

San Joaquin Valleywide Air Pollution STUDY AGENCY

Funding air quality research in Central California

REQUEST FOR PROPOSAL for REFORMULATION OF PM_{2.5} MASS RECONSTRUCTION ASSUMPTIONS FOR THE SAN JOAQUIN VALLEY

Prepared by the Staff of San Joaquin Valley Unified Air Pollution Control District

Authorized by the Policy Committee of the San Joaquin Valleywide Air Pollution Study Agency

*Funded by the California Regional PM₁₀/PM_{2.5} Air Quality Study
under the authority of the San Joaquin Valleywide Air Pollution Study Agency*

Submittal Deadline: Proposals must be received at the address below on or before
Monday, October 31, 2011 - 5:00 PM.

Proposals received after the date and time stated above will not be accepted.

Submissions Must Include: two (2) signed copies of Proposal delivered by mail or messenger to establish official receipt;
one (1) unbound master suitable for black and white reproduction; and
one (1) electronic copy (on CD-ROM) of all submittal documents in PDF format.

Address Submissions to: Peter Biscay, Air Quality Specialist
San Joaquin Valley Unified Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726-0244

Mark Envelope: "PROPOSAL: PM_{2.5} Mass Reconstruction"

RFP Issuance Date: October 3, 2011

Contact: Peter Biscay, (559) 230-5842, peter.biscay@valleyair.org

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**REQUEST FOR PROPOSAL
for
REFORMULATION OF PM2.5 MASS RECONSTRUCTION ASSUMPTIONS FOR THE
SAN JOAQUIN VALLEY**

PROJECT ABSTRACT

This project involves the evaluation and summary of existing PM2.5 mass reconstruction assumptions through an investigation of existing literature and research on the topic. In addition, a reformulation of the assumptions for mass reconstruction are to be established that are specific to the San Joaquin Valley, along with a suite of seasonal reconstruction formulae used for a number of urban and rural locations across the air basin. A synthesis between this effort and an ongoing concurrent project on PM2.5 speciation will be required to deliver a more current and robust understanding of the spatial variation of PM2.5 species in the San Joaquin Valley.

Current funding for this project is \$100,000, and the project – including final reporting - should be completed by June 2012.

1. BACKGROUND

State and federal air quality standards for particulate matter (PM) are consistently exceeded throughout central California, adversely affecting the health and quality of life of more than 10 million people living in the region. Particulate matter pollution also affects crop yields, causes material damage, and reduces visibility. The federal Clean Air Act requires the State of California and California's air districts to adopt air pollution control measures and achieve emission reductions to attain the national air quality standards for particulate matter smaller than 10 microns in diameter (PM10) and for particulate matter smaller than 2.5 microns (PM2.5). Plans to improve air quality and provide attainment of the standards must have an effective distribution of controls among the various contributing sources, and therefore rely on a sound understanding of the local and regional sources of air pollution. Current understanding is limited on how much various source types contribute to direct PM2.5 emissions and to formation of secondary particulates in the atmosphere.

To improve the understanding of the various source contributions to ambient PM2.5 concentrations, the San Joaquin Valleywide Air Pollution Study Agency (Study Agency) is issuing this Request for Proposal (RFP) as part of the California Regional PM10/PM2.5 Air Quality Study (CRPAQS). CRPAQS is a multi-year program of meteorological and air quality monitoring, emission inventory development, data analysis, and air quality simulation modeling designed to 1) provide an improved understanding of emissions and dynamic atmospheric processes that influence particle formation and distribution and determine the contributing sources of high PM10 and PM2.5 concentrations; 2) develop and demonstrate methods useful to decision makers in formulating and comparing candidate control strategies for attaining the federal and

State PM10/PM2.5 standards in central California; and 3) provide reliable means for estimating the impacts of PM10/PM2.5 control measures on visibility, air toxics, and acidic aerosols and on attainment strategies for other regulated pollutants. The CRPAQS domain covers all of central California and most of northern California. The domain includes the San Joaquin Valley, the San Francisco Bay Area, and the Sacramento Valley.

The sponsor of this project, the Study Agency, is a joint powers agency whose purpose is to combine financial contributions from the private and public sectors to fund scientific research on PM and ozone air quality in central California. These studies are collectively known as the Central California Air Quality Studies or CCAQS. The Study Agency's decision-making body is a Governing Board consisting of one supervisor from each of the eight counties in the San Joaquin Valley. The Study Agency manages the finances of CCAQS, and relies on the CCAQS Policy Committee (state, federal, and district air agency staff; and public- and private-sector stakeholders) to provide guidance on the objectives and funding levels of Study Agency projects. The staff of San Joaquin Valley Air Pollution Control District (SJVAPCD) provides financial and legal services to the Study Agency, while the California Air Resources Board (ARB) staff provides coordination for the CCAQS Policy Committee. CCAQS projects are typically carried out by contractors who are coordinated and managed by the staff of the ARB and SJVAPCD.

