

# **REQUEST FOR PROPOSALS**

## **CENTRAL CALIFORNIA OZONE STUDY (CCOS)**

### **Comparison of Ambient Measurements to Emissions Representations for Modeling**

June 28, 2005

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## 1. TECHNICAL OBJECTIVE

The objective of this project is to provide corroborative evidence, with sufficient justification, that can potentially explain disagreements between modeled and observed pollutant concentrations. Although many factors can affect air quality model performance, the specific focus of this project is to investigate potential biases in the hourly emissions estimates that are input to the air quality model (i.e., the modeling inventory). To accomplish the project objective, a variety of methods will be investigated that can be used to compare the gridded emissions modeling inventory as used in ozone simulation of CCOS episodes with corresponding hourly ambient measurements of precursors collected during the CCOS field study.

Gridded emissions files have been prepared and have been used for ozone simulation of the July-August 2000 CCOS episode. Gridded emissions estimates have also been developed for initial modeling of the September 2000 CCOS episode; however, these estimates need to be updated. It is expected that some form of gridded emissions preparation covering the entire CCOS season will be developed to support a seasonal modeling project that is currently in progress. To provide a robust analysis, this project should examine as many days of data as are available for the CCOS field program. Since the CCOS project did not collect day specific emissions data for each day of the CCOS field program, daily gridded emissions files are developed using the base emissions inventory in conjunction with monthly activity profiles and with temperature adjustment for each specific day. ARB will provide such gridded emissions for the July-August 2000 CCOS modeling episode. Respondents to this RFP should indicate their ability to perform or to subcontract those activities related to updating existing gridded emissions files for the September 2000 CCOS modeling episode and developing suitable emissions information for use in comparisons with available ambient measurements collected during other times during the summer of 2000, and the associated cost for this service.

Particular attention is to be given to evaluating the correlation between ambient measurements and the modeling emissions estimates for the San Francisco Bay Area, San Joaquin Valley, and Sacramento area. The Contractor will integrate and synthesize similar evaluations from other CCOS data analysis studies, review biases that are indicated among the different approaches and make general and specific conclusions regarding the degree of correlation that should be expected between ambient concentrations and emissions distributions used for modeling and the aggregate accuracy of the CCOS emissions inventory that can reasonably be characterized by evaluation of the ambient data.

The project will also involve evaluating the suitability of the available ambient measurement data and of analysis methods that have the potential to accomplish the project objective. The basis for this is that there may be significant uncertainties associated with the data and/or the methods that could lead to misrepresenting potential biases in the modeling inventory. Thus, the level of these uncertainties should be characterized along with the findings. Uncertainty in receptor-based techniques, for instance, can be inherent in the method itself and can reside in the data inputs as well (e.g. the representativeness of ambient measurements, field or laboratory methods, or

the source profiles used). For example, see Yarwood et al. (2005) for a recent assessment of the chemical mass balance receptor modeling approach.

The results of this project may be useful in the preparation of State Implementation Plans (SIPs) for 8-hour ozone in the 2006 time frame. To support this potential use of products of this effort, an interim report is needed early enough to be of use in the SIP process. Therefore, the respondent should plan to provide an interim report by 31 January 2006 to provide information to assist the preparation of the State Implementation Plans. If after examination of the project schedule, the respondent does not believe that 31 January 2006 is a date that can be achieved for the interim report, then the respondent should provide a recommended expeditious schedule for consideration in the contractor selection process. The interim report is required to include a summary of the findings developed by the date of issuance of the interim report that can be established as strongly supported by available data and justified by analysis. Because of the intended use of the interim report, the report is required to be much more than a status report and is required to identify the level of correlation that should be expected between modeling emissions estimates and ambient concentrations (based upon the identified analysis methods and extent of analysis completed for preparation of the interim report), the extent to which ambient measurements can be used to identify and evaluate divergences from emissions estimates, and which, if any, modeling emissions estimates may be subject to significant biases. The contractor will also specify a level of confidence for each finding based on the scientific credibility of the method used and the uncertainties involved.

During the CCOS summer 2000 field measurement program, ambient VOC speciation measurements as well as NO<sub>x</sub> and CO measurements were made at various locations in the study area. Additional ambient VOC speciation, NO<sub>x</sub> and CO measurements have been made during other portions of the year as part of the California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study (CRPAQS). Thus, the data collected under CRPAQS may also be useful for this project. Emissions estimates are available for the period from 15 December 2000 through 15 January 2001. Consideration should be given to making comparisons of gridded emissions developed to support CRPAQS modeling activities with pertinent ambient measurements as may be possible within available budgetary constraints. CCOS data validation efforts are discussed by Fujita, Campbell, and Snorraddottir (2005). Sonoma Technology Inc. (STI) is currently reviewing VOC and other aerometric data collected in the CCOS summer 2000 field measurement program. Further information on the field measurement program and other CCOS and CRPAQS studies may be found at the following sites:

<http://www.arb.ca.gov/airways/ccos/ccos.htm>

[ftp://ftp.arb.ca.gov/carbis/ptsd/ccags\\_tac/ccags\\_tac.htm](ftp://ftp.arb.ca.gov/carbis/ptsd/ccags_tac/ccags_tac.htm)

<http://www.arb.ca.gov/airways/ccags.htm>

## 2. SCOPE OF WORK

The scope of work for this project includes the following 11 tasks:

Task 1. Participate in a project kickoff meeting with the CCOS Technical Committee and submit a detailed draft work plan. Attend a one-day meeting in Sacramento, California, to discuss plans for the conduct of the proposed study. ARB Technical Support Division staff will provide their perspective on the current status of the emissions inventory for the study area and will indicate those source categories for which emissions estimates are thought to be subject to the greatest uncertainties, provide information on the methods for preparing, speciating and spatially distributing the emissions for modeling, and provide information regarding, and access to, ambient data useful for evaluating correlation. Based on the discussions at the kickoff meeting, prepare a draft work plan and submit it to the Technical Committee for review and comments. A requirement for the draft work plan is to specify those analyses that will be included in the interim report to be produced in Task 11. Selection of analysis methods should prioritize technical value and suitability to assist the CCOS Technical Committee to better understand the uncertainties inherent in our current modeling methods and estimations and which, if any, portions of the emissions inventory may be subject to significant biases. Responding to the comments provided, prepare and submit a final work plan.

Task 2. Identify monitors for which either one-hour or three-hour speciated VOC data were collected and were validated using appropriate QA/QC processes. Similarly, identify available ambient NO<sub>x</sub> and CO measurements. Coordinate with other CCOS data QA and data analysis contractors to examine the usefulness of VOC speciation measurements collected as part of CCOS and the California PM<sub>10</sub>/PM<sub>2.5</sub> Regional Air Quality Study (CRPAQS). Determine which monitors would be useful for evaluating VOC, NO<sub>x</sub> and CO emissions, and which sources may be contributing significantly to the ambient air sampled at these monitors. Consider use of both summer and winter VOC, NO<sub>x</sub>, CO and other measurements in the evaluation of key components of the emissions inventory. Present findings in a technical memorandum and discuss with the CCOS Technical Committee prior to commencing further work.

