STATE OF CALIFORNIA
AIR RESOURCES BOARD
RESEARCH DIVISION
P.O. BOX 2815
SACRAMENTO, CA 95812

GUIDELINES FOR: UNIVERSITIES OF CALIFORNIA FOR PREPARING AND SUBMITTING PROPOSALS TO THE AIR RESOURCES BOARD

August 2016

I. GUIDELINES FOR UNIVERSITIES IN PREPARING AND SUBMITTING PROPOSALS TO THE AIR RESOURCES BOARD.

A. The cover letter.

Submit an original cover letter addressed to Bart Croes, Chief, Research Division, Air Resources Board, Sacramento, (P.O. Box 2815, Sacramento, CA 95812-2815). The letter must be signed by the appropriate officer in the University's Contracts and Grants office. The letter must include:

a. The title of the proposal.

b. The name, title, university, address, telephone and fax numbers, and email addresses of those persons authorized to sign the administrative documents and to bind the cost and technical proposals, including:

1) the principal investigator
2) the contract officer

c. A statement, signed by the appropriate person listed above, attesting that the technical and cost proposals are firm for a period of not less than 150 days after the submittal date.

B. The technical proposal.

Submit 15 hard copies and one electronic copy of the technical proposal to the California Air Resources Board, Research Division, Sacramento, (P.O. Box 2815, Sacramento, CA 95812-2815).

1. Technical proposal.

The technical proposal should be clear and concise, no more than approximately 100 pages in length, two-sided, and stapled or bound. To conserve paper, please use single or one-and-a-half spacing. The technical proposal should be paginated as a stand alone document using the "Page xx of xx" format in the top right corner.

The technical proposal must include the following parts:

a. Title page. The purpose of this page is to provide in one location information needed by our administrative staff. It must contain all of the following items (see Example A):

1) the title of the proposal
2) the name of the principal investigator
3) a statement that the proposal was prepared for ARB's Research Division
4) the name and address of the university
5) the date of the proposal

6) check box if proposed research uses human or animal subjects

b. Table of contents.

c. Statement of significance. The proposal must contain a one-page discussion of the relevance of this project to the Air Resources Board. Please include in this discussion, the objectives of this project and how the results will be beneficial to the Air Resources Board.

d. Abstract. A one-page abstract of the proposed research briefly summarizing the main points of the various sections of the proposal.

e. Project objectives. Relate these objectives generally to the tasks specified in the work plan.

f. Technical plan. This shall include at least the following topics:

1) A detailed description of experimental techniques or research methods to be employed, including requirements for test specimens, laboratory animals, or human subjects.
2) A discussion of the tasks to be conducted and how those tasks will be performed.
3) A data management plan that identifies the data to be collected, the sample size required to assure statistical validity of the data, methods of data handling, reduction, and analyses, data format, and approach to addressing quality assurance of the data.
4) A description of testing procedures necessary to demonstrate required performance of equipment to be used in the study, if applicable.
5) A description of existing facilities available for conducting the proposed research, including the physical plant, laboratory, other equipment, and requisite instrumentation.
6) If applicable, a description of proposed human or animal subjects, including criteria for inclusion/exclusion, overview of recruitment plans, and need plans for Institutional Review Board (IRB) approval.
7) References to publications describing similar work done by others.

2. Project schedule (see Example B).

List each task specified in the work plan. Addressing each task, display the projected timespan, with beginning and ending dates, of each individual task over the life of the contract. If tasks are extensive, they may be subdivided. Denote progress review meeting dates and dates of deliverables such as the draft final report.

3. Project management plan.

Identify key personnel (e.g., principal investigator, project manager, subcontractors, researchers) required to conduct the proposed research as follows:

a. Provide an organizational chart of the principal investigator and technical personnel to be involved in the project.

b. Provide a summary statement of assigned responsibilities for each of these personnel.

c. Discuss how the project will be managed and coordinated. For example, use of a Gantt chart (see Example C) or other project tracking method, weekly meetings of the research team, assignment of a specific person to coordinate project tasks with their budgeted amounts.

d. Include curricula vitae or résumés of the key scientific personnel.

4. Related research.

Prepare a brief description of research that has been conducted or is currently underway by the applicant in areas related to the proposal, together with the source and amount of research funds. All related research activities funded by other governmental or private entities are to be included in this listing.

5. Publications lists.

List relevant publications of the principal investigator and all other key scientific personnel.

C. The cost proposal.

Submit 15 hard copies and one electronic copy of the completed, bound Budget Summary Form (Microsoft Word file) and related documents in the same package as the technical proposal. (You are not required to submit the cost proposal in a sealed envelope.) The technical proposal should be paginated as a stand alone document using the “Page xx of xx” format in the top right corner.

1. Budget summary form (see Attachment 1).

The cost proposal must be submitted on the Budget Summary Form (Microsoft Word file). The university should provide as complete information and justification as possible on the form; use additional sheets of paper if necessary. (see Attachment 1).

2. **Budget summary form for subcontractors and consultants.**

   In the event that subcontractors or consultants are to be used, the bidder must submit a completed copy of the Budget Summary Form for each subcontractor or consultant.

3. **Estimated cost breakdown by task (see Example C).**

   For proposal purposes only. Not to be included as part of the contract. A summary of cost broken down by task must be included in the cost proposal packet.

4. **Equipment list.**

   List each item of equipment, state the cost, and specify whether the item will be purchased or leased. (If the equipment cost exceeds $25,000 or 25 percent of the total budget, the State will purchase the equipment through the Office of Procurement, Department of General Services. The equipment cost will be deducted from the total budget amount to be paid to the university). All computers are to be purchased through the State Office of Procurement.