2. PROJECT PURPOSE

This project is intended to improve the understanding of the chemical composition and the sources of the San Joaquin Valley's ambient particulate matter. This improved understanding will contribute to improved analysis in upcoming attainment plans, allow for refined control strategies, and provide data for future studies focused on the physiological impacts of various components of PM2.5.

This project will evaluate the assumptions for mass reconstruction for PM2.5 so that efforts to identify and quantify source origins are as accurate as possible. Incorrect identification and quantification of source origins may result in decreased effectiveness particulate matter control strategies, and may waste resources on unneeded controls.

The results of this project will help focus efforts on developing more effective future regulations and air quality plans. These efforts will help the SJVAPCD attain current and future PM2.5 National Ambient Air Quality Standards (NAAQS).

3. PROJECT DESCRIPTION

This project involves a literature search and summary of current methodologies and assumptions being used in PM2.5 mass reconstruction, a development of new assumptions and formulae more relevant and accurate for PM2.5 in the San Joaquin Valley, and the culmination of a final report summarizing the analysis and results from the efforts within this project.

3.1. Objectives

This project should be completed by end of June 2012, and the objectives are summarized below.

A responding Proposal should include commitment to perform the tasks identified in Section 3.2, and provide:

1. A literature search and summary of methodologies and assumptions currently being used for PM2.5 mass reconstruction, along with a summary of formulae based on these current assumptions.
2. A reformulation and development of new formulae used for PM2.5 mass reconstruction, based on more appropriate assumptions and methodologies for urban and rural sites for each season in the San Joaquin Valley. This reformulation will include some preliminary results from a concurrent ongoing project focused on the speciation of PM2.5 samples at various locations in the San Joaquin Valley.
3. A final report that fully documents all of the above, and includes an assessment of the mass capture efficiency of the revised methodology for PM2.5 mass reconstruction. This report will also compare and contrast the PM2.5 compositions at various locations around the San Joaquin Valley based on the provided speciation data and the reformulated mass reconstruction formulae.

Once the program of work has been agreed to and initiated, the contractor must seek approval of the Study Agency Project Manager prior to recommending or implementing any changes to the proposed project. While conducting the project, additional data collection by the contractor beyond the specified program of work must remain within the authorized budget.

3.2. Tasks/Scope

Task 1: Mass Reconstruction Assumptions

Technical Background

The current calculation methods for mass reconstruction of PM2.5 needs to be examined for potential revision and technical updates.^{1, 2, 3} Currently, the same generic formulae and assumptions are being used for both PM10 and PM2.5 mass reconstruction. This formula has not been revised since the mid 1990s.^{4, 5} Recent scientific journal publications report considerable variation in the overall fine mass concentration ratios due to variability of subcomponents (organic mass/organic carbon ratio, metals, and ions).^{1, 2, 3, 6} Thus the reconstruction of the overall fine mass concentration ratios varies considerably. The PM10 and PM2.5 variability of the subcomponents have been shown to correlate with multiple factors including the

proximity to marine influence, aridity, season, monitoring site location, and biogenic source contributions.⁶⁻¹²

PM10 and PM2.5 mass reflect different contributing source origins and should require specific assumptions appropriate to the particle size range. For example, measured PM10 emission rates from a motor vehicle tunnel (in Milwaukee) ranged from 38.7 to 201 mg km⁻¹ and were composed mainly of organic carbon (OC, 30%), inorganic ions (sulfate, chloride, nitrate, ammonium, 20%), metals (19%), and elemental carbon (EC, 9.3%).⁹ PM10 metal emissions were dominated by crustal elements silicon, iron, calcium, sodium, magnesium, aluminum, and potassium. Elements associated with tailpipe emissions and brake and tire wear, were copper, zinc, antimony, barium, lead, and sulfur. Metals emitted in PM2.5 were lower (11.6% of mass) than crustal metals.⁹ The smaller metals fraction is indicative that the PM2.5 metals are not fully oxidized and therefore have less mass than metals from soils found in PM10. Much of the oxidized metal is in the coarse particle range and not the fine range, thus using PM10 standard mass reconstruction formulae for PM2.5 will overstate the contribution of oxidized metals. This will also reduce proper source identification in Chemical Mass Balance (CMB) and similar evaluation approaches.