Task 3. Acquire ARB's current emissions speciation database and identify any other available speciation profiles (including, but not limited to, emissions source – or chemical speciation profiles from the U.S. EPA). Review key documentation concerning the sources of information used to develop the profiles. The focus of this effort should be on new or improved information not otherwise reflected in the ARB speciation database. Assess the suitability of the ARB speciation profiles. This assessment should be based on a set of criteria that can be used to decide if a given profile is superior to another. The set of criteria could include, but not be limited to, the number of tests conducted, the number of chemicals measured, and applicability to California. Prepare a technical memorandum for review and approval by the CCOS Technical

Committee recommending, with ample justification, the profiles to be used in this study for receptor-based methods and any ARB profiles that should be updated with more recent and appropriate information. Based on CCOS Technical Committee feedback, finalize plans for the profiles to be used for the remainder of this study (ARB may consider updating its emissions speciation profile database at a future time, based on the quality of information presented in the technical memorandum and Technical Committee feedback).

Task 4. Review and assess alternative evaluation approaches for the comparison of ambient and emissions data. Investigate the use of observational data analysis techniques or receptor-based techniques and the availability of suitable data. Conduct a literature review of pertinent studies, including analyses of PAMS data and emissions reconciliation efforts. Assess the relevant atmospheric processes, meteorological effects, and time periods for which each site would provide suitable data for use by each proposed observational data analysis technique. Also, investigate whether micro-scale emissions inventory projects conducted under the California Regional PM10/PM2.5 Air Quality Study (CRPAQS) might provide useful emissions source information. Based on the above analyses and the availability of acceptable data, develop a list of technical questions that can be addressed using the identified analytical approaches and available data. Organize a one-day workshop at ARB offices in Sacramento to further discuss alternative analytical methods, available data, and the likelihood of deriving sound assessments of modeled emissions estimates. The Contractor will be responsible for those costs associated with helping to organize the workshop and with the Contractor's preparation for and attendance at the workshop. Based on the findings of the workshop, prepare a draft technical memorandum describing analyses to be conducted in the remainder of the study. Identify specific analyses that will be carried out to support ongoing SIP modeling activities and that will be completed and documented by 31 January 2006. Specify remaining analyses that will be completed and documented in a draft final report within 10 months of initiating the study. Document the versions of the emissions inventories that are available and recommended for use. In particular, specify the version numbers of 'foundation' inputs to the gridded inventory: CEIDARS (California's official inventory database), CEFS (control/rule forecasting system), OFFROAD (source of off-road mobile emissions), and EMFAC (source of official on-road mobile source emissions). Also note whether supplemental day-specific emissions were collected during an analysis period and whether these data were used in the gridded inventories. Pertinent software as well as key input and output files are to be provided in Task 11 at the end of the study. Provide complete specifications for the delivery of software and data files. Based on comments provided by the Technical Committee, implement modifications to the draft technical memorandum and submit a final technical memorandum. Prior to commencing with further efforts under Tasks 5 through 11, all proposed methodologies are to be approved by the ARB Program Manager in consultation with the Technical Committee.

***Note to respondents: The technical efforts associated with Tasks 5 through 11 below are illustrative of the types of analyses currently envisioned by the***

**Technical Committee. These tasks may be modified, deleted, or replaced with new ones based on the findings of Task 4. For the purpose of technical and cost proposal evaluation, respondents are to bid on Tasks 5 through 11 as described below.**

Task 5. Perform VOC source apportionment by applying the selected analysis method to each valid CCOS VOC sample and selected CRPAQS samples using appropriate source composition profiles or speciation data. Identify the potential importance of multiday carryover of emissions on the available ambient air samples. Conduct analyses for morning sampling periods following cleanout or rain days and compare with results for mornings during episodes, to differentiate situations where the ambient air is truly reflective of fresh emissions from other situations where the buildup represents the effects of daily carryover. Evaluate results taking into account local meteorology associated with the sampling period, both to identify source region and radius of influence of source region. Evaluate the extent to which emissions at night (e.g., 10 pm to 6 am) may be contributing to the early morning levels (e.g., 4 to 6 am). Develop relationships between source contribution estimates and the extent of reaction of the ambient air sample. Conduct analyses of results and ambient measurements for reactive species in order to assess the photochemical age of the ambient hydrocarbons.

Task 6. Integrate and synthesize the results from CCOS data analysis and modeling support study I-8 (Advanced Data Analysis) and other pertinent studies that reconcile the emissions inventory with ambient or other data.

Task 7. Compare and reconcile the spatial and temporal patterns in predicted VOC/NO<sub>x</sub> and CO/NO<sub>x</sub> ratios as represented by the gridded emissions inventory with corresponding ratios from PAMS and CCOS supplemental monitoring sites. Identify other indicators and perform appropriate analyses. Make similar comparisons using available CCOS photochemical modeling results. Document significant discrepancies between modeled and measured values and provide possible explanations for the differences. To provide a robust analysis, this project should examine as many days of speciated data as are available for the CCOS field program. ARB has developed gridded emissions files for each day of the July-August ozone modeling episode. The preparation of daily gridded emissions files uses the base emissions inventory with monthly activity profiles, with temperature adjustment for the specific day. Existing gridded emissions estimates for the September 2000 modeling episode need to be updated. More extensive effort would be needed to prepare gridded emissions files for other days during the summer of 2000. Respondents to this RFP should indicate their ability to perform or subcontract processing of the emissions inventory to a model ready gridded file for days not provided by ARB, if required, and identify the associated additional cost for this service.

Task 8. Using suitable analysis approaches in conjunction with the source composition profiles from Task 3, compare and reconcile the spatial and temporal patterns in the predicted levels of VOC species with the corresponding ambient data. Identify possible biases in existing spatial and temporal patterns of modeled emissions estimates.

Task 9. Assess the importance of the disparity of spatial scales between point ambient measurements and the spatial averaging of emissions used in air quality model inputs. Determine whether such disparities contribute significantly to any discrepancies noted in comparisons of ambient measurements and emissions estimates. Identify possible shortcomings in receptor modeling approaches and in the representation of air quality model emissions inputs and recommend possible improvements.

Task 10. Draw appropriate conclusions regarding potential biases and uncertainties that may exist in the CCOS emissions inventory or the gridded representation of the inventory based on the previous tasks. Contrast these conclusions with similar analyses conducted by SARMAP modeling of the 1990 field program data (for example, Fujita et al., 1995) and significant changes that have occurred during the decade of the 1990s in the methodologies used to estimate, speciate, grid and spatially distribute emissions.