D. Administrative documents

1. In the event that subcontractors or consultants are to be used who are not a University of California campus, a California State University campus, another state's public university, or federal or local government, and are more than 25 percent of the total budget, they should be competitively bid. If they are not competitively bid, the University must provide sufficient justification for the inclusion of that particular subcontractor.

2. Any private subcontract over $10,000 must comply with DVBE participation requirements (a package explaining how to comply with DVBE requirements can be requested from Mrs. Sarah Szepesi at 916-327-1256).

E. Research Screening Committee Review

The Board's legislatively mandated Research Screening Committee (RSC) consists of scientists, engineers, and others knowledgeable, technically qualified, and experienced in air pollution problems. The Committee meets approximately four times a year to review proposed and completed research projects. Full proposals and draft Final Reports for research projects are distributed to the RSC prior to each meeting. Draft Final Reports for completed research projects will be posted on ARB's website no less than ten days prior to the RSC meeting. The RSC website is: http://www.arb.ca.gov/research/rsc/rsc.htm.

EXAMPLE A

SAMPLE TECHNICAL PROPOSAL TITLE PAGE

TECHNICAL PROPOSAL

Concentrations of Volatile Organic Compounds
in Urban Homes

Principal Investigator:
Joanna Phillips

Official Authorized to Bind this Proposal:

Name ____________________________________

Signature ____

Prepared for:

State of California Air Resources Board
Research Division
PO Box 2815
Sacramento CA 95812

Prepared by:

University of California, Davis
One Shields Avenue
Davis, CA 90210
(888) 555-4433

August __, ____

Check if applicable:
Animal subjects _______
Human subjects _______

EXAMPLE B

SAMPLE PROJECT SCHEDULE

PROJECT SCHEDULE

Task 1: Purchase equipment
Task 2: Install equipment
Task 3: xxxxx
Task 4: xxxxx
Task 5: xxxxx
Task 6: Draft final report
Task 7: Amend final report

	MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
TASK																
1																
2																
3																
4																
5																
6																
7																
		m		p		m		p		m				dm		F

p = Quarterly progress report
d = Deliver draft final report (to be submitted 6 months prior to contract expiration)
f = Deliver final report
m = Meeting with ARB staff

EXAMPLE C

ESTIMATED COST BY TASK

For Proposal Submittal
(not to be included in the contract)

Task	Labor	Employee Fringe Benefits	Subs, Consultant s	Equip	Travel Subsist	EDP	Copy Print	Mail Phone Fax	Materials and Supplies	Analyses	Misc.	Overhead	Total
1	$4,200	$1,260	$0	$5,200	$4,240	$0	$15	$5	$25	$0	$0	$840	$15,785
2	$5,000	$3,000	$5,430	$0	$0	$0	$45	$60	$34	$0	$0	$2,000	$15,569
3	$10,000	$1,500	$0	$0	$0	$450	$10	$10	$66	$365	$0	$1,000	$13,401
4	$8,000	$102	$0	$72	$340	$0	$5	$10	$52	$1,024	$0	$68	$9,673
5	$4,500	$1,350	$0	$0	$0	$0	$10	$10	$52	$0	$0	$900	$6,822
6	$340	$2,400	$0	$0	$0	$0	$0	$0	$0	$0	$245	$1,600	$4,585
	$32,040	$9,612	$5,430	$5,272	$4,580	$450	$85	$95	$229	$1,389	$245	$6,408	$65,835

ATTACHMENT 1

EXHIBIT B

BUDGET SUMMARY

Budget Category	**Year 1 FY**	**Year 2 FY**	**TOTAL**
PERSONNEL (*Salary and Fringe Benefits)*			
TRAVEL			
MATERIALS & SUPPLIES			
EQUIPMENT			
CONSULTANT			
SUBRECEPIENT			
OTHER DIRECT COSTS (ODC) Subject to IDC Calc? (Y/N)			
Electronic Data Processing			
TOTAL DIRECT COSTS			

INDIRECT (F&A) COSTS (BASE)			
MTDC Rate	25%	25%	25%
TOTAL F&A COSTS			

TOTAL PROJECT COST			

Fund Reversion Dates

See Exhibit B1 for Justifications.

EXHIBIT B1

BUDGET JUSTIFICATION

The Budget Justification will include the following items in this format.

Personnel

Name	Mo. Salary	Est. Months	% of Effort	Total
				$0
				$0
				$0
				$0
				$0
				$0
				$0
			TOTAL	

Justifications:
Name. Starting with the Principal Investigator list the names of all known personnel who will be involved on the project. Include all collaborating investigators, individuals in training, technical and support staff or include as “to be determined” (TBD).

Role on Project. For all personnel include name, position, function, and a percentage level of effort (as appropriate), including “to-be-determined” positions.

Fringe Benefits.

Name	Base	Fringe Rate	Total
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		TOTAL	

Justifications:
In accordance with University policy, explain the costs included in the budgeted fringe benefit percentages used, which could include tuition/fee remission for qualifying personnel to the extent that such costs are provided for by University policy, to estimate the fringe benefit expenses on Exhibit B.

Travel

Destination/Purpose	# of Trips	# of People	Duration (Days)	Airfare ($/Trip)	Per Diem ($/Day)	Ground Travel	Lodging	TOTAL
					$0			
					$0			
					$0			
					$0			
					$0			
					$0			
					$0			
							TOTAL	

Justifications:
Itemize all travel requests separately by trip and justify in accordance with University travel guidelines. Provide the purpose, destination, travelers (name or position/role), and duration of each trip. Include detail on airfare, per diem, lodging and mileage expenses, if applicable. Should the application include a request for travel outside of the state of California, justify the need for those out-of-state trips separately and completely.