Seasonal differences in the PM2.5/PM10 ratio are not reflected in current mass reconstruction methods either. It has been shown that the mean California PM2.5/PM10 ratio (1980-2007 data collected from multiple sources, calibrated, standardized, and statistically corrected) tend to be greatest during the months of November through January and lowest during the months of May through September.⁶ It was concluded that this seasonal variation is due to higher concentrations of coarse PM (PM10 – PM2.5) during the drier months and from higher concentrations of ammonium nitrate during the cooler months.

Regional, area, or site-specific mass reconstruction assumptions may be required to improve the quality of source identification. Large inter-site variation has been shown to exist, therefore the use of generic fine mass reconstruction ratios may be inappropriate across sites; although when the PM2.5 mass concentrations were regressed against PM10 mass concentration by site and month, the reported correlation was high⁶. The wide variations in climate, soil type, biogenic diversity, and density and variations in major source types throughout the San Joaquin Valley may require area or site specific assumptions to improve mass reconstruction and source identification.

Work Elements

This task requires the contractor to review and summarize existing PM2.5 mass reconstruction assumptions and available literature and develop San Joaquin Valley seasonal and site-appropriate PM2.5 mass reconstruction ratios with greater spatial and temporal resolution than is currently in use. The Proposal must include a workplan for this task and indicate strong knowledge and ability to perform this task. The methodology proposed for improving mass reconstruction must utilize processes,

procedures, and/or analyses demonstrated to have acceptable reproducibility, reliability, and precision.

Mass reconstruction components should include all of the following or justify why any of these must be omitted. The Proposal should provide a recommendation and reasons as to whether the following assessments are included or excluded from their Proposal:

1. Carbon: organic carbon, elemental carbon, polycyclic aromatic hydrocarbons, and tracer compounds
2. Ions: sulfate, chloride, ammonium, and nitrates including peroxyacetyl nitrate (PAN), or their components and tracer compounds; these are important with regards to health effects
3. Soil component metals: silicon, aluminum, iron, calcium, magnesium, potassium, sodium, zinc, nickel, copper, and their oxidized states, or any soil components or tracers that may significantly contribute to and identify PM2.5
4. Anthropogenic source metals from tire and brake wear: iron, titanium, copper, barium, molybdenum, zinc, nickel, copper, and zirconium and their oxidized states, or any anthropogenic source components or tracer compounds that may significantly contribute to and/or identify PM2.5
5. PM2.5 biogenic sources: spores and endotoxins correlated to barium, calcium, iron, zinc, potassium, silicon; and coarse and fine sugars (arabinose, fucose, galactose, glucose, mannose, rhamnose, and xylose), levoglucosan, or any biogenic source components or tracer compounds that may significantly contribute to and/or identify PM2.5

As this project begins, another project focused on the speciation of PM2.5 filter samples in the San Joaquin Valley will already be underway. This concurrent project will improve the spatial understanding of PM2.5 species in the San Joaquin Valley, which will be helpful in improving mass reconstruction assumptions. The contractor will be required to use this new speciation data to aid in the development of new mass reconstruction formulae. The SJVAPCD will be the point of contact for the contractor regarding this forthcoming speciation data.

At the conclusion of the task, the contractor will provide the Study Agency Project Manager a report documenting the initial results in updating the mass reconstruction methodology, assumptions, and formulae.

Task 2: Prepare a Draft Final Report

After the Study Agency has approved all work for prior tasks, the contractor will provide a Draft Final Report. This report will describe the project approach and methodology and presents the results. The report shall include an executive summary containing an abstract of the project and a summary of key findings, a report on each task undertaken, and an assessment of the mass capture efficiency of the revised methodology for PM2.5 mass reconstruction.

Task 3: Prepare a Final Report

After the contractor submits the Draft Final Report, the Study Agency Project Manager will provide comments to the contractor. The contractor will fulfill the Project Manager's requests for supplemental documentation and clarifications in the report and address the Project Manager's comments. The contractor will provide the Final Report within 45 days after receipt of the Project Manager's comments. The Final Report must be complete in providing documentation and results for all required objectives. The Study Agency requires the technical writing to be adequate to clearly explain the processes used to carry out the project. Multiple revisions may be required if the Final Report is not written to the satisfaction of the Study Agency.

3.3. Work Products/Deliverables

Initial Conference Call: At the start of the contract period, the contractor will meet with the Project Manager via telephone or in person to discuss the overall plan, details of performing the tasks, the project schedule, items related to personnel or changes in personnel, and any issues that should be resolved before work can begin. The Project Manager may include key personnel of the CCAQS Technical or Policy Committees in this discussion as needed.