Task 11. Prepare interim and final reports. Prepare an interim report documenting the initial, tentative findings of the study. This report will summarize the findings tentatively established as interim products, to provide information to assist the CCOS Technical Committee by identifying the level of correlation that should be expected between emissions estimates and ambient concentrations based upon current methods, the extent to which ambient measurements can be used to identify and evaluate divergences from emissions estimates, and which, if any, emissions estimates the evaluation of ambient measurements suggest may be subject to significant biases.

The interim report is to be submitted by 31 January 2006. Upon completion of the technical analyses, prepare a draft final report documenting the technical approach, findings, and conclusions of the study. Also prepare a draft manuscript summarizing the results of the study suitable for publication in a peer-reviewed journal. Present and discuss the findings of the study at a one-day CCOS Technical Committee meeting in Sacramento, California. Responding to comments provided by the Technical Committee, prepare and submit a final report. Also prepare a final version of the manuscript and submit to an appropriate journal for review and publication.

### **3. REFERENCES**

Fujita, E.M.; Campbell, D.E.; Snorraddottir, T. Central California Ozone Study (CCOS) Data Validation. Desert Research Institute, Reno, NV, 2005.

Fujita, E.M.; Watson, J.G.; Chow, J.C.; Magliano, K.L. Receptor model and emissions inventory source apportionments of nonmethane organic gases in California's San Joaquin Valley and San Francisco Bay Area. *Atmos. Environ.* **29**(21), 3019-3035, 1995.

Yarwood, G.; et al. *Evaluating VOC receptor models using grid-model simulations*. CRC Report A-34, ENVIRON, Novato, CA, 2005 (available at <http://www.crcao.com>).

#### **4. MANAGEMENT STRUCTURE**

The CCOS is a program involving many sponsors and participants. Three entities are involved in the overall management of the Study. The San Joaquin Valleywide Air Pollution Study Agency, a joint powers agency (JPA) formed by the nine counties in the Valley, directs the fund-raising and contracting aspects of the Study. A Policy Committee comprised of four voting blocks (State, local, and federal government, and the private sector) provides guidance on the Study objectives and funding levels. The Policy Committee approves all proposal requests, contracts, and reports. A Technical Committee parallels the Policy Committee in membership and provides overall technical guidance on proposal requests, direction and progress of work, contract work statements, and reviews all technical reports produced from the Study.

On a day-to-day basis, the ARB is responsible for management of the Study under the direction of the Program Manager, Chief of the ARB Modeling and Meteorology Branch. The ARB monitors contracts with the participants and is the primary interface between contractors, the Policy and Technical Committees, and the JPA. Members of the Technical Committee are active participants in modeling analyses and in the review of proposals, reports, and publications.

#### **5. BUDGET**

A budget maximum of \$155,000 has been established for the combined set of tasks contained in the scope of work presented in this RFP. In evaluating proposals, primary consideration will be given to the technical merits of the proposal and products that will be produced by completion of the identified analyses based on the available funding.

#### **6. SCHEDULE**

The work is to be carried out in two phases. Phase 1 is to provide information that is useful to those involved in SIP modeling activities in time for use in the preparation of the 2006 SIP updates for central and northern California. Effective use of the results of Phase 1 for SIP modeling activities requires expedited delivery of preliminary results. Work on Phase 1 will be documented in an interim report to be completed by 31 January 2006. In evaluating proposals, favorable consideration will be given to respondents that offer to provide a quality product and documentation for Phase 1 on an expedited schedule (i.e., delivery prior to 31 January 2006). All remaining analyses will be implemented in Phase 2, which is to be completed (including

the submittal of the final report and the manuscript for publication) within one year of initiating the study.

The Contractor will participate in three one-day meetings with the CCOS Technical Committee in Sacramento, CA. A project kickoff meeting will be held as part of Task 1. The second meeting will be a workshop organized by the Contractor to discuss proposed analysis plans developed in Task 4. The third meeting (as part of Task 11) will be to discuss the overall findings of the study and the draft final report and manuscript. Shown below is an approximate time line for the various stages of this contract. Potential contractors can assume that comments on draft documents will be received within 30-days following submittal unless otherwise indicated below.

- Release of the RFP June 28, 2005
- Submission of bids July 19, 2005
- Contract Initiation Mid August 2005
- Project kickoff meeting Within 3 weeks of initiating the study
- Submit draft work plan 2 weeks after the project kickoff meeting
- Submit final work plan 2 weeks after receipt of comments on draft work plan
  
- Submit draft technical memorandum (Task 2) 2 months after contract initiation
- Submit final technical memorandum (Task 2) 2 weeks after receipt of comments on draft technical memorandum
  
- Submit draft technical memorandum (Task 3) 2 months after contract initiation
- Submit final technical memorandum (Task 3) 2 weeks after receipt of comments on draft technical memorandum
  
- Task 4 workshop 3 months after contract initiation
- Submit draft technical memorandum (Task 4) 2 weeks after the Task 4 workshop
  
- Submit final technical memorandum (Task 4) 2 weeks after receipt of comments on draft technical memorandum
  
- Submit draft interim report 31 January 2006

- Tasks 5 through 11, as modified by Task 4 results      Program Manager authorizes start, monthly status reports, complete within 10 months following contract initiation
- Submit draft final report, manuscript, software, data files, and documentation      10 months after contract initiation
- Receive comments for revision from Technical Committee      11 months after contract initiation
- Submit final report and manuscript      no later than 12 months after contract initiation

In evaluating proposals, consideration will be given to the proposed schedule, with preference to ambitious expedited completion.

## **7. ADMINISTRATION**

The group selected to conduct this work will report to the ARB Program Manager. The period of performance of this contract will be 12 months, with work expected to commence in approximately mid August of 2005. Contract performance is not to begin until a contract is fully approved by the San Joaquin Valleywide Air Pollution Study Agency.

## **8. CONTRACT REQUIREMENTS**

### **A. Reporting and Other Requirements**

The Contractor shall deliver a draft work plan describing the proposed technical activities, based on the submitted proposal and findings of the project kickoff meeting to be conducted in Task 1, and respond to recommended revisions. Technical memoranda will be provided documenting work carried out in Tasks 2, 3 and 4.

The Contractor will attend three one-day meetings with the Technical Committee as part of Tasks 1, 4 and 11 (assume meetings in Sacramento, California).

The Contractor shall deliver monthly progress reports to the ARB Program Manager. Payment of invoices will not be made until receipt of the associated progress report.

The Contractor shall deliver invoices to the ARB Program Manager. With respect to the payment period completed, the invoices shall set forth in detail by task, in accordance with the contract budget, charges for time expended on the project, including classification of personnel involved in such time expenditure, and the monthly, weekly, or hourly rates for such personnel, as appropriate. The invoices shall also

contain an itemization of all materials used for the project, including the purpose of its use and its cost. All work billed for in each invoice must be covered in an associated progress report. Therefore, if invoicing is done more frequently than quarterly, progress reports coincident with the payment period must also be provided.

