

**State of California  
AIR RESOURCES BOARD**

Resolution 01-12  
April 26, 2001

Agenda Item No.: 01-3-4

**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 2483-219, entitled "Collection and Analysis of Weekday/Weekend Activity Data in the South Coast Air Basin," has been submitted by Sonoma Technology, Incorporated, in response to RFP No. 00-313.

**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 2483-219 entitled "Collection and Analysis of Weekday/Weekend Activity Data in the South Coast Air Basin," submitted by Sonoma Technology, Incorporated, for a total amount not to exceed \$389,768.

**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 2483-219 entitled "Collection and Analysis of Weekday/Weekend Activity Data in the South Coast Air Basin," submitted by Sonoma Technology, Incorporated, for a total amount not to exceed \$389,768.

**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 \$389,768.

I hereby certify that the above is a true and correct copy of Resolution 01-12, as adopted by the Air Resources Board.

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Marie Kavan, Clerk of the Board

## **Attachment A**

### **“Collection and Analysis of Weekday/Weekend Activity Data in the South Coast Air Basin”**

#### **Background**

Over the years, various analyses of ambient air monitoring data have revealed that ambient ozone concentrations at many monitoring sites (primarily in urban areas) tend to be higher on weekends than on weekdays. This phenomenon has been called the ozone weekend effect (WE Effect). The exact cause of the WE Effect is not definitively known but is associated with the influence of differences in human activities on weekends compared to weekdays.

#### **Objective**

The objective of this project is to collect anthropogenic activity data, particularly for weekends. This project will update activity data for on-road, off-road, and stationary sources in the counties of Los Angeles, Orange, Riverside, and San Bernardino. Existing activity data will be supplemented with new activity data for important and under-represented portions of the emission inventory.

#### **Expected Results**

This project will collect on-road and off-road mobile source and stationary source activity data during the summer ozone season for a domain that encompasses the counties of Los Angeles, Orange, Riverside, and San Bernardino. The ultimate data collection goals are hourly-resolved activity data sets by day of the week that can be used to estimate both regional, county-level resolution emissions (e.g., EMFAC2000 and OFFROAD models) and additional microscale, gridded emissions for air quality modeling (e.g., Direct Travel Impact Model). This project's efforts will be allocated approximately 60 percent, 30 percent, and 10 percent respectively to address data needs in the on-road, off-road, and stationary source sectors.

#### **Significance to the Board**

The activity data will enable better spatial and temporal characterization of the differences between weekday and weekend emissions and will thus allow additional testing of the various hypotheses as to the cause(s) of the WE Effect. Testing of the various hypotheses will include photochemical modeling applications. In addition, the high ozone concentrations on weekends will also need to be modeled to identify the type(s) and amounts of controls that will be necessary to attain and maintain ambient air quality standards. Current emission inventories for modeling are based on average data and need to be improved to accurately characterize the spatial and temporal differences between weekdays and weekends. Data from this project will be used to improve weekday and weekend emission inventories for modeling (both for supporting the State Implementation Plan and for quantifying the effect of some weekday and weekend differences).

**Contractor:**  
Sonoma Technology, Incorporated

**Contract Period:**  
21 months

**Principal Investigator (PI):**  
Mr. Lyle Chinkin

**Contract Amount:**  
\$389,768

**Cofunding:**  
None

**Basis for Indirect Cost Rate:**

The Defense Contract Audit Agency (DCAA) is auditing Sonoma Technology Incorporated's (STI) indirect cost rate for 1998 on behalf of the U.S. Environmental Protection Agency and the Department of Interior's Mineral Management Service. In a draft letter dated December 31, 2000, the DCAA indicated that its "audit did not find any exceptions to STI's proposed CY 1998 final indirect rates." Final approval of the 1998 audit results is expected shortly. DCAA will soon begin their audit of STI's rates during 1999 and 2000.

**Past Experience with this Principal Investigator:**

The ARB's emission inventory staff have been very satisfied with the work of this principal investigator in previous projects. In fact, this project benefits from the private investigator's familiarity with the ARB's emission inventory as he was the developer of several components.

