

# HOUSTON ADVANCED RESEARCH CENTER



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## H9.2003: ASSESSMENT OF INCENTIVES FOR ALTERNATIVE TRANSPORTATION MEASURES

### *Final Report*

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# 1. INTRODUCTION

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NuStats, on behalf of the Houston Advanced Research Center (HARC), conducted a telephone survey of 720 randomly selected households in the eight-county Houston/Galveston Ozone Non-Attainment Area. This report documents the design, implementation, and results of H9.2003: Assessment of Incentives for Alternative Transportation Measures.

The purpose of this project is to identify effective alternative transportation pricing and land use incentives to reduce vehicle miles of travel in the region. A telephone survey was conducted to determine how Houston/Galveston area residents would respond to incentives to drive fewer miles and what amount of these incentives would stimulate different travel choices. The results of the survey will estimate the potential reduction in vehicle miles from respondent reaction to commuter and other incentives.

Collected data include household demographics, vehicle data, workplace travel demand management programs and participation, opinions on various travel demand management programs, and likelihood of participation in the programs.

The survey was conducted among randomly selected household in the counties of Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. Surveys were conducted during from February 23 and April 20, 2004 from the NuStats DataSource data collection facility in El Paso, Texas. The majority of the dialing hours were from 5 p.m. to 9 p.m. with daytime calls as appropriate.

This report summarizes the results of the 720 surveys and provides estimates on VMT reduction based on the results of the survey. Six general categories of TDM programs were presented to respondents. These include mileage based insurance, congestion pricing, peak period parking surcharges, inducements to live close to the workplace, incentives to move to transit friendly locations, and telecommuting.

This report is organized into six sections: Introduction, Methods, VMT Estimation Process, Survey Results, VMT Reduction Estimation, and VMT Reduction Results.



## 6. VMT REDUCTION RESULTS

### VMT REDUCTION RESULTS AND RECOMMENDATIONS

In general, the VMT reduction analysis provides a prioritized list of the potential impacts of various programs on regional VMT for the Houston-Galveston area. Some of the responses to the mortgage-based incentive questions are not indicative of the willingness to move, but a willingness to participate in the program if they were to move. Without information on the percentage of agreeable participants that would actually move because the program was offered (as opposed to taking part in the program if they were to move for some other reason), VMT impacts cannot be estimated. Exhibit 6.1 shows the overall impact of the programs on VMT, but assumes that all of those agreeing to mortgage incentives would actually move. Therefore, without requiring the household to move, the best alternatives for reducing regional VMT from the stated preference would come from the Parking Surcharge, Mileage-Based Insurance Pricing, and Telecommuting.

The survey does show that households that do not have transit access have an estimated 32% higher daily household VMT. It is not clear if this increase is from a lack of transportation alternatives, longer distances to destinations, decreased opportunity for trip chaining, or other reasons, or a combination of factors. The survey shows that the mortgage-incentives have support from the respondents.

Exhibit 6.1 summarizes the prioritized scenarios selected by respondents. The table lists the numbers of survey participants that said they would participate in the program. The regional VMT impact was generated by applying the fraction of participants to the region. Some groupings of variables are possible, but the survey cannot identify the VMT impacts from combining programs. It is not known if the impact of how one program would impact the estimated VMT reduction of another program. It can be assumed that programs that target reductions or eliminations of work trips could effectively be combined with programs that target other trip purposes (i.e., telecommuting and mileage-based insurance programs).

EXHIBIT 6.1:  
PRIORITIZED SCENARIOS

*(n=996 responses, respondents can participate in more than one program)*

VMT RANK	PROGRAM	PROGRAM PARTICIPANTS	POTENTIAL REGIONAL VMT IMPACT	POTENTIAL IMPACT %
1	Incentive to live near transit	278	15,388,436	14.04 %
2	Incentive to move: \$2k/2yr/1m	197	9,544,889	8.71%
3	Parking Surcharge	135	4,234,588	3.86%
4	Moving closer to town	56	3,306,484	3.02%
5	Mileage-Based Insurance Pricing	188	3,227,869	2.95%
6	Telecommuting	80	2,509,385	2.29%
7	Congestion Pricing - \$2	22	634,727	0.58%
8	Incentive to move: \$2k/5yr/1m	10	490,806	0.45%
9	Congestion Pricing - \$1	16	448,368	0.41%
10	Incentive to move: \$5k/5yr/1m	7	278,616	0.25%
11	Incentive to move: \$5k/5yr/2m	3	271,235	0.25%
12	Employer Parking Program	4	125,469	0.11%

Of all the programs mentioned in the survey, respondents indicated which of the eight programs would have the most impact on how they travel now. Mileage-based auto insurance is the most popular among the eight programs with nearly one-in-four (24%) indicating as such. However, the potential impact on VMT reduction in the region is about one-third that of the program that provides incentives to live near transit. Although receiving incentives to live near transit is not one of the most popular among respondents of the eight programs presented, it would clearly have the most impact on VMT. A mortgage incentive also indicates a relatively large impact on VMT but is only attractive to one-in-ten respondents.

**EXHIBIT 6.2:**  
**PROGRAMS THAT RESPONDENTS FELT WILL HAVE GREATEST IMPACT ON TRAVEL**  
*(n=625, only one response per respondent)\**

PROGRAMS	FREQUENCY	PERCENT
Mileage-based insurance where you pay more or less depending on how much you drive	175	28%
Work out of my home at least one day per week by "telecommuting"	124	20%
Variable roadway pricing whereby tolls are increased during peak periods of travel	75	12%
Get a larger mortgage to buy a home in area with good transit service	73	12%
Receive a no-interest loan for a down payment on a home if it is located near the workplace	60	10%
Parking cash out programs where the employer no longer pays for your parking but rather pays the employees the money to use for whatever they choose	48	8%
If more affordable, compact housing is built in transit-friendly locations to encourage use of public transit	46	7%
Peak period parking surcharges where the cost to park increase during peak travel times	24	4%
<b>Total</b>	<b>625</b>	<b>100%</b>

*\*Among those who responded*