The Contractor shall deliver a draft work plan and draft technical memoranda for Tasks 2, 3, and 4, a draft interim report, a draft final report, and a draft manuscript for publication, each with two hardcopies, one electronic copy in Adobe Acrobat (PDF) format, and one in Microsoft Word (DOC) format. The Contractor will receive comments on these reports within 30 days of submission, with revisions due within 30 days after receipt of review comments unless otherwise indicated in Section 6 (also with 2 hardcopies, PDF, and DOC versions). The Contractor will be responsible for paying all costs associated with publication of the manuscript.

All software, input and output files, and pertinent documentation will be provided in accordance with the specifications developed in Task 4.

## **B. Correspondence**

All technical correspondence regarding this contract should be sent to the Program Manager at the address listed below:

Mr. John DaMassa, Chief

Modeling & Meteorology Branch, Planning and Technical Support Division  
California Air Resources Board  
Program Manager  
Central California Air Quality Studies  
1001 "I" Street  
Sacramento, California 95814

## **C. Contract Language**

A copy of the contract language is presented in Appendix A. Any proposed revisions to the contract language **must** be included as part of the proposal. Questions regarding the contract should be directed to the JPA attorney at the address provided below:

Mr. Philip Jay  
San Joaquin Valleywide Air Pollution Study Agency Counsel  
San Joaquin Valley Unified Air Pollution Control District  
1990 East Gettysburg Avenue  
Fresno, California 93727  
(559) 230-6033

## 9. PROPOSAL PREPARATION AND EVALUATION GUIDELINES

### A. Submittal Requirements

An original **and two (2) hardcopies** of your proposal and an electronic PDF file of the proposal shall be sent with a cover letter to the ARB Program Manager, Mr. John DaMassa, at the address listed in Contract Requirements Section 8.B. Hand carried or express mail packages may be delivered to Mr. John DaMassa at the California Air Resources Board, 1001 “I” Street, Sacramento, California 95814.

### B. Proposal Contents

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 technically qualified decision-makers. Vague references to “standardized”, “EPA”, “ARB”, or other unexplained and non-documented methods will be considered unresponsive and rejected.

The proposal should be clear and concise (typically not more than 30 pages maximum for each question or task, and preferably exclusive of resumes and proponent facilities/experience, which should also be minimal and can be incorporated by reference to a corporate web site). The proposal should address the following issues:

1. *The technical approach for answering each question/task.* The technical approach should build upon, verify or challenge, and add to existing knowledge. The technical approach should include re-formulation or better articulation of the tasks, a brief summary of current knowledge on the topic from central California and elsewhere (where relevant), available methods to answer the questions and a rationale for selecting the proposed method(s), a description of the analysis approach and the data to be used, methods to verify the generality of the results, methods to qualify the conclusions, and a brief outline for the final report and publication.
2. *Staffing, management oversight, and data management.* Extensive management oversight is not solicited or encouraged, as it is expected that each task will require substantial commitment and participation of an experienced specialist in the area with appropriate delegation to support personnel.
3. *A brief statement of qualifications for the proposed participants and a description of the duties they will perform, including a specific discussion of relatively recent project experience.* Greater detail may be incorporated by reference to a corporate website (preferred) or as a standard package. Extensive corporate experience is not as important as the qualifications of the principals who will be dedicated to the proposed task.

4. *The estimated budget for each task should be summarized on the cost reporting form shown in Table 1. This cost summary form should be supplemented with appended documentation detailing:*
  - a. Commitments and hourly rates for personnel.
  - b. Types and costs for travel, equipment, or supplies procured as part of the project.
  - c. One-time costs that apply to all tasks, but that are only listed in one (identify the costs and the tasks in which they are included or excluded).
  - d. Expected cost increases such as annual salary adjustments should also be specified. It is anticipated that this contract will be awarded on a time and materials basis with a maximum (not to exceed) value.
5. *The management approach for dealing with routine operations, unexpected problems, and changes in work scope.*
6. *A project schedule, describing the start and end dates for each task, and the completion date for each deliverable specified in the scope of work.*

### **C. Guidelines and Criteria for Proposal Evaluation**

Respondents should demonstrate knowledge and experience in the development of emissions estimates for photochemical modeling and in the application of analytical techniques for comparing ambient air quality measurements with modeled emissions representations. The following specific criteria will be used to evaluate the proposals:

1. Technical approach for implementing the tasks specified under the Scope of Work. (30 points)
2. The experience, competence, capability, and commitment of the proposed personnel to be assigned to the project. (30 points)
3. The proponent's technical performance on similar, past projects and the extent to which the participant can draw directly on past experience in meeting the requirements of the RFP. (25 points)
4. The overall proposed cost of the work as well as cost-effectiveness, and the proponent's willingness to enter into a contractual agreement that minimizes the risk of cost overrun. (15 points)

### **D. Conflict of Interest Requirements**

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 CCOS, this means that based on participation in the planning of the Study, certain consultants are precluded from participating in all or some of the post-planning contracts. This preclusion would apply to these consultants as either a prime contractor or a subcontractor. In most cases, whether a particular consultant is eligible to bid will depend on an analysis of all of the circumstances surrounding the consultant's earlier participation in CCAQS and the work that the consultant 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 format review of the proposals.

Questions concerning the eligibility of a potential bidder must be directed to the JPA attorney at the address provided below prior to the preparation of a proposal:

Mr. Philip Jay  
San Joaquin Valleywide Air Pollution Study Agency Counsel  
San Joaquin Valley Unified Air Pollution Control District  
1990 East Gettysburg Avenue  
Fresno, California 93727  
(559) 230-6033

**TABLE 1  
PROPOSAL BUDGET SUMMARY**

**DIRECT COSTS:**

- 1. Labor & Employee Fringe Benefits (provide detailed breakdown by task and employee on separate sheet [including subcontractors]) \$ \_\_\_\_\_
- 2. Equipment (provide detailed breakdown on separate sheet) \$ \_\_\_\_\_
- 3. Travel & Subsistence \$ \_\_\_\_\_
- 4. Electronic Data Processing \$ \_\_\_\_\_
- 5. Photocopying/Printing/Mail/Telephone/FAX \$ \_\_\_\_\_
- 6. Materials and Supplies \$ \_\_\_\_\_
- 7. Miscellaneous (please specify) \$ \_\_\_\_\_
  
- TOTAL DIRECT COST:** \$ \_\_\_\_\_

**INDIRECT COSTS:**

- 8. Overhead (specify rate) \$ \_\_\_\_\_
- 9. General & Administrative Expenses (specify rate) \$ \_\_\_\_\_
- 10. Other Indirect Costs (please specify) \$ \_\_\_\_\_
- 11. Fee or Profit (specify rate) \$ \_\_\_\_\_
  
- TOTAL INDIRECT COST:** \$ \_\_\_\_\_

**TOTAL DIRECT AND INDIRECT COST:** \$ \_\_\_\_\_

**APPENDIX A**

**CONTRACT LANGUAGE**

CONTRACT NO. 05-x CCOS

SAN JOAQUIN VALLEYWIDE AIR POLLUTION STUDY AGENCY

AND

CONTRACTOR

This Agreement, which shall be effective upon the DATE, by and between the SAN JOAQUIN VALLEYWIDE AIR POLLUTION STUDY AGENCY (hereafter "STUDY AGENCY"), a joint powers agency, and CONTRACTOR (hereafter "CONTRACTOR").