Materials and Supplies

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
Itemize materials and supplies in separate categories. Include a complete justification of the project's need for these items. Theft sensitive equipment (under $5,000) must be justified and tracked separately in accordance with State Contracting Manual Section 7.29.

Equipment

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
List each item of equipment (greater than or equal to $5,000 with a useful life of more than one year) with amount requested separately and justify why each piece of equipment is needed for this project.

Consultant Costs

Consultant Name	Total
A.	$0
B.	$0
C.	$0
D.	$0
E.	$0
F.	$0
G.	$0
TOTAL	

Consultants are individuals/organizations who provide expert advisory or other services for brief or limited periods and do not provide a percentage of effort to the project or program. Consultants are not involved in the scientific or technical direction of the project as a whole.

Justifications:
Provide the names and organizational affiliations of all consultants. Describe the services to be performed, and include the number of days of anticipated consultation, the expected rate of compensation, travel, per diem, and other related costs.

Subawardee (Consortium/Subrecipient) Costs

Subrecepient Name	Total
A.	$0
B.	$0
C.	$0
D.	$0
E.	$0
F.	$0
G.	$0
TOTAL	

Each participating consortium organization must submit a separate detailed budget in the project period in Exhibit B2 Subcontracts.

Justifications:
Include a complete justification for the need for any subawardee listed in the application.

Other Direct Costs

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
Specifically justify costs that may typically be treated as indirect costs. For example, if insurance, telecommunication, or IT costs are charged as a direct expense, explain reason and methodology.

Rent

Justifications:
If the scope of work will be performed in an off-campus facility rented from a third party for a specific project or projects, then rent may be charged as a direct expense to the award.

Indirect (F&A) Costs

Justifications:
Indirect costs are calculated in accordance with the University budgeted indirect cost rate in Exhibit B.

EXHIBIT B2

SUBRECIPIENT BUDGET ESTIMATE

Use same formatting as Exhibit B and B1 for each subreceipient.

or

Exhibit B2 is not applicable for this agreement.

EXHIBIT B3

INVOICE AND DETAILED TRANSACTION LEDGER ELEMENTS

In accordance with Exhibit C – University Terms and Conditions, Section 14 – Payment and Invoicing, the invoice, summary report and/or transaction/payroll ledger shall be certified by the University's Financial Contact and the PI.

Summary Invoice – includes either on the invoice or in a separate summary document – by approved budget category (Exhibit B) – expenditures for the invoice period, approved budget, cumulative expenditures and budget balance available[1]

- Personnel
- Equipment
- Travel
- Subawardee – Consultants
- Subawardee – Subcontract/Subrecipients
- Materials & Supplies
- Other Direct Costs
    - TOTAL DIRECT COSTS (if available from system)
- Indirect Costs
    - TOTAL

Detailed transaction ledger and/or payroll ledger for the invoice period [2]

- Univ Fund OR Agency Award # (to connect to invoice summary)
- Invoice/Report Period (matching invoice summary)
- GL Account/Object Code
- Doc Type (or subledger reference)
- Transaction Reference#
- Transaction Description, Vendor and/or Employee Name
- Transaction Posting Date
- Time Worked

[1] If this information is not on the invoice or summary attachment, it may be included in a detailed transaction ledger.

[2] For salaries and wages, these elements are anticipated to be included in the detailed transaction ledger. If all elements are not contained in the transaction ledger, then a separate payroll ledger may be provided with the required elements.

- Transaction Amount

EXHIBIT D

ADDITIONAL REQUIREMENTS ASSOCIATED WITH FUNDING SOURCES

If the Agreement is subject to any additional requirements imposed on the funding State agency by applicable law (including, but not limited to, bond, proposition and federal funding), then these additional requirements will be set forth in Exhibit D. If the University is a subrecipient, as defined in 2 CFR 200 (Uniform Guidance on Administrative Requirements, Audit Requirements and Cost Principles for Federal Financial Assistance), and the external funding entity is the federal government, the name of the federal agency, the prime award number (if available), and the Catalog of Federal Domestic Assistance (CFDA) program number will be listed in Exhibit D. (Please see sections 10.A and 10.B of the UTC.)

Agency (Required for federal funding source)	**Prime Agreement Number** (if available)	**If Federal, CFDA Number**

OR

Exhibit D is not applicable for this agreement.

EXHIBIT E

SPECIAL CONDITIONS FOR SECURITY OF CONFIDENTIAL INFORMATION

If the of work or project results in additional legal and regulatory requirements regarding security of Confidential Information, those requirements regarding the use and disposition of the information, will be provided by the funding State agency in Exhibit E. (Please see section 8.E of the UTC.)

OR

Exhibit E is not applicable for this agreement.

EXHIBIT F

ACCESS TO STATE FACILITIES OF COMPUTING SYSTEMS AGENCY REQUIREMENTS/AGREEMENT

If the scope of work or project requires that the Universities have access to State agency facilities or computing systems and a separate agreement between the individual accessing the facility or system and the State agency is necessary, then the requirement for the agreement and the agreement itself will be listed in Exhibit F. (Please see section 20 of the UTC.)

OR

Exhibit F is not applicable for this agreement.

EXHIBIT G

NEGOTIATED ALTERNATE UTC TERMS

1. **Advance Payment**

   A. Nothing herein contained shall preclude advance payments pursuant to Title 2, Division 3, Part 1, Chapter 3, Article 1 of the Government Code of the State of California.

   B. Upon termination or completion of this Agreement, Contractor shall refund any excess funds to the ARB. Contractor will reconcile total Agreement costs to total payments received in advance and any remaining advance will be refunded to the ARB's Accounting Office. In the event the Agreement is terminated, total project costs incurred prior to the effective date of termination (including close-out costs) will be reconciled to total project payments received in advance and any remaining advance will be refunded to the ARB. In either event Contractor shall return any balance due to ARB within sixty (60) days, of expiration or earlier termination.

