

In-use test data should be obtained and compared to certification numbers for a range of model years, in order to determine if degradation is occurring. A Freedom of Information Act (FOIA) request may need to be made to obtain the data. Before proceeding with any requests, the project team will decide on the best course of action.

Estimation of vehicles built between 1980 -1995 that are still in service

It will be important to determine the number of vehicles still in service that do not have enhanced evaporative emissions systems. Therefore, the contractor should provide

- An estimate for the number of vehicles in the US that are older than 1995, and older than 1980.
- Provide an estimate of the fraction of the emissions in the 3 inventory years that 'belong' to these enhanced evap vehicles. For example, these vehicles are 1% of the total population in 2014, but provide 30% of the emissions inventory.

Final Report:

The final report should be detailed and include at least the following:

- An analysis of these years with respect to the current and informally proposed MOVES input levels. Tables or charts with the data for sales and certification (or in use) level.
- Identification of any areas where input data may be lacking.
- Precise and clear summary of the method used to develop the 'inventory' as well as any analysis conducted.
- As CRC policy, individual vehicle data should be blinded.

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).

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.