

State of California  
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 05-27

May 26, 2005

Agenda Item No.: 05-05-2

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code sections 39700 through 39705;

WHEREAS, a research proposal, number 2584-248, entitled "Characterization of the Off-Road Equipment Population", has been submitted by Eastern Research Group, Inc., in response to RFP No. 04-315;

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 2584-248 entitled "Characterization of the Off-Road Equipment Population", submitted by Eastern Research Group, Inc., for a total amount not to exceed \$299,985.

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 2584-248 entitled "Characterization of the Off-Road Equipment Population", submitted by Eastern Research Group, Inc., for a total amount not to exceed \$299,985.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, and as described in Attachment A, in an amount not to exceed \$299,985.

I hereby certify that the above is a true  
and correct copy of Resolution 05-27, as  
adopted by the Air Resources Board.

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Lori Andreoni, Clerk of the Board

## **ATTACHMENT A**

### **“Characterization of the Off-Road Equipment Population”**

#### **Background**

Rulemaking for off-road equipment will require improved information about the population of off-road equipment. The needed information includes identification of the most numerous types of equipment and horsepower groups, characterization of the owners of the various types of equipment, and characterization of them as a function of ownership and use. A specific need is to delineate the equipment that is not preempted from State regulation by federal law.

#### **Objective**

This project should (1) identify the types of equipment in California that are powered by internal combustion engines of less than 175 horsepower; (2) develop a categorization scheme for the equipment to abet the improvement of the emission inventory and the creation of regulations; (3) characterize the equipment categories by the sizes of engines, the business categories of the owners or users, the geographical locations of use, the seasons of use, and the applications (services) of the equipment; (4) obtain in-use data on equipment activity (temporal use profiles); and (5) provide equipment counts that can be used to estimate, for the overall population, the relative numbers of the equipment in the various categories, sizes, and uses.

#### **Methods**

Through a literature review, the contractor shall identify the types of off-road equipment powered with engines less than 175 horsepower that are commonly used in California. The contractor also will propose a categorization scheme for the equipment.

The contractor shall devise a plan for surveying personal, governmental, and industrial users of such equipment about the uses and characteristics of their equipment, then create surveys and survey samples.

The contractor shall conduct a pilot trial of surveys and data analysis to be reported in an interim report. The contractor shall provide recommendations for revisions of the survey contents, the survey plan, and the data analysis.

After approval of the revised plan by ARB staff, the contractor would implement the full plan and analyze the data to develop the objective statistics.

#### **Expected Results**

The project will provide a comprehensive and consistent profile of equipment populations, applications, users, and activity patterns spanning the industrial, public, and residential equipment operators across California.

**Significance to the Board**

The project will allow ARB to delineate the portion of off-road equipment of less than 175 horsepower that is not preempted from State regulation by federal law. It will enable improvements to the emission inventory and other bodies of information that will be needed to assess regulatory options for off-road equipment.

**Contractor:**

Eastern Research Group, Inc.

**Contract Period:**

24 months

**Principal Contractor (PI):**

Gordon F. Baker

**Contract Amount:**

\$299,985

**Basis for Indirect Cost Rate:**

A solicitation for preproposals for this project was sent to all University of California and California State University campuses. However, no responses were received. A public Request for Proposals was then released. As part of the solicitation, respondents are required to use federally approved indirect cost rates or explain the competitive and reasonableness of their rates. ERG rates are based on the "Indirect Rate Proposal" submitted to the U.S. EPA.

**Past Experience with this Principal Investigator:**

Mr. Gordon F. Baker is currently conducting several projects with ARB, El Monte.

**Prior Research Division Funding to ERG:**

Year	2004	2003	2002
Funding	\$0	\$0	\$0

# BUDGET SUMMARY

Eastern Research Group, Inc.