ATTACHMENT 2

EXHIBIT A

PROJECT SUMMARY & SCOPE OF WORK

Project Summary/Abstract

Briefly describe the long-term objectives for achieving the stated goals of the project.

Scope of Work

Describe the goals and specific objectives of the proposed project and summarize the expected outcomes. If applicable, describe the overall strategy, methodology, and analyses to be used. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate. Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the goals and objectives.

Project Tasks

Meetings

A. Initial meeting. Before work on the contract begins, the Principal Investigator and key personnel will meet with the ARB Contract Project Manager and other staff 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 may need to be resolved before work can begin.

B. Progress review meetings. The Principal Investigator and appropriate members of his or her staff will meet with ARB's Contract Project Manager at quarterly intervals to discuss the progress of the project. This meeting may be conducted by phone.

C. Technical Seminar. The Contractor will present the results of the project to ARB staff and a possible webcast at a seminar at ARB facilities in Sacramento or El Monte.

If Third-Party Confidential Information is to be provided by the State:

☐ Performance of the Scope of Work is anticipated to involve use of third-party Confidential Information and is subject to the terms of this Agreement; ***OR***

☐ A separate CNDA between the University and third-party is required by the third-party and is incorporated in this Agreement as Exhibit A7.

EXHIBIT A1

SCHEDULE OF DELIVERABLES

List all items that will be delivered to the State under the proposed Scope of Work. Include all reports, including draft reports for State review, and any other deliverables, if requested by the State and agreed to by the Parties.

Deliverable*	Description	Due Date
Progress Reports & Meetings	Quarterly progress reports and meetings throughout the agreement term, to coincide with work completed in quarterly invoices.	Quarterly
Draft Final Report	Draft version of the Final Report detailing the purpose and scope of the work undertaken, the work performed, and the results obtained and conclusions.	Six (6) months prior to agreement end date.
Data	Data compilations first produced in the performance of this Agreement by the Principal investigator or the University's project personnel.	On or before agreement end date.
Technical Seminar	Presentation of the results of the project to ARB staff and a possible webcast at a seminar at ARB facilities in Sacramento or El Monte.	On or before agreement end date.
The following Deliverables are subject to paragraph 18. Copyrights, Section B of Exhibit C		
Final Report	Written record of the project and its results.	On or before agreement end date.

* *If use of any Deliverable is restricted or is anticipated to contain Preexisting Data or copyrightable works with any restricted use, it will be clearly identified in Exhibit A4, Use of Preexisting Data, Copyrighted Works and Deliverables.*

1. Reports and Data Compilations

A. With respect to each invoice period University shall submit, to the ARB Contract Project Manager, one (1) electronic copy of the progress report. When emailing the progress report, the "subject line" should state the contract number and the billing period. Each progress report will begin with the following disclaimer:

The statements and conclusions in this report are those of the University and not necessarily those of the California Air Resources Board. 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.

B. Each progress report will also include:

1. A brief narrative account of project tasks completed or partially completed since the last progress report;

2. A brief discussion of problems encountered during the reporting period and how they were or are proposed to be resolved;

3. A brief discussion of work planned, by project task, before the next progress report; and

4. A graph or table showing allocation of the budget and amount used to date.

5. A graph or table showing percent of work completion for each task.

C. If the project is behind schedule, the progress report must contain an explanation of reasons and how the University plans to resume the schedule.

D. Six months prior to Agreement expiration date, University will deliver to ARB fifteen (15) bound copies of a draft final report. The reports may be stapled or spiral bound, depending on size. The draft final report will conform to Exhibit A1, Section 2 – Research Final Report Format.

E. Within forty-five (45) days of receipt of ARB's comments on the draft final report, University will deliver to ARB's Contract Project Manager two (2) copies of the final report incorporating all reasonable alterations and additions requested by ARB. Upon approval of the amended final report approved by ARB in accordance to Exhibit A1, Section 2 – Research Final Report Format, University will within two (2) weeks, deliver to ARB two (2) camera ready UNBOUND originals of a final report incorporating all final alterations and additions. The final report will conform to Exhibit A1, Section 2 – Research Final Report Format

F. Together with the final report, University will deliver a copy of the report on CD, using any common word processing software (please specify the software used) and a set of all data compilations as specified in Exhibit A1 – Schedule of Deliverables.

G. University's obligation under this Agreement shall be deemed discharged only upon submittal to ARB of an acceptable final report in accordance to Exhibit A1, Section 2 – Research Final Report Format, report CD, all required data compilations, and any other project deliverables.

2. <u>RESEARCH FINAL REPORT FORMAT</u>

The research contract Final Report (Report) is as important to the contract as the research itself. The Report is a record of the project and its results, and is used in several ways. Therefore, the

Report must be well organized and contain certain specific information. The ARB's Research Screening Committee (RSC) reviews all draft final reports, paying special attention to the Abstract and Executive Summary. If the RSC finds that the Report does not fulfill the requirements stated in this Exhibit, the document will not be approved for release, and final payment for the work completed may be withheld. This Exhibit outlines the requirements that must be met when producing the Report.

Note: In partial fulfillment of the Final Report requirements, the Contractor shall submit a copy of the Report on a CD in PDF format <u>and</u> in a word-processing format, preferably in Word - Version 6.0 or later. This is in addition to the submission of any paper copies required. The CD shall be clearly labeled with the contract title, ARB contract number, the words "Final Report", and the date the report was submitted.

Legibility. Each page of the approved Final Report must be legible and camera-ready.

