

State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 05-5

January 20, 2005

Agenda Item No.: 05-1-2

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 2566-246, entitled "Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California", has been submitted by the University of California, Davis;

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 2566-246 entitled "Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California", submitted by the University of California, Davis, for a total amount not to exceed \$64,976.

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 2566-246 entitled "Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California", submitted by the University of California, Davis, for a total amount not to exceed \$64,976.

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 \$64,976.

I hereby certify that the above is a true and correct copy of Resolution 05-5, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

“Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California”

Background

Out-of-state operation by heavy-duty trucks (HDTs) in the state of California is currently estimated to account for about 25 percent of the heavy-heavy-duty diesel truck (HHDDT) activity in the state. However, this is a statewide estimate and does not distinguish activity differences among different California counties and air basins.

There is reason to believe that out-of-state HHDDT activity is not uniform from county to county. For example, many out-of-state HHDDTs pick loads at California ports and then transport these loads either in north-south corridors (Interstate-5 or Highway-99), or eastward and back out-of-state.

In order to improve the ARB EMFAC model's emissions estimates for out-of-state vehicle miles traveled (VMT), there is a need to examine existing data sources and/or create new databases of HHDDT activity as manifested by HHDDT VMT and population.

Objective

The objective of this project is to determine activity estimates for heavy-duty trucks (HDTs) registered out-of-state, but operating in California. These estimates include allocation of (VMT) by air basin, HDT activity seasonality, and age distribution of out-of-state HDTs.

Methods

The principal investigator, Dr. Christie-Joy Brodrick, will review a variety of heavy-duty truck data sources, and oversee the development, administration and data analysis of surveys to be taken at weigh stations by UC Davis students.

The data sources include up to seven organizations including the California Department of Transportation (Caltrans) and other state entities such as the Department of Motor Vehicles, the California Highway Patrol, the American Trucking Association, the California Trucking Association's Transportation Research Education and Development Foundation (TRED), and the National Association of Truck Stop Operators. These data will be used to formulate initial hypotheses on operations characteristics, sampling locations, sample strata, and sample size for the surveys, and may also be used to develop fleet statistics.

The surveys would be administered at four weigh stations in California, and three truck stops located near the California and Arizona, Oregon and Nevada borders. The weigh stations are considered to be the best sampling location because HDTs are required to stop at weigh stations, but these data will be supplemented by additional survey data collected at truck stops just outside the California border. Electronic surveys will be

used to supplement the in-person surveys and will be administered through American Trucking Association and the Owner-Operator Independent Drivers Association.

Data will be stored and processed using standard software packages (e.g., SAS for statistical analyses).

Expected Results

Project results will include survey results and summary results from the literature review and data analyses. The data will be in a format compatible with the EMFAC model.

Significance to the Board

The data from this project will be incorporated into the ARB's on-road motor vehicle emissions model EMFAC to improve the activity estimates, and hence the emissions estimates, for heavy-duty trucks.

Contractor:

University of California, Davis

Contract Period:

15 months

Principal Investigator (PI):

Dr. Christie-Joy Brodrick

Contract Amount:

\$64,976

Basis for Indirect Cost Rate:

The State and the UC system have agreed to a ten percent indirect cost rate.

Past Experience with this Principal Investigator:

ARB Research Division staff has not previously worked with this contractor on an ARB research contract. However, ARB staff has worked with this contractor in terms of reviewing journal papers and exchanging data and information, and we have found the PI to be knowledgeable in the subject area.

Prior Research Division Funding to UCD:

Year	2004	2003	2002
Funding	\$0	\$220,896	\$0

BUDGET SUMMARY

University of California, Davis

Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$52,037	
2.	Subcontractors	\$ 0	
3.	Equipment	\$ 0	
4.	Travel and Subsistence	\$ 6,142 ¹	
5.	Electronic Data Processing	\$ 0	
6.	Reproduction/Publication	\$ 890	
7.	Mail and Phone	\$ 0	
8.	Supplies	\$ 0	
9.	Analyses	\$ 0	
10.	Miscellaneous	<u>\$ 0</u>	
	Total Direct Costs		\$59,069

INDIRECT COSTS

1.	Overhead	\$5,907	
2.	General and Administrative Expenses	\$ 0	
3.	Other Indirect Costs	\$ 0	
4.	Fee or Profit	<u>\$ 0</u>	
	Total Indirect Costs		<u>\$5,907</u>

TOTAL PROJECT COSTS

\$64,976

¹ The travel budget includes \$2,560 for conference presentations and \$3,582 for travel, lodging and per diem to perform the surveys to be administered at truck stops and weigh stations.