WITNESSETH:

WHEREAS, STUDY AGENCY has the need to TASK;

WHEREAS, STUDY AGENCY released its Request for Proposal entitled "RFP TITLE" dated DATE ("the RFP"), which is incorporated herein, to those persons determined by STUDY AGENCY to be capable of TASK

WHEREAS, CONTRACTOR responded to said RFP by sending STUDY AGENCY its Proposal, dated DATE, ("the Proposal"), which is incorporated herein;

WHEREAS, STUDY AGENCY has requested CONTRACTOR to perform such services pursuant to the terms and conditions of its RFP; and

WHEREAS, CONTRACTOR represents that it is willing and able to perform the foregoing services requested by STUDY AGENCY pursuant to the terms and conditions thereof.

NOW, THEREFORE, the parties hereby agree as follows:

1. EMPLOYMENT OF CONTRACTOR

1.1 STUDY AGENCY shall employ CONTRACTOR as an independent contractor to provide, to the reasonable satisfaction of the STUDY AGENCY, those expert consulting services requested to be performed pursuant to Exhibit A of this Agreement, "Scope of

Work," which is attached hereto and incorporated herein, the RFP, and the Proposal. In the event of any conflict between or among the terms and conditions of this Agreement, the exhibits incorporated herein, and the documents referred to and incorporated herein be resolved by giving precedence in the following order of priority:

1.1.1 To the text of this Agreement, Exhibit A, "Scope of Work," to this Agreement, Exhibit B, "Schedule of Deliverables"; and

1.1.2 To the RFP.

1.2 In addition to those obligations stated in paragraph 1.1 of this Agreement, CONTRACTOR shall provide STUDY AGENCY with one (1) reproducible master copy of each written work product completed pursuant to this Agreement, one (1) bound copy of each written work product, one (1) electronic copy in Adobe Acrobat, and one (1) electronic copy in Microsoft Word.

1.3 All work product that CONTRACTOR shall deliver to STUDY AGENCY hereunder shall be performed according to the work schedule and deadlines for performance identified in Exhibit B, "Schedule of Deliverables," to this Agreement, which is attached hereto and incorporated herein.

1.4 CONTRACTOR shall provide its services through the following key persons: KEY PERSONS.

1.5 It is the express intent of the parties to preserve the respective teams of the aforementioned key persons through the entire term of this Agreement. In case of death, illness, or other incapacity of any of the foregoing key persons, CONTRACTOR shall use its best efforts to promptly provide a replacement key person of at least equal professional ability and experience as the key person replaced, without additional cost to STUDY AGENCY. CONTRACTOR may add to or replace persons on its support staff without STUDY AGENCY's approval, provided, however, that replacement support staff personnel shall be of at least equal ability as the person(s) replaced. Notwithstanding anything else stated to the contrary in this

Agreement, it is understood that CONTRACTOR may not replace any of the aforementioned key persons without the prior, express written approval of the STUDY AGENCY.

1.6 Subject to any express limitations established by STUDY AGENCY as to the degree of care and amount of time and expense to be incurred and any other limitations expressly contained in this Agreement, CONTRACTOR shall perform the services under this Agreement with that level of due care and skill ordinarily exercised by other qualified professional consultants in the field of CONTRACTOR's expertise under similar circumstances at the time the services are being performed.

1.7 CONTRACTOR may retain such subcontractors and/or subconsultants as CONTRACTOR deems necessary to assist CONTRACTOR in completing the work under this Agreement. Such subcontractors and subconsultants, if any, shall be expressly approved in writing by STUDY AGENCY before they are retained to perform work under this Agreement. CONTRACTOR's use of any such subcontractors or subconsultants shall not, in any way whatsoever, relieve CONTRACTOR of its obligations under subparagraph 1.1 of this Agreement. It is understood that CONTRACTOR shall be STUDY AGENCY's sole point of contact in the performance of the services covered by this Agreement.

1.8 CONTRACTOR's obligation under this Agreement shall be deemed discharged only after all tasks identified in paragraph 1.1 have been completed and approved by the STUDY AGENCY "Technical Committee."

## 2. NO THIRD-PARTY BENEFICIARIES

2.1 It is understood that CONTRACTOR's services under this Agreement are being rendered only for the benefit of STUDY AGENCY, and no other person, firm, corporation, or entity shall be deemed an intended third-party beneficiary of this Agreement.

## 3. TERM

3.1 This Agreement shall become effective upon execution by the parties and shall continue until terminated as provided herein. In no event shall the term of this Agreement extend past DATE, without the express, written consent of the parties hereto.

4. TERMINATION

4.1 STUDY AGENCY shall have the right to terminate this Agreement at its discretion, and without cause, at any time upon the giving to CONTRACTOR thirty (30) days' advance, written notice of an intention to terminate. If STUDY AGENCY terminates this Agreement in such event, CONTRACTOR shall be compensated for services satisfactorily provided to STUDY AGENCY up to the date of termination, as reasonably determined by STUDY AGENCY, together with such additional services performed after termination which are expressly authorized in writing by STUDY AGENCY to wind up such work.

4.2 The parties hereto may mutually agree to terminate this Agreement at any time, and in such case, upon any terms as are mutually agreeable, provided that such agreement is made pursuant to a written amendment to this Agreement.

4.3 CONTRACTOR shall have the right to terminate this Agreement immediately if:

4.3.1 STUDY AGENCY defaults in the payment of any sum due to be paid to CONTRACTOR; and

4.3.2 Such default for failure to pay or failure to perform any other obligation hereunder continues thirty (30) days after written notice thereof has been provided by CONTRACTOR to STUDY AGENCY.