Binding. The draft Report, including its appendices, must be either spiral bound or stapled, depending on size. The revised Report and its appendices should be spiral bound, except for two unbound, camera-ready originals.

Cover. Do not supply a cover for the Report. The ARB will provide its standard cover.

One-sided vs. two-sided. To conserve paper, the draft Report, the revised Report, and the unbound camera-ready copies should be printed on both sides of the page.

Watermark. Each page of the draft Report must include a watermark stating "DRAFT." The revised report should not include any watermarks.

Title. The title of the Report should exactly duplicate the title of the contract unless a change is approved in writing by the contract manager.

Spacing. In order to conserve paper, copying costs, and postage, please use single or one-line (1) spacing.

Page size. All pages should be of standard size (8 ½" x 11") to allow for photo-reproduction.

Large tables or figures. Foldout or photo-reduced tables or figures are not acceptable because they cannot be readily reproduced. Large tables and figures should be presented on consecutive 8 ½" x 11" pages, each page containing one portion of the larger chart.

Color. Printing shall be black on white. However, color images are acceptable where necessary.

Corporate identification. Do not include corporate identification on any page of the Final Report, except the title page.

Unit notation. Measurements in the Reports should be expressed in metric units. However, for the convenience of engineers and other scientists accustomed to using the British system, values may be given in British units as well in parentheses after the value in metric units. The expression of measurements in both systems is especially encouraged for engineering reports.

Section order. The Report should contain the following sections, in the order listed below:

Title page
Disclaimer
Acknowledgment (1)
Acknowledgment (2)
Table of Contents
List of Figures
List of Tables
Abstract
Executive Summary
Body of Report
References
List of inventions reported and copyrighted materials produced
Glossary of Terms, Abbreviations, and Symbols
Appendices

Page numbering. Beginning with the body of the Report, pages shall be numbered consecutively beginning with “1”, including all appendices and attachments. Pages preceding the body of the Report shall be numbered consecutively, in ascending order, with small Roman numerals.

Title page. The title page should include, at a minimum, the contract number, contract title, name of the principal investigator, contractor organization, date, and this statement: "Prepared for the California Air Resources Board and the California Environmental Protection Agency"

Disclaimer. A page dedicated to this statement must follow the Title Page:

The statements and conclusions in this Report are those of the contractor and not necessarily those of the California Air Resources Board. 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.

Acknowledgment (1). Only this section should contain acknowledgments of key personnel and organizations who were associated with the project. The last paragraph of the acknowledgments must read as follows:

This Report was submitted in fulfillment of [ARB contract number and project title] by [contractor organization] under the [partial] sponsorship of the California Air Resources Board. Work was completed as of [date].

Acknowledgment (2). Health reports should include an acknowledgment to the late Dr. Friedman. Reports should include the following paragraph:

This project is funded under the ARB’s Dr. William F. Friedman Health Research Program. During Dr. Friedman’s tenure on the Board, he played a major role in guiding ARB’s health research program. His commitment to the citizens of California was evident through his personal and professional interest in the Board’s health research, especially in studies related to children’s health. The Board is sincerely grateful for all of Dr. Friedman's personal and professional contributions to the State of California.

Table of Contents. This should list all the sections, chapters, and appendices, together with their page numbers. Check for completeness and correct reference to pages in the Report.

List of Figures. This list is optional if there are fewer than five illustrations.

List of Tables. This list is optional if there are fewer than five tables.

Abstract. The abstract should tell the reader, in nontechnical terms, the purpose and scope of the work undertaken, describe the work performed, and present the results obtained and conclusions. The purpose of the abstract is to provide the reader with useful information and a means of determining whether the complete document should be obtained for study. The length of the abstract should be no more than about 200 words. Only those concepts that are addressed in the executive summary should be included in the abstract.

Example of an abstract:

A recently developed ground-based instrument, employing light detecting and ranging (lidar) technology, was evaluated and found to accurately measure ozone concentrations at altitudes of up to 3,000 meters. The novel approach used in this study provides true vertical distributions of ozone concentrations aloft and better temporal coverage of these distributions than other, more common methods, such as those using aircraft and ozonesonde (balloon) techniques. The ozone and aerosol measurements from this study, in conjunction with temperature and wind measurements, will provide a better characterization of atmospheric conditions aloft and the processes involved in the formation of unhealthful ozone concentrations than can be achieved with traditional ground-based monitors.

Executive Summary. The function of the executive summary is to inform the reader about the important aspects of the work that was done, permitting the reader to understand the research without reading the entire Report. It should state the objectives of the research and briefly describe the experimental methodology[ies] used, results, conclusions, and recommendations for further study. All of the concepts brought out in the abstract should be expanded upon in the Executive Summary. Conversely, the Executive Summary should not contain concepts that are not expanded upon in the body of the Report.

The Executive Summary will be used in several applications as written; therefore, please observe the style considerations discussed below.

Limit the Executive Summary to two pages, single spaced.

Use narrative form. Use a style and vocabulary level comparable to that in Scientific American or the New York Times.

Do not list contract tasks in lieu of discussing the methodology.

Discuss the results rather than listing them.

Avoid jargon.

Define technical terms.

Use passive voice if active voice is awkward.

Avoid the temptation to lump separate topics together in one sentence to cut down on length.

The Executive Summary should contain four sections: Background, Objectives and Methods, Results, and Conclusions, described below.

THE BACKGROUND SECTION. For the Background, provide a one-paragraph discussion of the reasons the research was needed. Relate the research to the Board's regulatory functions, such as establishing ambient air quality standards for the protection of human health, crops, and ecosystems; the improvement and updating of emissions inventories; and the development of air pollution control strategies.