**Prior Research Division Funding to Sonoma Technology, Incorporated:**

Year	2000	1999	1998
Funding	\$0	\$0	\$0

# BUDGET SUMMARY

Sonoma Technology, Incorporated

Collection and Analysis of Weekday/Weekend Activity Data  
in the South Coast Air Basin

## **DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	84,714	
2.	Subcontractors	\$	190,552 <sup>1</sup>	
3.	Equipment	\$	0	
4.	Travel and Subsistence	\$	1,320	
5.	Electronic Data Processing	\$	1,000	
6.	Reproduction/Publication	\$	0	
7.	Mail and Phone	\$	0	
8.	Supplies	\$	0	
9.	Analyses	\$	0	
10.	Miscellaneous	\$	<u>0</u>	
	Total Direct Costs			\$277,586

## **INDIRECT COSTS**

1.	Overhead	\$	85,561	
2.	General and Administrative Expenses	\$	0	
3.	Other Indirect Costs	\$	0	
4.	Fee or Profit	\$	<u>26,621</u>	
	Total Indirect Costs			<u>\$112,182</u>

## **TOTAL PROJECT COSTS**

**\$389,768**

<sup>1</sup> GeoStats (\$74,927), Freeman, Sullivan & Co. (\$64,025), Transtec (\$26,600), Wiltec (\$25,000)

Attachment 1

**SUBCONTRACTORS' BUDGET SUMMARY**

Freeman, Sullivan & Co.

Description of subcontractor's responsibility: will collect activity data via surveys (telephone and mailings) and recruit households for instrumenting vehicles with GPS

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	20,385
2.	Subcontractors	\$	10,908
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	0
5.	Electronic Data Processing	\$	2,000
6.	Reproduction/Publication	\$	2,000
7.	Mail and Phone	\$	3,389
8.	Supplies	\$	0
9.	Analyses	\$	0
10.	Miscellaneous	\$	<u>0</u>
	Total Direct Costs		\$38,682

**INDIRECT COSTS**

1.	Overhead	\$	0
2.	General and Administrative Expenses	\$	25,343
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>0</u>
	Total Indirect Costs		<u>\$25,343</u>

**TOTAL PROJECT COSTS** **\$64,025**

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1 Mail House (\$6,797), CATI programmer (\$1,600), sample vendor (\$2,511)

Attachment 2

**SUBCONTRACTORS' BUDGET SUMMARY**

GeoStats

Description of subcontractor's responsibility: will collect and process GPS data

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	30,220
2.	Subcontractors	\$	6,000 <sup>1</sup>
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	1,740
5.	Electronic Data Processing	\$	0
6.	Reproduction/Publication	\$	0
7.	Mail and Phone	\$	150
8.	Supplies	\$	0
9.	Analyses	\$	0
10.	Miscellaneous	\$	<u>9,000<sup>2</sup></u>

Total Direct Costs \$47,110

**INDIRECT COSTS**

1.	Overhead	\$	22,541
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>5,276</u>

Total Indirect Costs \$27,817

**TOTAL PROJECT COSTS** \$74,927

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1 Dr. William Bachman of Georgia Tech University

2 leasing of GeoLoggers

Attachment 3

**SUBCONTRACTORS' BUDGET SUMMARY**

Wiltec

Description of subcontractor's responsibility: will deploy traffic counters

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	0
2.	Subcontractors	\$	0
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	0
5.	Electronic Data Processing	\$	0
6.	Reproduction/Publication	\$	0
7.	Mail and Phone	\$	0
8.	Supplies	\$	0
9.	Analyses	\$	0
10.	Miscellaneous	\$	<u>25,000<sup>1</sup></u>
	Total Direct Costs		\$25,000

**INDIRECT COSTS**

1.	Overhead	\$	0
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>0</u>
	Total Indirect Costs		<u>\$ 0</u>

**TOTAL PROJECT COSTS** **\$25,000**

<sup>1</sup> rental/deployment of 25 traffic counters @ \$1000

Attachment 4

**SUBCONTRACTORS' BUDGET SUMMARY**

Transtec Consulting

Description of subcontractor's responsibility: will install GPS equipment on vehicles

**DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	0
2.	Subcontractors	\$	0
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	0
5.	Electronic Data Processing	\$	0
6.	Reproduction/Publication	\$	0
7.	Mail and Phone	\$	0
8.	Supplies	\$	0
9.	Analyses	\$	0
10.	Miscellaneous	\$	<u>26,600<sup>1</sup></u>

Total Direct Costs \$26,600

**INDIRECT COSTS**

1.	Overhead	\$	0
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>0</u>

Total Indirect Costs \$ 0

**TOTAL PROJECT COSTS** **\$26,600**

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<sup>1</sup>Global Positioning System equipment deployment at 70 households @ \$380