4.4 Breach of Agreement: STUDY AGENCY may immediately suspend or terminate this Agreement, in whole or in part, where in the determination of STUDY AGENCY there is:

4.4.1 An illegal or improper use of funds;

4.4.2 A failure to comply with any term of this Agreement;

4.4.3 A substantially incorrect or incomplete report submitted to STUDY AGENCY;

4.4.4 Improperly performed services; or

4.4.5 Any other breach of the Agreement.

In no event shall any payment by STUDY AGENCY constitute a waiver by STUDY AGENCY of any breach of this Agreement or any default which may then exist on the part of CONTRACTOR. Neither shall such payment impair or prejudice any remedy available to STUDY AGENCY with respect to the breach or default. STUDY AGENCY shall have the right to demand of CONTRACTOR the repayment to STUDY AGENCY of any funds disbursed to CONTRACTOR under this Agreement which in the judgment of STUDY AGENCY were not expended in accordance with the terms of this Agreement. CONTRACTOR shall promptly refund any such funds upon demand.

In addition to immediate suspension or termination, STUDY AGENCY may impose any other remedies available at law, in equity, or otherwise specified in this Agreement.

In the event of any breach of this Agreement, STUDY AGENCY, upon the recommendation of the Policy Committee, may, without prejudice to any of its other legal remedies, terminate this Agreement upon five (5) days' written notice to CONTRACTOR. In such event, STUDY AGENCY shall pay CONTRACTOR only the reasonable value of the services theretofore rendered by CONTRACTOR as may be agreed upon by the parties or determined by a court of law, but not in excess of the total Agreement price.

## 5. DATA

5.1 No reports, professional papers, information, inventions, improvements, discoveries or data obtained, prepared, assembled, or developed by CONTRACTOR pursuant to this Agreement shall be released or made available (except as otherwise provided herein) without prior written approval of the Chief of the Modeling and Meteorology Branch, Planning & Technical Support Division, Air Resources Board. The consent of the Chief of the Modeling and Meteorology Branch, Planning & Technical Support Division, Air Resources Board, shall not be unreasonably withheld.

5.2 All models used must be in the public domain. All model codes, inputs, and outputs, and data obtained, prepared, assembled or developed shall be provided to the Program Manager in a magnetic media acceptable to the Program Manager

6. REPORTS

6.1 CONTRACTOR shall place the following language in a conspicuous place on all monthly progress reports and on the final report:

"The statements and conclusions in this report are those of the Contractor and not necessarily those of the California Air Resources Board, the San Joaquin Valleywide Air Pollution Study Agency, or its Policy Committee, their employees or their members. The mention of commercial products, their source, or their use in connection with material reported herein is not to be construed as actual or implied endorsement of such products."

7. COMPENSATION/INVOICING

7.1 STUDY AGENCY agrees to pay CONTRACTOR and CONTRACTOR agrees to receive compensation at the rate specified in paragraph 7.6 of this Agreement.

7.2 The amount to be paid to CONTRACTOR under this Agreement includes all sales and use taxes incurred pursuant to this Agreement, if any, including any such taxes due on equipment purchased by CONTRACTOR. CONTRACTOR shall not receive additional compensation for reimbursement of such taxes and shall not decrease work to compensate therefore.

7.3 Advance payments shall not be permitted. Payments will be permitted only at which time-equivalent services have been satisfactorily rendered. Progress payments shall be subject to review by the ARB Program Manager and the STUDY AGENCY Technical Committee. Progress payments shall be made monthly upon receipt of an invoice, a monthly progress report, and a claim for payment form, which is attached as Exhibit C and incorporated herein by reference. Invoices will be sent to Chief, Modeling and Meteorology Branch, Planning & Technical Support Division, Air Resources Board, P.O. Box 2815, Sacramento, CA 95812. With respect to the payment period completed, the invoice shall set forth in detail, in accordance with the Agreement budget, charges for time expended on the project,

including the classification of personnel involved in such time expenditure, and the monthly, weekly, or hourly rates for such personnel, as appropriate. The invoice shall also contain an itemization of all materials used for the project, including the purpose of their use and their cost. Payment shall be made within thirty (30) days of receipt of the invoice.

7.4 Concurrently with the invoice, CONTRACTOR shall certify (i.e., through copies of issued invoices, checks, or receipts) that complete payment has been made to any and all subcontractors and subconsultants as provided.

7.5 It is understood that all expenses incidental to CONTRACTOR's performance of services under this Agreement shall be borne exclusively by CONTRACTOR.

7.6 In no event shall compensation paid by STUDY AGENCY to CONTRACTOR for the performance of all services under this Agreement exceed COST.

7.7 STUDY AGENCY shall be solely responsible for payment and not any of the parties to the Joint Powers Agreement forming the STUDY AGENCY.

7.8 STUDY AGENCY shall withhold payment equal to ten percent (10%) of each monthly invoice until completion of work requested by the STUDY AGENCY Technical Committee on the tasks specified in Exhibit A and approval by the ARB Program Manager and the STUDY AGENCY Technical Committee. It is CONTRACTOR's responsibility to submit an invoice in triplicate for the ten percent (10%) withheld.

7.9 The terms of this Agreement and the services to be provided thereunder are contingent on the approval of funds by the appropriating government agency. Should sufficient funds not be allocated, the services provided may be modified or this Agreement terminated at any time by giving CONTRACTOR thirty (30) days' prior written notice.

## 8. EXTRA SERVICES

8.1 CONTRACTOR shall not undertake any extra services not enumerated herein unless expressly authorized by STUDY AGENCY through an amendment to this Agreement, which shall be executed in the same manner as this Agreement, or by express,

written authorization if such extra services are being performed by CONTRACTOR to wind up its services under this Agreement pursuant to subparagraph 4.1 of this Agreement.

8.2 When such extra services are being performed, CONTRACTOR shall keep complete records showing that STUDY AGENCY requested such extra services, the hours and description of activities worked by each person who worked on the project, the reason for such extra services, and all the costs and charges applicable to the extra services authorized.

## 9. INDEPENDENT CONTRACTOR

9.1 In performance of the work, duties, and obligations assumed by CONTRACTOR under this Agreement, it is mutually understood and agreed that CONTRACTOR, including any and all of CONTRACTOR's officers, agents, and employees, will at all times be acting and performing as an independent contractor, and shall act in an independent capacity and not as an officer, agent, servant, employee, joint venturer, partner, or associate of the STUDY AGENCY or the Policy Committee.

9.2 Furthermore, STUDY AGENCY shall have no right to control, supervise, or direct the manner or method by which CONTRACTOR shall perform its work and function. However, STUDY AGENCY shall retain the right to administer this Agreement so as to verify that CONTRACTOR is performing its obligations in accordance with the terms and conditions thereof. CONTRACTOR and STUDY AGENCY shall comply with all applicable provisions of law and the rules and regulations, if any, of governmental authorities having jurisdiction over matters the subject thereof.

9.3 Because of its status as an independent contractor, CONTRACTOR shall have absolutely no right to employment rights and benefits available to STUDY AGENCY employees. CONTRACTOR shall be solely liable and responsible for providing all legally required employee benefits. In addition, CONTRACTOR shall be solely responsible and save STUDY AGENCY harmless from all matters relating to payment of CONTRACTOR's employees, including compliance with Social Security, withholding, and all other regulations governing such matters. It is acknowledged that during the term of this Agreement,

CONTRACTOR may be providing services to others unrelated to STUDY AGENCY or to this Agreement.