Task Reports: The contractor will provide written reports to the Study Agency Project Manager upon completion of each of the tasks identified in Section 3.2, and participate in conference calls to discuss the reports. The contents of the reports shall adequately cover the work undertaken and results generated for each task, and shall include:

- Current status of work products and deliverables.
- A budget status summary indicating the percentage expended on the task and explanation for any items that are not in conformance with the submitted project budget (note: Study Agency agreements allow some reallocation of funding resources between tasks during the conduct of the project; however, exceeding the total budget is not authorized)
- A review of the project timeline and justification for any requested revisions to intermediate progress dates

Other Meetings and Deliverables: When requested by the Project Manager, the contractor shall meet with the Project Manager via telephone to discuss the overall plan, details of task progress, or concerns regarding compliance with required performance objectives or timelines. The Project Manager will notify the contractor in advance of any special topics so contractor may assemble key staff or information to respond. Contractor shall involve in this discussion key project personnel or subcontractors necessary to provide details of task progress. The day before the conference call, the contractor shall email the Project Manager a brief progress report or presentation material that includes:

- Current status of work products and deliverables

- Explanation for any delays in performance
- Justification for any revisions to project budget
- Action items for which the contractor desires direction or approval

The Study Agency may request other interim deliverables. Based on progress reports and preliminary results, the Study Agency may provide direction to contractor to delete or amend objectives and deliverables. Deletion of tasks or deliverables is fully within the authority of the Study Agency; however contractor will be compensated for work already completed on curtailed tasks. The contractor and Program Manager must ensure that any amended deliverables are within the authorized budget for the project. Any extra effort directed by the Study Agency that does not fall within the authorized budget requires formal amendment to the agreement. If the Study Agency determines a need for additional tasks or services not included in the Proposal, the contract may be amended by agreement of both parties to include additional tasks and related costs.

Electronic File Formats: The contractor shall provide reports as Adobe PDF documents. Methodology documents and data shall be provided to the Study Agency in the formats of Microsoft Office 2007 Professional software (Word, Excel or Access). Other work products such as databases or modeling files may be delivered in other appropriate file formats, as specified by the Project Manager.

Draft Final Report and Final Report: The contractor shall provide the Draft Final Report and Final Report in the electronic file formats specified above. Upon approval of the Final Report by the Study Agency, the contractor shall deliver to the Study Agency five bound copies and one unbound copy of the report incorporating all final alterations, additions and appendices, as well as a copy of the report in the electronic file formats specified above.

Compensation and Invoices: The contractor will be paid for each deliverable when the Study Agency deems that the deliverable satisfies the applicable requirements of the contract. Ten percent (10%) of each invoiced payment will be withheld until all work is complete and approved by the Study Agency. The total of payments shall be separated into four invoices:

- Invoice One should reflect costs for Task 1 and be submitted with the Report for Task 1.
- Invoice Two should reflect costs for Task 2 and be submitted with the Report for Task 2.
- Invoice Three should reflect costs for Task 3 and be submitted with the Report for Task 3.
- Invoice Four should reflect the 10% retention from all previous invoices and be submitted upon Study Agency approval of the Final Report.

The contractor shall submit invoices in triplicate. Invoices must clearly show the Study Agency contract number.

Additional tasks performed by the contractor or its subcontractors to develop supporting information or analysis, which were not specified in the Proposal, will not be reimbursed without prior written approval from the Study Agency. Unapproved additional tasks are not reimbursable.

3.4. Utilization of Results

The results of this project will be valuable for improving the ability to accurately reconstruct PM2.5 mass for both urban and rural locations throughout the CRPAQS domain. These results will also improve the understanding of how the reconstruction of PM2.5 mass differs when comparing sites and seasons in the San Joaquin Valley. The development of sets of PM2.5 mass reconstruction formulae for each season will especially be important for the fall and winter, when concentrations are at their highest. Furthermore, these results will be valuable in developing attainment plans of current and future PM2.5 NAAQS, including Chemical Mass Balance (CMB) modeling. The contractor should consider the intended end-use of the results and provide data suitable for this purpose. The contractor is not authorized to establish restrictions on the release or use of final products by the Study Agency.

4. PROJECT SCHEDULE

The Study Agency intends for the project to be completed according to the following schedule of deliverables. The Study Agency may agree to a different schedule, however, which would be specified in the contract. Compensation will correspond with the submission of task reports and final reports. Table 1 shows the deadlines associated with each task and Figure 1 shows the timing of the tasks.