THE OBJECTIVES AND METHODS SECTION. At the beginning of the Objectives and Methods section, state the research objectives as described in the contract. Include a short, one or two sentence, overview of what was done in general for this research.

The methodology should be described in general, nontechnical terms, unless the purpose of the research was to develop a new methodology or demonstrate a new apparatus or technique. Even in those cases, technical aspects of the methodology should be kept to the minimum necessary for understanding the project. Use terminology with which the reader is likely to be familiar. If it is necessary to use technical terms, define them. Details, such as names of manufacturers and statistical analysis techniques, should be omitted.

Specify when and where the study was performed, if it is important in interpreting the results.

The findings should not be mentioned in the Objectives and Methods section.

THE RESULTS SECTION. The Results section should be a single paragraph in which the main findings are cited and their significance briefly discussed. The results should be presented as a narrative, not a list. This section must include a discussion of the implications of the work for the Board's relevant regulatory programs.

THE CONCLUSIONS SECTION. The Conclusions section should be a single short paragraph in which the results are related to the background, objectives, and methods. Again, this should be presented as a narrative rather than a list. Include a short discussion of recommendations for further study, adhering to the guidelines for the Recommendations section in the body of the Report.

Body of Report. The body of the Report should contain the details of the research, divided into the following sections:

INTRODUCTION. Clearly identify the scope and purpose of the project. Provide a general background of the project. Explicitly state the assumptions of the study.

Clearly describe the hypothesis or problem the research was designed to address. Discuss previous related work and provide a brief review of the relevant literature on the topic.

MATERIALS AND METHODS. Describe the various phases of the project, the theoretical approach to the solution of the problem being addressed, and limitations to the work. Describe the design and construction phases of the project, materials, equipment, instrumentation, and methodology. Describe quality assurance and quality control procedures used. Describe the experimental or evaluation phase of the project

RESULTS. Present the results in an orderly and coherent sequence. Describe statistical procedures used and their assumptions. Discuss information presented in tables, figures and graphs. The titles and heading of tables, graphs, and figures, should be understandable without reference to the text. Include all necessary explanatory footnotes. Clearly indicate the measurement units used.

DISCUSSION. Interpret the data in the context of the original hypothesis or problem. Does the data support the hypothesis or provide solutions to the research problem? If appropriate, discuss how the results compare to data from similar or related studies. What are the implications of the findings? Identify innovations or development of new techniques or processes. If appropriate, discuss cost projections and economic analyses.

SUMMARY AND CONCLUSIONS. This is the most important part of the Report because it is the section that will probably be read most frequently. This section should begin with a clear, concise statement of what, why, and how the project was done. Major results and conclusions of the study should then be presented, using clear, concise statements. Make sure the conclusions reached are fully supported by the results of the study. Do not overstate or overinterpret the results. It may be useful to itemize primary results and conclusions. A simple table or graph may be used to illustrate.

RECOMMENDATIONS. Use clear, concise statements to recommend (if appropriate) future research that is a reasonable progression of the study and can be supported by the results and discussion.

References. Use a consistent style to fully cite work referenced throughout the Report and references to closely related work, background material, and publications that offer additional information on aspects of the work. Please list these together in a separate section, following the body of the Report. If the Report is lengthy, you may list the references at the end of each chapter.

List of inventions reported and publications produced. If any inventions have been reported, or publications or pending publications have been produced as a result of the project, the titles, authors, journals or magazines, and identifying numbers that will assist in locating such information should be included in this section.

Glossary of terms, abbreviations, and symbols. When more than five of these items are used in the text of the Report, prepare a complete listing with explanations and definitions. It is expected that every abbreviation and symbol will be written out at its first appearance in the Report, with the abbreviation or symbol following in parentheses [i.e., carbon dioxide (CO_2)]. Symbols listed in table and figure legends need not be listed in the Glossary.

Appendices. Related or additional material that is too bulky or detailed to include within the discussion portion of the Report shall be placed in appendices. If a Report has only one appendix, it should be entitled "APPENDIX". If a Report has more than one appendix, each should be designated with a capital letter (APPENDIX A, APPENDIX B). If the appendices are too large for inclusion in the Report, they should be collated, following the binding requirements for the Report, as a separate document. The contract manager will determine whether appendices are to be included in the Report or treated separately. Page numbers of appendices included in the Report should continue the page numbering of the Report body. Pages of separated appendices should be numbered consecutively, beginning at “1”.

EXHIBIT A2

KEY PERSONNEL

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List Key Personnel as defined in the Agreement starting with the PI, by last name, first name followed by Co-PIs. Then list all other Key Personnel in alphabetical order by last name. For each individual listed include his/her name, institutional affiliation, and role on the proposed project. Use additional consecutively numbered pages as necessary.

Last Name, First Name	Institutional Affiliation	Role on Project
Principal Investigator (PI):		
Co-PI(s) – if applicable:		
Other Key Personnel :		

EXHIBIT A3

AUTHORIZED REPRESENTATIVES AND NOTICES

The following individuals are the authorized representatives for the State and the University under this Agreement. Any official Notices issued under the terms of this Agreement shall be addressed to the Authorized Official identified below, unless otherwise identified in the Agreement.

Changes in the University Principal Investigator are subject to the Key Personnel section of this Agreement. Changes in other contact information may be made by notification, in writing, between the parties.