Characterization of the Off-Road Equipment Population

## **DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$ 22,935
2.	Subcontractors	\$ 229,149 <sup>1</sup>
3.	Equipment	\$ 4,000
4.	Travel and Subsistence	\$ 1,160
5.	Electronic Data Processing	\$ 917
6.	Reproduction/Publication	\$ 300
7.	Mail and Phone	\$ 513
8.	Supplies	\$ 0
9.	Analyses	\$ 0
10.	Miscellaneous	<u>\$ 0</u>
	Total Direct Costs	\$ 258,974

## **INDIRECT COSTS**

1.	Overhead	\$ 19,133
2.	General and Administrative Expenses	\$ 17,407
3.	Other Indirect Costs	\$ 0
4.	Fee or Profit	<u>\$ 4,471</u>
	Total Indirect Costs	<u>\$ 41,011</u>

**TOTAL PROJECT COSTS** \$299,985

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<sup>1</sup> ERG will employ highly trained subcontractors for the development and implementation of the surveys.

Attachment 1

**SUBCONTRACTOR'S BUDGET SUMMARY**

Subcontractor: NuStats Partners, L.P.

NuStats Partners, L.P. will conduct the pilot trial of surveys, gather activity data, and data analysis. They will also be the technical lead for these same activities if the pilot proves successful.

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$ 32,652
2.	Subcontractors	\$ 100,586 <sup>2</sup>
3.	Equipment	\$ 0
4.	Travel and Subsistence	\$ 0
5.	Electronic Data Processing	\$ 0
6.	Reproduction/Publication	\$ 1,470
7.	Mail and Phone	\$ 72
8.	Supplies	\$ 14,000
9.	Analyses	\$ 0
10.	Miscellaneous	<u>\$ 3,750</u>
	Total Direct Costs	\$ 152,530

**INDIRECT COSTS**

1.	Overhead	\$ 14,728
2.	General and Administrative Expenses	\$ 18,817
3.	Other Indirect Costs	\$ 0
4.	Fee or Profit	<u>\$ 18,608</u>
	Total Indirect Costs	<u>\$ 52,153</u>

**TOTAL PROJECT COSTS** \$ 204,683

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<sup>2</sup> NuStats will employ DataSource for assistance in the data collection, quality assurance and data entry.

Attachment 2

**SUBCONTRACTOR'S BUDGET SUMMARY**

Subcontractor: SDV/ACCI

SDV/ACCI technicians will be trained by ERG regarding the installation of the loggers for different applications. Then, they will be dispatched to the field to install loggers in Southern California and the Central Valley region. As necessary, units left in the field for multiple weeks will be retrieved by SDV/ACCI staff.

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$ 11,634
2.	Subcontractors	\$ 0
3.	Equipment	\$ 0
4.	Travel and Subsistence	\$ 1,020
5.	Electronic Data Processing	\$ 0
6.	Reproduction/Publication	\$ 0
7.	Mail and Phone	\$ 0
8.	Supplies	\$ 0
9.	Analyses	\$ 0
10.	Miscellaneous	<u>\$ 0</u>
	Total Direct Costs	\$ 12,654

**INDIRECT COSTS**

1.	Overhead	\$ 6,981
2.	General and Administrative Expenses	\$ 2,700
3.	Other Indirect Costs	\$ 0
4.	Fee or Profit	<u>\$ 2,131</u>
	Total Indirect Costs	<u>\$ 11,812</u>

**TOTAL PROJECT COSTS** \$ 24,466

## SUBCONTRACTOR'S BUDGET SUMMARY

Subcontractor: DataSource

Datasource will provide data collection services for this study.

### **DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$ 41,503
2.	Subcontractors	\$ 0
3.	Equipment	\$ 0
4.	Travel and Subsistence	\$ 0
5.	Electronic Data Processing	\$ 0
6.	Reproduction/Publication	\$ 0
7.	Mail and Phone	\$ 18,148
8.	Supplies	\$ 1,500
9.	Analyses	\$ 0
10.	Miscellaneous	<u>\$ 0</u>
	Total Direct Costs	\$ 61,151

### **INDIRECT COSTS**

1.	Overhead	\$ 31,542
2.	General and Administrative Expenses	\$ 0
3.	Other Indirect Costs	\$ 589
4.	Fee or Profit	<u>\$ 7,304</u>
	Total Indirect Costs	<u>\$ 39,435</u>

	<b><u>TOTAL PROJECT COSTS</u></b>	<b><u>\$100,586</u></b>
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