State of California
AIR RESOURCES BOARD

Developing a New Methodology for Analyzing Potential Displacement

RESEARCH PROPOSAL

Resolution 13-25

June 27, 2013

Agenda Item No.: 13-6-1

WHEREAS, the Air Resources Board (ARB or 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 2765-276, entitled "Developing a New Methodology for Analyzing Potential Displacement," has been submitted by the University of California, Berkeley; and

WHEREAS, in accordance with Health and Safety Code section 39705, the Research Screening Committee has reviewed and recommends for funding:

> Proposal Number 2765-276 entitled "Developing a New Methodology for Analyzing Displacement," submitted by the University of California, Berkeley, for a total amount not to exceed $695,792.

WHEREAS, the Research Division staff has reviewed Proposal Number 2765-276 and finds that in accordance with Health and Safety Code section 39701, this project will result in a series of planning tools that will be developed in partnership with Metropolitan Planning Organizations (MPOs) that can help MPOs, local jurisdictions, community-based organizations, and other stakeholders better understand the social equity impacts of land use and transportation planning decisions, as well as potential options for minimizing adverse displacement impacts.

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 recommendations of the Research Screening Committee and Research Division staff and approves the following:

> Proposal Number 2765-276 entitled "Developing a New Methodology for Analyzing Displacement," submitted by the University of California, Berkeley not to exceed $695,792.

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 $695,792.

I hereby certify that the above is a true and correct copy of Resolution 13-25, as adopted by the Air Resources Board.

Tracy Jensen, Clerk of the Board

ATTACHMENT A

"Developing a New Methodology for Analyzing Displacement"

Background
Many regions in California are pursuing more compact, transit-oriented development (TOD) in order to achieve regional greenhouse gas reductions from passenger vehicles set by ARB as required by Senate Bill (SB) 375. Transit-oriented development has raised concerns about potential social equity impacts, including the potential for displacement. The concern is that transit investment and development will lead to higher housing and rent prices, displacing low-income communities out of the area. While some Metropolitan Planning Organizations (MPOs) have attempted to assess the potential for this negative impact as part of the environmental justice evaluations of their Regional Transportation Plans/Sustainable Communities Strategy (RTP/SCS), current methods are limited and do not take into account investment type and magnitude and market dynamics. In addition, there has been no analysis to date on whether displacement of public transit users with higher income, car-owning households, has potential implications for travel behavior, which may impact reduction benefits assumed to be achieved through the pursuit of transit-rich development.

Objective
The objective of this study is to improve our understanding of the relationship between transit-oriented development, the potential for displacement in California, and the impact it may have on travel behavior. This study also aims to advance how displacement is assessed in transportation and land use planning processes by developing a set of tools that can be used by MPOs, local governments, and other stakeholders. Finally, this project will analyze the effectiveness of policies at minimizing displacement.

Methods
This analysis will specifically be conducted for the San Francisco Bay Area and Los Angeles County—both strong market regions with transit investment and the presence of TOD, which may create displacement pressures. The project will examine how transit investment and market factors have reshaped the socio-economic and physical profiles of the neighborhoods surrounding fixed-rail transit stations compared to neighborhoods without such transit investment. Using census data and detailed parcel data that cover a 30 year period (1980-2010), the research team will build typologies of neighborhood transit investment type and amount, as well as neighborhood displacement in order to build a model that analyzes mobility for areas around rail stations, controlling for income and housing price appreciation levels. The results of this analysis will be used to develop a set of tools to examine the likely outcomes around TODs. Specifically, this project will develop an off-model tool, as well as expand the capabilities of the PECAS and UrbanSim modeling tools used by the Southern California Association of Governments (SCAG) and the Metropolitan Transportation Commission (MTC) respectively. These tools will help MPOs and local governments incorporate social equity into planning processes, including the development of their SCSs.

This project will also begin to examine the potential net impact displacement may have on travel behavior using four different analytic approaches employed on pre-existing data sources.

Finally, this project will identify strategies with the potential to minimize displacement despite pressures from transit investment and TOD. A series of six case studies will be conducted to analyze the effectiveness of such policies in different contexts.

Expected Results
This project will result in a series of planning tools that will be developed in partnership with MPOs that can help MPOs, local jurisdictions, community-based organizations, and other stakeholders better understand the social equity impacts of land use and transportation planning decisions, as well as potential options for minimizing adverse displacement impacts.