State Agency Contacts Agency Name: **ARB**	**University Contacts** University Name:
Contract Project Manager (Technical) Name: Address: Research Division 1001 I Street, 5th Floor Sacramento, CA 95814 Telephone: (916) Fax: (916) 322-4357 Email: @arb.ca.gov	***Principal Investigator (PI)*** Name: Address: Telephone: Fax: Email:
Authorized Official (contract officer) Name: Pam Biggins, Chief Address: Budgets, Contracts, and Grants Branch 1001 I Street, 20th Floor Sacramento, CA 95814 ***Send notices to (if different):*** Name: (TRISH OR SARAH) Address: Research Division 1001 I Street, 5th Floor Sacramento, CA 95814 Telephone: (916) Fax: (916) 322-4357 Email: @arb.ca.gov	***Authorized Official*** Name: Address: ***Send notices to (if different):*** Name: Address: Telephone: Fax: Email:

Administrative Contact Name: (TRISH OR SARAH) Address: Research Division 1001 I Street, 5th Floor Sacramento, CA 95814 Telephone: (916) Fax: (916) 322-4357 Email: @arb.ca.gov	***Administrative Contact*** Name: Address: Telephone: Fax: Email:
Financial Contact/Accounting Name: Sarah Szepesi Address: Research Division 1001 I Street, 5th Floor Sacramento, CA 95814 Telephone: (916) 327-1256 Fax: (916) 322-4357 Email: sarah.szepesi@arb.ca.gov	***Authorized Financial Contact/Invoicing*** Name: Address: Telephone: Fax: Email:

EXHIBIT A4

USE OF PREEXISTING DATA, COPYRIGHTED WORKS AND DELIVERABLES

If either Party will be using any third-party or pre-existing data or copyrighted works that have restrictions on use, then list all such data or copyrighted works and the nature of the restriction below. If no third-party or pre-existing data or copyrighted works will be used, check "none" in this section.

A. State: Preexisting Data and/or copyrighted works to be provided to the University from the State or a third party for use in the performance in the Scope of Work.

☐ None or ☐ List:

Owner (University or 3rd Party)	Type of Data or copyrighted work (Restricted or Unrestricted)	Description	If Restricted, nature of restriction:

B. University: Use of Preexisting Data or copyrighted works included in Deliverables identified in Exhibit A1.

☐ None or ☐ List:

Owner (University or 3rd Party)	Type of Data or copyrighted work (Restricted or Unrestricted)	Description	If Restricted, nature of restriction:

C. Anticipated restrictions on use of Project Data.
If the University PI anticipates that any of the Project Data generated during the performance of the Scope of Work will have a restriction on use (such as subject identifying information in a data set), then list all such anticipated restrictions below. If there are no restrictions anticipated in the Project Data, then check "none" in this section.

☐ None or ☐ List:

Owner (University or 3rd Party)	Type of Data or copyrighted work (Restricted or Unrestricted)	Description	If Restricted, nature of restriction:

EXHIBIT A5

CURRICULUM VITAES (CV) / RÉSUMÉS / BIOSKETCH

Attach CV/Résumé/Biosketch for Key Personnel listed in Exhibit A2.

EXHIBIT A6

CURRENT & PENDING SUPPORT

University will provide current & pending support information for Key Personnel identified in Exhibit A2 at time of proposal and upon request from State agency. The "Proposed Project" is this application that is submitted to the State. Add pages as needed.

PI: NAME OF INDIVIDUAL

Status (currently active or pending approval)	**Award #** (if available)	**Source** (name of the sponsor)	**Project Title**	**Start Date**	**End Date**
PROPOSED PROJECT					

EXHIBIT A7

THIRD PARTY CONFIDENTIAL INFORMATION REQUIREMENT

CONFIDENTIAL NONDISCLOSURE AGREEMENT

(Identified in Exhibit A, Scope of Work – will be incorporated, if applicable)

If the scope of work requires the provision of third party confidential information to either the State or the Universities, then any requirement of the third party in the use and disposition of the confidential information will be listed below. The third party may require a separate Confidential Nondisclosure Agreement (CNDA) as a requirement to use the confidential information. Any CNDA will be identified in this Exhibit A7.

Or

Exhibit A7 is not applicable for this agreement.

EXHIBIT B1

BUDGET JUSTIFICATION

The Budget Justification will include the following items in this format.

Personnel

Name	Mo. Salary	Est. Months	% of Effort	Total
				$0
				$0
				$0
				$0
				$0
				$0
				$0
			TOTAL	

Justifications:
Name. Starting with the Principal Investigator list the names of all known personnel who will be involved on the project. Include all collaborating investigators, individuals in training, technical and support staff or include as “to be determined” (TBD).

Role on Project. For all personnel include name, position, function, and a percentage level of effort (as appropriate), including “to-be-determined” positions.

Fringe Benefits.

Name	Base	Fringe Rate	Total
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		TOTAL	

Justifications:
In accordance with University policy, explain the costs included in the budgeted fringe benefit percentages used, which could include tuition/fee remission for qualifying personnel to the extent that such costs are provided for by University policy, to estimate the fringe benefit expenses on Exhibit B.

Travel

Destination/Purpose	# of Trips	# of People	Duration (Days)	Airfare ($/Trip)	Per Diem ($/Day)	Ground Travel	Lodging	TOTAL
					$0			
					$0			
					$0			
					$0			
					$0			
					$0			
					$0			
							TOTAL	

Justifications:
Itemize all travel requests separately by trip and justify in accordance with University travel guidelines. Provide the purpose, destination, travelers (name or position/role), and duration of each trip. Include detail on airfare, per diem, lodging and mileage expenses, if applicable. Should the application include a request for travel outside of the state of California, justify the need for those out-of-state trips separately and completely.

Materials and Supplies

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
Itemize materials and supplies in separate categories. Include a complete justification of the project's need for these items. Theft sensitive equipment (under $5,000) must be justified and tracked separately in accordance with State Contracting Manual Section 7.29.

Equipment

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
List each item of equipment (greater than or equal to $5,000 with a useful life of more than one year) with amount requested separately and justify why each piece of equipment is needed for this project.