Table 1: Project Schedule and Deliverables

Action/Work Product	Approximate Date
Release of RFP	October 3, 2011
Deadline for Proposal	October 31, 2011
Contractor Selection	November 1-10, 2011
Contract Execution	December 15, 2011
Task 1: Mass Reconstruction Assumptions	February 29, 2012
Task 2: Draft Final Report	April 30, 2012
Task 3: Final Report	June 30, 2012

5. BUDGET

Cost will be a factor in evaluating proposals responding to this RFP. Proposers are directed to provide task-related costs in their proposal budget summary rather than a lump sum amount. Proposals will be evaluated both by comparison of cost for comparable tasks as well as projected total cost. The Study Agency's review committee is authorized to consider the comprehensiveness of proposed efforts as well as total proposed cost to provide reasonable comparisons of the proposals. Evaluation criteria are described in Section 10.2.

The Study Agency's budget for this project is \$100,000. The budgeted amount is available for research, analysis, coordination, teleconferences, meetings, report writing, subcontractors, and all other efforts undertaken by the contractor for this project.

Proposers shall use the format of Attachment C (or similar) to itemize the costs of the Proposal. Costs must be itemized by the following categories:

Task: Itemize the costs for each task. The Study Agency reserves the right to remove tasks as deemed necessary to remain within budget.

Labor: List the hourly labor rate for each assigned principal and technical specialist. The rate quoted must include labor and administrative overhead costs.

Subcontractor Costs: Identify subcontractors by name, list their cost per hour or per day, and the number of hours or days their services will be used.

Travel Costs: Identify estimated travel costs, including the number of trips required, destinations, and approximate costs of travel.

Miscellaneous Costs: Identify costs of any materials, and equipment purchases or rentals. Note that any equipment that is substantially purchased using Study Agency funds for conduct of this project becomes the property of the Study Agency.

It is expected that general overhead and administrative costs are included in the hourly rate for labor. It will be assumed that all contingencies and/or anticipated escalations are included. No additional funds will be paid above and beyond the contracted amount for the services specified in the Proposal. If the Study Agency determines a need for additional tasks or services not included in the Proposal, the contract may be amended by agreement of both parties to include additional tasks and related costs.

6. REQUIRED QUALIFICATIONS

To be selected, a contractor must have demonstrated extensive experience and expertise in the following areas:

- Experience and skill in performing the types of technical tasks required for completion of this project
- Excellent working relationships with government agencies
- Skill in preparing clear reports
- Excellent technical writing skills

To be selected, the contractor must also demonstrate the ability and resources to produce the deliverables requested in this RFP. The Study Agency reserves the right to reject any Proposal deemed non-responsive to the RFP, not responsible, and/or not reasonable.

6.1 Excluded Parties List System (EPLS)

A contractor or any individual identified in the Proposal that appears in the Excluded Parties List System (EPLS) is not eligible for award of a contract. The EPLS is a central registry that contains information regarding entities that are ineligible from receiving Federal contracts. Access to the EPLS is available at www.epls.gov.

The Proposer should complete and return Attachment A with the Proposal to certify eligibility for participation under federal assistance programs.

6.2 Compliance with Federal and State Requirements

The selected contractor shall comply with applicable federal requirements including but not limited to Office of Management and Budget Circular No. A-87 (Cost Principles for State, Local, and Indian Tribal Governments) and Circular No. A-102 (Grants and Cooperative Agreements With State and Local Governments), and Circular No. A-133 (Audits of States, Local Governments, and Non-Profit Organizations).

California Government Code Section 1090 generally prohibits a public official from being financially interested in a contract which he or she has made or participated in an official capacity. Under certain circumstances, persons who perform work pursuant to a contract with a government agency may be subject to the restrictions of Government Code Section 1090. With respect to the CRPAQS, this means that based on participation in the planning of the project, certain consultants are precluded from participating in all or some of the post-planning contracts. This preclusion would apply to a contractor as either a prime contractor or a subcontractor. In most cases, whether a particular contractor is eligible to bid will depend on an analysis of all of the circumstances surrounding the contractor's earlier participation in the CRPAQS and the work that that contractor now proposes to perform. Any response to this RFP which includes a paid participant who is ineligible based on Government Code Section 1090 will be rejected during the review of the Proposals.

Questions concerning the eligibility of a potential contractor must be directed to the Study Agency attorney at the address provided below prior to the preparation of a Proposal.

Catherine T. Redmond, Counsel
San Joaquin Valley Unified Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

7. PROJECT DIRECTION

7.1. Management

The contractor selected to conduct this work shall report to the Study Agency Project Manager, who will be identified in the contract. For the purposes of this project, the staff of the SJVAPCD will write and monitor contracts with the participants and will be the primary interface between the contractor, the Policy and Technical Committees, and the Study Agency. The contractor must not begin work on the project until a contract is fully approved by the San Joaquin Valleywide Air Pollution Study Agency.