10. MODIFICATION

10.1 Any matters of this Agreement may be modified from time to time by the written consent of all the parties without, in any way, affecting the remainder.

11. NON-ASSIGNMENT

11.1 Neither party shall assign, transfer, or subcontract this Agreement nor their rights or duties under this Agreement without the prior, express written consent of the other party.

12. INDEMNIFICATION

12.1 CONTRACTOR agrees to indemnify, save, hold harmless, and at STUDY AGENCY's request, defend STUDY AGENCY, its boards, committees, representatives, officers, agents, and employees from and against any and all costs and expenses (including reasonable attorneys fees and litigation costs), damages, liabilities, claims, and losses (whether in contract, tort, or strict liability, including, but not limited to, personal injury, death, and property damage) occurring or resulting to STUDY AGENCY which arises from any negligent or wrongful acts or omissions of CONTRACTOR, its officers, agents, subcontractors, subconsultants, or employees in their performance of this Agreement, and from any and all costs and expenses (including reasonable attorneys fees and litigation costs), damages, liabilities, claims, and losses (whether in contract, tort, or strict liability, including, but not limited to, personal injury, death, and property damage) occurring or resulting to any person, firm, corporation, or entity who may be injured or damaged when such injury or damage arises from any negligent or wrongful acts, or omissions of CONTRACTOR, its officers, agents, subcontractors, subconsultants, or employees in their performance of this Agreement.

13. INSURANCE

13.1 Without limiting STUDY AGENCY's right to obtain indemnification from CONTRACTOR or any third parties, CONTRACTOR, at its sole expense, shall maintain in full force and effect the following insurance policies throughout the term of this Agreement:

13.1.1 Comprehensive general liability insurance with minimum limits of coverage in the amount of \_\_\_\_\_ Million Dollars (\$) per occurrence;

13.1.2 Commercial automobile liability insurance for owned and non-owned vehicles which covers bodily injury and property damage with a combined single limit with minimum limits of coverage in the amount of \_\_\_\_\_ Million Dollars (\$) per occurrence;

13.1.3 Workers Compensation Insurance, in accordance with California law.

13.2 Such insurance policies shall name STUDY AGENCY, its officers, agents, and employees, individually and collectively, as additional insured but only insofar as the operations under this Agreement are concerned. Such coverage for additional insured shall apply as primary insurance, and any other insurance, or self-insurance, maintained by STUDY AGENCY, its officers, agents, and employees shall be excess only and not contributing with insurance provided under CONTRACTOR's policies herein. This insurance shall not be cancelled or changed without a minimum of thirty (30) days' advance, written notice given to STUDY AGENCY.

13.3 Prior to the commencement of performing its obligations under this Agreement, CONTRACTOR shall provide certificates of insurance on the foregoing policies, as required herein, to STUDY AGENCY stating that such insurance coverages have been obtained and are in full force; that STUDY AGENCY, its officers, agents, and employees will not be responsible for any premiums on the policies; that such insurance names STUDY AGENCY, its officers, agents, and employees, individually and collectively, as additional insured, but only insofar as the operations under this Agreement are concerned; that such coverage for additional insured shall apply as primary insurance, and any other insurance or self-insurance maintained by STUDY AGENCY, its officers, agents, and employees, shall be excess only and not contributing

with insurance provided under CONTRACTOR's policies herein. This insurance shall not be cancelled or changed without a minimum of thirty (30) days' advance, written notice given to the STUDY AGENCY.

13.4 In the event CONTRACTOR fails to keep in effect at all times insurance coverage as herein provided, STUDY AGENCY may, in addition to other remedies it may have, suspend or terminate this Agreement upon the occurrence of such event.

13.5 If the CONTRACTOR is a government entity, then it may self-insure such of those risks identified in paragraphs 13.1.1 through 13.1.3 of this Agreement, provided, however, that:

13.5.1 STUDY AGENCY, its officers, agents, and employees, individually and collectively, shall be named as additional insured (except for Workers Compensation Insurance) on CONTRACTOR's self-insurance plan, but only insofar as the operations under this Agreement are concerned;

13.5.2 Such self-insurance plan shall be reasonably satisfactory to STUDY AGENCY; and

13.5.3 All those provisions identified in subparagraph 13.2 of this Agreement concerning the relationship of CONTRACTOR's primary and STUDY AGENCY's excess insurance to each other, the requirement of CONTRACTOR delivering a certificate of insurance or other suitable evidence to STUDY AGENCY, and the cancellation/change of insurance requirements shall apply to such self-insurance plan.

#### 14. AUDITS AND INSPECTIONS

14.1 CONTRACTOR shall at any time during business hours, and as often as STUDY AGENCY may deem necessary, make available to STUDY AGENCY for examination all of its records and data with respect to the matters covered by this Agreement. CONTRACTOR shall, upon request by STUDY AGENCY, permit STUDY AGENCY to audit and inspect all of such records and data necessary to ensure CONTRACTOR's compliance with the terms of this Agreement.

14.2 CONTRACTOR shall maintain books, records, documents, and other evidence pertaining to the reimbursable time and materials and hold them available for audit and inspection by STUDY AGENCY for a minimum of three (3) years from the date this Agreement is completed or otherwise terminated.

15. BUDGET

15.1 CONTRACTOR shall be authorized to rebudget funds up to a maximum of twenty percent (20%) between major categories in the contract budget as contained in Exhibit A. All rebudgeting in excess of twenty percent (20%) requires the prior written approval of the Chief of the Modeling and Meteorology Branch, Planning and Technical Support Division, Air Resources Board, or his representative. Under no circumstances shall the total contract amount exceed COST.

16. NOTICES

16.1 The persons and their addresses having authority to give and receive notices under this Agreement include the following:

STUDY AGENCY: John DaMassa, Chief  
Modeling and Meteorology Branch  
Planning & Technical Support Division  
Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812

CONTRACTOR: CONTACT PERSON  
ADDRESS

16.2 Any and all notices between STUDY AGENCY and CONTRACTOR provided for or permitted under this Agreement or by law shall be in writing and shall be deemed duly served when personally delivered to one of the parties, or in lieu of such personal services, when deposited in the United States mail, postage prepaid, addressed to such party.

17. DISPUTES

17.1 In the event a dispute between CONTRACTOR and the ARB Program Manager, CONTRACTOR should first discuss the problem informally with the ARB Program Manager. If the dispute is not resolved, the following two-step procedure shall be followed by both parties:

17.1.1 CONTRACTOR and the ARB Program Manager shall each write to the STUDY AGENCY Technical Committee stating the issues in the dispute and the basis for their positions. The STUDY AGENCY Technical Committee shall make a determination within fourteen (14) working days after receipt of the written communications from CONTRACTOR and ARB Program Manager. The STUDY AGENCY Technical Committee shall notify CONTRACTOR and the ARB Program Manager in writing of the decision and the reasons therefor.