Consultant Costs

Consultant Name	Total
A.	$0
B.	$0
C.	$0
D.	$0
E.	$0
F.	$0
G.	$0
TOTAL	

Consultants are individuals/organizations who provide expert advisory or other services for brief or limited periods and do not provide a percentage of effort to the project or program. Consultants are not involved in the scientific or technical direction of the project as a whole.

Justifications:
Provide the names and organizational affiliations of all consultants. Describe the services to be performed, and include the number of days of anticipated consultation, the expected rate of compensation, travel, per diem, and other related costs.

Subawardee (Consortium/Subrecipient) Costs

Subrecepient Name	Total
A.	$0
B.	$0
C.	$0
D.	$0
E.	$0
F.	$0
G.	$0
TOTAL	

Each participating consortium organization must submit a separate detailed budget in the project period in Exhibit B2 Subcontracts.

Justifications:
Include a complete justification for the need for any subawardee listed in the application.

Other Direct Costs

Item	Vendor	Units	Cost/Unit	Total
A.				$0
B.				$0
C.				$0
D.				$0
E.				$0
F.				$0
G.				$0
			TOTAL	

Justifications:
Specifically justify costs that may typically be treated as indirect costs. For example, if insurance, telecommunication, or IT costs are charged as a direct expense, explain reason and methodology.

Rent

Justifications:
If the scope of work will be performed in an off-campus facility rented from a third party for a specific project or projects, then rent may be charged as a direct expense to the award.

Indirect (F&A) Costs

Justifications:
Indirect costs are calculated in accordance with the University budgeted indirect cost rate in Exhibit B.

EXHIBIT B2

SUBRECIPIENT BUDGET ESTIMATE

Use same formatting as Exhibit B and B1 for each subreceipient.

or

Exhibit B2 is not applicable for this agreement.

EXHIBIT B3

INVOICE AND DETAILED TRANSACTION LEDGER ELEMENTS

In accordance with Exhibit C – University Terms and Conditions, Section 14 – Payment and Invoicing, the invoice, summary report and/or transaction/payroll ledger shall be certified by the University's Financial Contact and the PI.

Summary Invoice – includes either on the invoice or in a separate summary document – by approved budget category (Exhibit B) – expenditures for the invoice period, approved budget, cumulative expenditures and budget balance available[1]

- Personnel
- Equipment
- Travel
- Subawardee – Consultants
- Subawardee – Subcontract/Subrecipients
- Materials & Supplies
- Other Direct Costs
    - TOTAL DIRECT COSTS (if available from system)
- Indirect Costs
    - TOTAL

Detailed transaction ledger and/or payroll ledger for the invoice period [2]

- Univ Fund OR Agency Award # (to connect to invoice summary)
- Invoice/Report Period (matching invoice summary)
- GL Account/Object Code
- Doc Type (or subledger reference)
- Transaction Reference#
- Transaction Description, Vendor and/or Employee Name
- Transaction Posting Date
- Time Worked

[1] If this information is not on the invoice or summary attachment, it may be included in a detailed transaction ledger.

[2] For salaries and wages, these elements are anticipated to be included in the detailed transaction ledger. If all elements are not contained in the transaction ledger, then a separate payroll ledger may be provided with the required elements.

- Transaction Amount

EXHIBIT D

ADDITIONAL REQUIREMENTS ASSOCIATED WITH FUNDING SOURCES

If the Agreement is subject to any additional requirements imposed on the funding State agency by applicable law (including, but not limited to, bond, proposition and federal funding), then these additional requirements will be set forth in Exhibit D. If the University is a subrecipient, as defined in 2 CFR 200 (Uniform Guidance on Administrative Requirements, Audit Requirements and Cost Principles for Federal Financial Assistance), and the external funding entity is the federal government, the name of the federal agency, the prime award number (if available), and the Catalog of Federal Domestic Assistance (CFDA) program number will be listed in Exhibit D. (Please see sections 10.A and 10.B of the UTC.)

Agency (Required for federal funding source)	**Prime Agreement Number** (if available)	**If Federal, CFDA Number**

OR

Exhibit D is not applicable for this agreement.

EXHIBIT E

SPECIAL CONDITIONS FOR SECURITY OF CONFIDENTIAL INFORMATION

If the of work or project results in additional legal and regulatory requirements regarding security of Confidential Information, those requirements regarding the use and disposition of the information, will be provided by the funding State agency in Exhibit E. (Please see section 8.E of the UTC.)

OR

Exhibit E is not applicable for this agreement.

EXHIBIT F

ACCESS TO STATE FACILITIES OF COMPUTING SYSTEMS AGENCY REQUIREMENTS/AGREEMENT

If the scope of work or project requires that the Universities have access to State agency facilities or computing systems and a separate agreement between the individual accessing the facility or system and the State agency is necessary, then the requirement for the agreement and the agreement itself will be listed in Exhibit F. (Please see section 20 of the UTC.)

OR

Exhibit F is not applicable for this agreement.

EXHIBIT G

NEGOTIATED ALTERNATE UTC TERMS

1. Advance Payment

A. Nothing herein contained shall preclude advance payments pursuant to Title 2, Division 3, Part 1, Chapter 3, Article 1 of the Government Code of the State of California.

B. Upon termination or completion of this Agreement, Contractor shall refund any excess funds to the ARB. Contractor will reconcile total Agreement costs to total payments received in advance and any remaining advance will be refunded to the ARB's Accounting Office. In the event the Agreement is terminated, total project costs incurred prior to the effective date of termination (including close-out costs) will be reconciled to total project payments received in advance and any remaining advance will be refunded to the ARB. In either event Contractor shall return any balance due to ARB within sixty (60) days, of expiration or earlier termination.