7.2. Submittal of Results

All completed files or reports shall be released by the contractor to the Project Manager for distribution and review by the Study Agency. The Study Agency may review any of the results in whole or in part and submit comments or questions to the contractor through the Project Manager. The contractor shall perform any additional work needed to address issues raised by this process for the items authorized by the Project Manager unless such effort would exceed the authorized budget. Any extra effort directed by the Study Agency that does not fall within the authorized budget requires formal amendment to the agreement. If the Study Agency determines a need for additional tasks or services not included in the Proposal, the contract may be amended by agreement of both parties to include additional tasks and related costs.

8. CONTENTS OF PROPOSALS

Proposals must be signed by a duly authorized official of the responder and must state that the proposal is valid for a period of not less than 90 days from the date of submittal. The Proposer's name and address as used in contractual agreements should be provided. The name, address, title, telephone number, fax number and email address of the person(s) authorized to execute agreements and the person(s) acting as principal for the work conducted in the proposal should be provided.

Information in the proposals shall become public property subject to disclosure under the Public Records Act. Proposals should convey a maximum of technical content related to the relevant task with a minimum of extraneous material. Proposals should convey a high degree of technical understanding and innovation while demonstrating the ability to present complex scientific results to decision-makers. The proposal should be clear and concise. The response to the RFP is expected to be brief, with text of the proposed approach to completing the tasks limited to less than 30 pages, not inclusive

of qualification information (e.g. attached resumes, etc.), budget summary table and timeline.

Submitted proposals must follow the format outlined below and all requested information must be supplied. The submitted proposal shall be limited to 30 pages, single-sided or 15 pages, double sided, with 1-inch margins. Proposal shall be printed on white paper and the font shall be black Arial and no smaller than 12 point. Failure to submit proposals in the required format may result in elimination from proposal evaluation.

Cover Letter – Must include the name, address, and telephone number of the Proposer’s company, total cost, the name of the contact person for the proposal, and be signed by the person or persons authorized to represent the firm.

Table of Contents – Clearly identify material contained in the proposal by section and page number.

Summary (Section I) – State the overall approach to the project and objectives. Demonstrate a clear understanding of the project goals and objectives. Include total project cost. Provide specific examples of steps to be taken to complete the project, as well as measures to assure repeatability, reliability and applicability.

Work Program (Section II) – Include the approach to completing tasks identified in Section 3 of this RFP. Describe work activities or tasks to be performed including the sequence of activities and a description of methodology or techniques to be used. Proposer may include suggestions of any missing tasks to add for fulfillment of Section 3 objectives.

Program Schedule (Section III) – Provide projected milestones or benchmarks for major products/reports within the total time allowed. This proposed schedule may include flexibility reflecting the investigative nature of the project. Include information on the availability of the Proposer and proposed subcontractors during the proposed term. Indicate and explain or justify adjustments to the schedule anticipated by or proposed by respondent.

Project Organization (Section IV) – Describe the proposed management structure, organization of the contracting group, and facilities available.

Assigned Personnel (Section V) – Identify the principals having primary responsibility for conducting the analysis. Discuss their professional and academic backgrounds. Provide a summary of similar work they have previously performed. List the amount of time, on a continuous basis, that each principal will spend on this project. Describe the responsibilities and capacity of the technical personnel involved. Substitution of the project manager and/or lead personnel shall not be permitted without prior written approval of the Study Agency Project Manager.

Study Agency and District Resources (Section VI) – Describe any Study Agency or District services and staff resources needed to supplement Contractor activities to achieve identified objectives.

Subcontractors (Section VII) – If subcontractors are to be used, identify each of them in the proposal. Describe the work to be performed by them and the number of hours or the percentage of time they will devote to the project. Provide a list of their assigned staff, their qualifications, and their relationship to project management, schedule, costs and hourly rates.

Costs of Proposal (Section VIII) – Identify all costs associated with the execution of this project and any additional identified tasks. The proposed payment for each task identified in Table 1 should be provided, as well as hourly billing rates and amount of time for each staff member that will be a part of this project. Any additional services that may be necessary to complete additional processing identified by the investigative tasks, if authorized for completion by the Study Agency Project Manager, should be clearly stated and identified by an hourly billing rate. Also, provide a completed Proposal Budget Summary Table similar to Attachment B and a completed Proposal Budget Template Itemized by Task and Personnel similar to Attachment C.

Contractor Capability and Client References (Section IX) – Provide a summary of the firm's relevant background experience. Include a brief summary of related studies completed for other parties that are of a similar nature to the work requested by this RFP. Report examples (see Section 11) can be provided in an attachment. Also provide a list of client references for similar projects, including the client manager's name, title/function, and phone number for the most relevant projects.