Significance to the Board
MPOs are doing their part to achieve the goals of SB 375 by creating long range transportation and land use plans to reduce greenhouse gas emissions and meet the State assigned targets. ARB support in this area can help MPOs as they evaluate and pursue land use and transportation strategies that uphold social equity, ensuring all Californians benefit from the State's greenhouse gas reduction strategies. Working with MPOs, this project will directly inform the SCS planning process, allowing planners to assess the potential for transit-oriented development to displace low-income communities. This research will support the development of regional and local plans that are not only environmentally valuable, but are also beneficial to all California communities.

Contractor:
University of California, Berkeley

Contract Period:
26 Months

Principal Investigator:
Karen Chapple, Ph.D.

Contract Amount:
$695,792

Basis for Indirect Cost Rate:
The State and the University of California, Berkeley have agreed to a 10 percent indirect cost rate.

Past Experience with the Principal Investigator:
Dr. Karen Chapple is a member of the research team for the ARB research contract titled "Analyzing the Economic Benefits and Costs of Smart Growth Strategies."
Dr. Karen Chapple has pioneered research on gentrification and affordable housing in TOD, and recently advised MTC/ABAG on the affordable housing allocation for their

Sustainable Communities Strategy.. She specializes in translating academic work into decision-making tools for policymakers, and as part of the Great Communities Collaborative has provided technical assistance to over 20 cities in the Bay Area on linking affordable housing and transit.

Prior Research Division Funding to the University of California, Berkeley:

Year	2012	2011	2010
Funding	$1,320,000	$754,264	$801,587

BUDGET SUMMARY

University of California, Berkeley

"Developing a New Methodology for Analyzing Potential Displacement"

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 216,943	
2.	Subcontractors	$ 254,949	
3.	Equipment	$ 0	
4.	Travel and Subsistence	$ 4,800	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 2,500	
7.	Mail and Phone	$ 750	
8.	Supplies	$ 42,948	
9.	Analyses	$ 0	
10.	Miscellaneous	$ 143,438[1]	
	Total Direct Costs		$666,328
INDIRECT COSTS			
1.	Overhead	$ 29,464	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 0	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$ 29,464
TOTAL PROJECT COSTS			**$695,792**

[1] Miscellaneous costs include Graduate Student Researcher Tuition Remission per UC Berkeley Policy. This project requires 4 semesters (2 years) of registration fees and tuition for 4 Graduate Student Researchers. Tuition and fees are based on 2013-2014 and 2014-2015 academic year rates of $8,437/semester and $9,281/semester, respectively.

Attachment 1

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: University of California, Los Angeles

Description of subcontractor's responsibility: UCLA Co-PIs will share responsibility with Professor Chapple on four of the contract tasks: the literature review, analysis of historical neighborhood change, analysis of the impact of displacement on auto ownership and use, and identification of strategies to minimize displacement.

DIRECT COSTS AND BENEFITS				
1.	Labor and Employee Fringe Benefits	$	176,445	
2.	Subcontractors	$	0	
3.	Equipment	$	0	
4.	Travel and Subsistence	$	4,000	
5.	Electronic Data Processing	$	0	
6.	Reproduction/Publication	$	750	
7.	Mail and Phone	$	500	
8.	Supplies	$	3,500	
9.	Analyses	$	0	
10.	Miscellaneous	$	1,122	
	Total Direct Costs			$186,317
INDIRECT COSTS				
1.	Overhead	$	18,632	
2.	General and Administrative Expenses	$	0	
3.	Other Indirect Costs	$	0	
4.	Fee or Profit	$	0	
	Total Indirect Costs			$18,632
TOTAL PROJECT COSTS				**$204,949**

Attachment 2

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: Southern California Association of Governments (SCAG)

Description of subcontractor's responsibility: SCAG will focus on integrating displacement indicators into its PECAS model, as well as developing the off-model assessment methodology with the researchers.

DIRECT COSTS AND BENEFITS				
11.	Labor and Employee Fringe Benefits	$	50,000	
12.	Subcontractors	$	0	
13.	Equipment	$	0	
14.	Travel and Subsistence	$	0	
15.	Electronic Data Processing	$	0	
16.	Reproduction/Publication	$	0	
17.	Mail and Phone	$	0	
18.	Supplies	$	0	
19.	Analyses	$	0	
20.	Miscellaneous	$	0	
	Total Direct Costs			$50,000
INDIRECT COSTS				
5.	Overhead	$	0	
6.	General and Administrative Expenses	$	0	
7.	Other Indirect Costs	$	0	
8.	Fee or Profit	$	0	
	Total Indirect Costs			$0
TOTAL PROJECT COSTS				**$50,000**