17.1.2 If CONTRACTOR or the ARB Program Manager disagrees with the STUDY AGENCY Technical Committee's decision, written notice shall be provided to the other party of an intention to seek non-binding third-party mediation of the dispute. Both parties must agree to submit to mediation. The dispute shall be considered by a panel of three (3) experts in the field of dispute. Each party shall have the right to select one panelist. The selected panel will then select a third member. The panel shall set a hearing date, time, and place convenient to the parties within thirty (30) days of panel selection. Within five (5) working days of the hearing date, each party shall submit a written statement to the panel and the other party setting forth the issues and arguments to be presented. The hearing shall be informal with an opportunity for both parties to present their arguments. The panel shall provide the parties with a written decision within thirty (30) days of the hearing. The decision shall be binding on the parties, unless referred to the Governing Board within thirty (30) days. The costs of the panel shall be borne equally by the parties.

17.1.3 If either party has so requested, the matter shall be heard by the STUDY AGENCY Board, and the Board's determination shall be final.

18. POLITICAL ACTIVITY PROHIBITED

18.1 None of the funds, materials, property, or services provided under this Agreement shall be used for any political activity, or to further the election or defeat of any candidate for public office contrary to federal or state laws, statutes, regulations, rules or guidelines.

19. LOBBYING PROHIBITED

19.1 None of the funds provided under this Agreement shall be used for publicity, lobbying, or propaganda purposes designed to support or defeat legislation before the Congress of the United States of America or the Legislature of the State of California.

20. CONFLICT OF INTEREST

20.1 No officer, employee, or agent of STUDY AGENCY who exercises any function or responsibility for planning and carrying out the services provided under this Agreement shall have any direct or indirect personal financial interest in this Agreement. CONTRACTOR shall comply with all federal and state conflict of interest laws, statutes, and regulations which shall be applicable to all parties and beneficiaries under this Agreement and any officer, agent, or employee of STUDY AGENCY.

21. COMPLIANCE WITH LAWS

21.1 CONTRACTOR shall comply with all federal and state laws, statutes, regulations, rules, and guidelines which apply to its performance under this Agreement.

22. SEVERABILITY

22.1 In the event that any one or more provisions contained in this Agreement shall for any reason be held to be unenforceable in any respect by a court of competent jurisdiction, such holding shall not affect any other provisions of this Agreement, and the Agreement shall then be construed as if such unenforceable provisions are not a part hereof.

23. TIME IS OF THE ESSENCE

23.1 It is understood that for CONTRACTOR's performance under this Agreement, time is of the essence. The parties reasonably anticipate that CONTRACTOR will, to

the reasonable satisfaction of STUDY AGENCY, complete all services to be provided hereunder by DATE, provided that CONTRACTOR neither causes nor is caused unreasonable delay in such performance.

24. GOVERNING LAW

24.1 Venue for any action arising out of or relating to this Agreement shall only be in Fresno County, California.

24.2 The rights and obligations of the parties and all interpretation and performance of this Agreement shall be governed in all respects by the laws of the State of California.

25. BINDING UPON SUCCESSORS

25.1 This Agreement, including all covenants and conditions maintained herein, shall be binding upon and inure to the benefit of the parties, including their respective successors-in-interest, assigns, and legal representatives.

26. INSPECTION AND RELEASE OF DATA

26.1 Upon termination or expiration of this Agreement, all data which is received, collected, produced, or developed by CONTRACTOR under this Agreement shall become the exclusive property of STUDY AGENCY, provided, however, CONTRACTOR shall be allowed to retain a copy of any non-confidential data received, collected, produced, or developed by CONTRACTOR under this Agreement, subject to STUDY AGENCY's exclusive ownership rights stated herein. Accordingly, CONTRACTOR shall surrender to STUDY AGENCY all such data which is in its (including its subcontractors, subconsultants, or agents) possession, without any reservation of right or title not otherwise enumerated herein.

26.2 STUDY AGENCY shall have the right, at reasonable times during the term of this Agreement, to inspect and reproduce any data received, collected, produced, or developed by CONTRACTOR under this Agreement. No reports, professional papers, information, inventions, improvements, discoveries, or data obtained, prepared, assembled, or developed by CONTRACTOR, pursuant to this Agreement, shall be released or made available

(except to STUDY AGENCY) without prior, express written approval of STUDY AGENCY while this Agreement is in force.

27. NONDISCRIMINATION

27.1 The provisions of Exhibit D, the "Nondiscrimination Clause," is attached hereto and incorporated herein.

28. ENTIRE AGREEMENT

28.1 This Agreement, including all attached exhibits and documents which are referred to and incorporated herein, constitutes the entire agreement between CONTRACTOR and STUDY AGENCY with respect to the subject matter hereof and supersedes all previous negotiations, proposals, commitments, writings, advertisements, publications, and understandings of any nature whatsoever unless expressly included in this Agreement.

29. WAIVER

29.1 No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach. All remedies afforded in this Agreement shall be taken and construed as cumulative, that is, in addition to every other remedy provided therein or by law. The failure of STUDY AGENCY to enforce at any time any of the provisions of this Agreement or to require at any time performance by CONTRACTOR of any of the provisions therefor, shall in no way be construed to be a waiver of such provisions nor in any way affect the validity of this Agreement or any part thereof or the right of STUDY AGENCY to thereafter enforce each and every such provision.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first hereinabove written through their respective duly appointed and authorized representatives.

STUDY AGENCY  
SAN JOAQUIN VALLEYWIDE AIR  
POLLUTION STUDY AGENCY

CONTRACTOR

By \_\_\_\_\_

Chair

By \_\_\_\_\_

Print Name and Title

\_\_\_\_\_  
Tax I.D. No.

Recommended for approval:  
SAN JOAQUIN VALLEYWIDE AIR  
POLLUTION STUDY AGENCY  
POLICY COMMITTEE

Approved as to legal form:  
SAN JOAQUIN VALLEY UNIFIED AIR  
POLLUTION CONTROL STUDY  
AGENCY

By \_\_\_\_\_

Title \_\_\_\_\_

By \_\_\_\_\_

Philip M. Jay

Study Agency Counsel

Recommended for approval:  
SAN JOAQUIN VALLEYWIDE AIR  
POLLUTION STUDY AGENCY  
TECHNICAL COMMITTEE

Approved as to accounting form:  
SAN JOAQUIN VALLEY UNIFIED AIR  
POLLUTION CONTROL STUDY  
AGENCY

By \_\_\_\_\_

Title \_\_\_\_\_

By \_\_\_\_\_

Roger W. McCoy

Finance Officer