Conflict of Interest (Section X) – Identify any current business relationship that might be affected by the conduct or results of this project. Proposal must disclose any recent or current contracts with business entities regulated by any air districts in central California. The Study Agency will consider the nature and extent of such work in evaluating the proposal (see Section 10.0).

Previous Work Samples (Section XI) – Attach a copy of any work prepared similar to what is requested in this RFP. These items shall not be considered part of the 30-page limitation set for the proposal.

Certificate of Eligibility for Federal Funding (Attachment A) – The Proposer should complete and return the certification regarding debarment, Attachment A, with the Proposal.

Supplemental Information – Extensive documentation is discouraged, but attachments for the budget summary table and resumes can be included in the proposal. Attached documents are not part of the 30-page limitation.

9. SUBMISSION OF PROPOSAL

All proposals must be submitted according to the specifications set forth below. Failure to adhere to these specifications may be cause for rejection of proposal.

- Due Date – Proposal must be received no later than 5:00 p.m. on October 31, 2011. Late proposals will not be accepted. Any correction or resubmission by the contractor will not extend the submittal due date.
- Delivery Address – Proposal must be directed to:

Peter Biscay, Air Quality Specialist
San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244

- Identification – To accommodate processing and identification of time of receipt, the contractor shall submit the required copies of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the contractor and the words:

“PROPOSAL: PM2.5 Mass Reconstruction”

- Electronic Copy (CD-ROM) – The submission shall include an electronic copy of the Proposal in PDF format.

Grounds For Rejection – A proposal may be immediately rejected if:

- It is received at any time after the exact due date and time set for receipt of proposals
- It is not prepared in the format prescribed
- It is not signed by an individual authorized to represent the firm

Once a proposal is submitted, the composition of the project team cannot be altered without prior written consent of the Study Agency. The proposal shall constitute a firm offer and may not be withdrawn for a period of 90 days following the last day to accept proposals. Proposals become the property of the Study Agency. The Study Agency reserves the right to reject all proposals and make no award.

10. PROCESS

10.1. Addenda and Supplements to the RFP

The Study Agency may modify this RFP and/or issue supplementary information or guidelines relating to the RFP before the Proposal deadline. In the event that it becomes necessary to revise any part of this RFP, or if additional information is necessary to enable adequate interpretation of the provisions of this RFP, or if it is necessary to extend the deadline for Proposals, a supplement to the RFP will be released and distributed in the same manner as the release of the RFP.

10.2. Proposal Evaluation and Contractor Selection Process

The Study Agency will evaluate all Proposals received by the deadline to determine responsiveness to the RFP, ensure the requirements for this project will be satisfied, and will then commend a contractor for approval by the CCAQS Policy Committee. Failure to adhere to specifications in this RFP may be cause for rejection of the Proposal. The Technical Committee, Policy Committee, Study Agency, and participating air districts retain the right to reject all Proposals received and conduct direct negotiations with a selected contractor if all Proposals are considered to be substantially nonresponsive to key elements.

Proposals will be rated on the following key factors:

1. A demonstration of the Proposer's qualifications and ability to perform the services requested in the RFP. Proposals should include specific discussions of (a) previous working relationships with government agencies, and (b) recent project experience. Extensive corporate experience is not as important as the capabilities of the principals who will be dedicated to the project. However, past performance issues may be considered in the selection process. Greater detail may be incorporated by reference to a corporate website.
2. Effectiveness of the proposed action to meet the goals of the RFP; thoroughness and appropriateness of the proposed work program; innovation in approach to work tasks.
3. Timeliness of the proposed schedule for the completion of tasks.
4. Efficiency and total cost of the Proposal.
5. Clarity and thoroughness of the Proposal; presentation, including good organization, formatting, and a minimum of grammatical errors;

During the selection process, the Study Agency may interview proposers with scores above a natural break, for clarification purposes only. No new material will be permitted at this time.

A contract will be awarded to the Proposer with the best acceptable Proposal based on cost effectiveness and the criteria described in this section. The selection of contractor, final project budget and award of contract are subject to approval by the Policy Committee and the San Joaquin Valleywide Air Pollution Study Agency Governing Board. The Study Agency may choose to reject all Proposals. All proposers will be notified of the selection process results by letter.

10.3. Contract Negotiation and Approval

Contract negotiation will be conducted after approval of contractor selection by the Policy Committee. All agreements must be approved and executed by the Study Agency. Standard contract language is available for advance review by request to the Program Manager.

11. INSURANCE

The contractor and any subcontractors must maintain the following insurance coverage throughout the term of the agreement with the Study Agency:

1. Liability insurance for bodily injury, including automobile liability, with limits of coverage of not less than Five Hundred Thousand Dollars (\$500,000) each person and One Million Dollars (\$1,000,000) each occurrence; and
2. Liability insurance for property damage with limits of coverage not less than Fifty Thousand Dollars (\$50,000) each occurrence; and
3. Workers compensation insurance in accordance with the California Labor Code; and
4. Commercial general liability insurance with minimum limits of coverage of not less than \$1,000,000 per occurrence.

The foregoing insurance policy(s) shall not be canceled, reduced, or changed without a minimum of 30 calendar days' advance, written notice given to Study Agency.

Prior to performing its obligations under this Agreement, the contractor shall provide the Study Agency with a certificate of insurance from an insurer acceptable to Study Agency as evidence of complying with the insurance requirements described above.

12. DATA OWNERSHIP AND PUBLICATION

The Study Agency shall have the right, at reasonable times during the project, to inspect and reproduce any data received, collected, produced, or developed by the contractor. No reports, professional papers, information, inventions, improvements, discoveries, or data obtained, prepared, assembled, or developed by contractor shall be released or

made available (except to the Study Agency) without prior, express written approval from the Project Manager. At the completion of the project, the contractor shall provide the Study Agency all data developed through conduct of the project that is in its possession. All data which is received, collected, produced, or developed from conduct of the project shall become the exclusive property of the Study Agency; however, the contractor shall be allowed to retain a copy of any non-confidential data received, collected, produced, or developed by the contractor. Should the contractor subsequently include data collected in this project for other evaluations and publications, the Study Agency would appreciate a notification of publication and/or a copy of the article or manuscript published.

13. CONFIDENTIAL INFORMATION

All responsible Proposals received by the Study Agency are public records available for review by the public after the selection process is completed. Proposals containing information the Proposer identifies as confidential or proprietary will be rejected as nonresponsive.

14. REFERENCES

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4. Sisler J, Malm W, & Gebhart K. (1996). Spatial and Seasonal Patterns and Long Term Variability of the Composition of Haze in the United States: An Analysis of Data from the IMPROVE Network, 1996. *Interagency Monitoring of Protected Visual Environments, IMPROVE Reports, Report II, July 1996, Chapter 2, Optical and Aerosol Data*. Retrieved from <http://vista.cira.colostate.edu/IMPROVE/Publications/Reports/1996/PDF/CHAP2.NE W.96.pdf>
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9. Lough G, Schauer J, Park J, Shafer M, DeMinter J, & Weinstein J. (2005). Emissions of Metals Associated with Motor Vehicle Roadways. *Environmental Science & Technology*, 39(3), 826-836. DOI: 10.1021/es/048715f
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12. Tominaga S, Matsumoto K, Kaneyasu N, Shigihara A, Katono K, & Igawa M. (2011). Measurements of Particulate Sugars at Urban and Forested Suburban Sites. *Atmospheric Environment*, 45, 2335-2339.

ATTACHMENT A

Certification Regarding
Debarment, Suspension, Ineligibility and Voluntary Exclusion
Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98 Section 98.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988, Federal Register (pages 19160-19211).

(1) The prospective recipient of Federal assistance funds certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective recipient of Federal assistance funds is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this Proposal.

Name and Title of Authorized Representative

Signature _____

Date _____

ATTACHMENT B
 Proposal Budget Summary

Direct Costs:	
1. Labor: Salaries and benefits paid to employees	\$
2. Subcontractors	\$
3. Travel	\$
4. Equipment, Materials and Supplies	\$
5. Miscellaneous (please specify)	\$
TOTAL DIRECT COST:	\$
Indirect Costs:	
6. Labor Overhead (as percentage of Labor Cost) _____ % rate	\$
7. Other Indirect Costs (please specify)	\$
8. Fee or Profit (as percentage of Total Cost) _____ % rate	\$
TOTAL INDIRECT COST:	\$
TOTAL COST:	\$

ATTACHMENT C

Proposal Budget Template, Itemized by Task and Personnel

Staff and Cost Categories	Hourly Rate*	Task 1 (hours)	Task 2 (hours)	Task 3 (hours)	Total Hours	Total Cost
Staff 1						
Staff 2						
Staff 3						
Staff 4						
Staff 5						
Subcontractor 1						
Subcontractor 2						
TOTAL HOURS BY TASK						
TOTAL COST BY TASK						
Travel						
Material and Other Direct Costs						
Fee						
Additional work (please specify)						
Miscellaneous (please specify)						
TOTAL FOR PROPOSAL						

* Hourly Rate = salary, benefits and administrative overhead to be charged to the client.