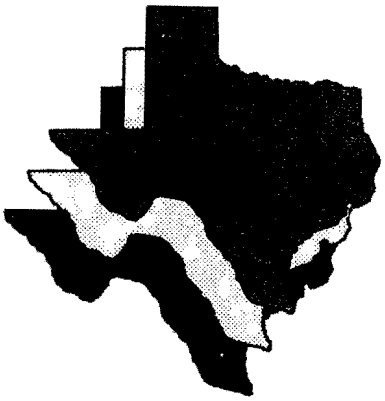

**DEPARTMENTAL INFORMATION EXCHANGE**

Summary Report 484-14S
August 1992

# HOUSTON HOV USERS: HOW THEY USE AND VIEW HOVs

## PROBLEM STATEMENT

To address the congestion problem and improve mobility levels within the Houston metropolitan area, the Metropolitan Transit Authority of Harris County (METRO) and the Texas Department of Transportation (TxDOT) are developing a system of high-occupancy vehicle (HOV) lanes within the existing freeway network. Phase I of the first completed HOV lane opened on the Katy Freeway (Interstate 10W) in October 1984. Initially, only authorized buses and vanpools were designated as eligible users of the HOV lane. However, to encourage greater use of the facility, carpools were allowed on the HOV lane beginning in April 1985. Carpool effects are now being monitored and evaluated in order to assess the success of HOV operations. Also necessary is an assessment of public attitudes toward the HOV lane development in Houston.

## OBJECTIVES

The Texas Transportation Institute (TTI), in cooperation with TxDOT and the Federal Highway Administration (FHWA), is conducting ongoing study 484, *An Assessment of Carpool Utilization of the Katy High-Occupancy Vehicle Lane and the Characteristics of Houston's HOV Lane Users and Nonusers*, to monitor the impacts of Houston's carpool HOV lane use. In addition, TTI is assessing public attitudes concerning the HOV lanes by distributing survey questionnaires to both HOV lane users and nonusers.

This research report documents usage and opinion data collected concerning the Katy Freeway corridor in October 1990, 66 months after carpool use of the Katy HOV lane began. The 1990 data are compared to similar data collected before carpool use was permitted (March 1985) and after carpool use was permitted (April 1986, October 1987, October 1988 and October 1989). Also included in this report are summaries of survey data collected along the Katy, North, Northwest and Gulf Freeway/HOV lane corridors from April 1985 through October 1990. The report provides details of the following key topics:

- Background and trends in the Katy HOV lane utilization;
- Criteria for evaluating success of the HOV lane carpool experiment;
- Survey evaluations of HOV lane users and nonusers, transit users, carpool/vanpools,and freeway motorists; and
- Findings and conclusions as of October 1990.

## FINDINGS

The evaluation of the effects associated with permitting carpools to use the Katy HOV lane and the assessment of public attitudes concerning the Houston HOV lanes indicated the following:

- More than 90 percent of the a.m. peak period HOV lane bus trips are destined to downtown Houston. More than three-fourths of the North and Gulf HOV lane carpoolers and vanpoolers are also destined to the downtown area.
- The location and configuration of both the Katy and the Northwest HOV lanes permit convenient access to/from the Galleria-Post Oak area, Greenway Plaza and the

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In cooperation with the
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Research Summary Report

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| Criterion | Relative Weighting | Average Scoring | | Conclusion Pertaining to Experiment |
|---|---|---|---|---|
| | | April '86 | October '90 | |
| Change in Person Movement On the HOV Lane Directly Due to Carpooling | 25% | 2.5 | 4 | Highly Successful |
| Non-User Perception of Katy HOV Use | 30% | 1 | 2 | Unsuccessful |
| Travel Time Change On the HOV Lane | 20% | 4 | 4 | Highly Successful |
| Change in Delay to Mixed-Flow Traffic | 15% | 4 | 4 | Highly Successful |
| Increase of HOV Lane Breakdowns | 5% | 3 | 1 | Highly Unsuccessful |
| Increase in Authorization and Enforcement Costs | 5% | 3 | 3 | Successful |
| Total | 100% | 2.63 | 3.20 | Successful |

*Evaluation of the Katy HOV Lane Carpool Experiment* (1=Highly Unsuccessful, 2=Unsuccessful, 3=Successful, and 4=Highly successful.)

Texas Medical Center.

• In considering previous travel modes of HOV lane users, significant percentages either drove alone or did not make the trip prior to using the HOV lane.

• While 37 to 68 percent of the HOV lane users indicated they would be using their current mode of transportation even if there was no HOV lane, between 22 percent and 43 percent said they would not. Thus HOV lanes can be credited with encouraging motorists to switch modes.

• HOV lane users generally perceive a 10-20 minute travel time savings as a result of being able to use a priority lane.

• In the Katy, North and Northwest HOV lane corridors, at least one-third of the motorists operating in the freeway mainlanes (non-HOV lane users) feel there is sufficient vehicular utilization of the HOV lanes to justify the projects. Furthermore, between 71 percent and 81 percent of the motorists in these corridor feel the HOV lanes are good transportation improvements. These represent the highest percentages of favorable responses received to date regarding this issue.

## CONCLUSIONS

It appears that permitting carpools to travel the Katy and North HOV lanes has had positive effects on both actual and perceived utilization of these facilities. The above table illustrates the overall evaluation of the Katy HOV Lane Carpool Experiment and shows how the October 1990 "successful" rating was obtained. Because public support for HOV lane alternatives is substantial, TxDOT should continue implementation and evaluation in areas plagued with congestion.

*—Prepared by Kelly West, Science and Technology Writer, Texas Transportation Institute.*

The information described in this summary is reported in detail in TTI Research Report 484-14, *An Assessment of Carpool Utilization of the Katy High-Occupancy Vehicle Lane and the Characteristics of Houston's HOV Users and Nonusers*, Diane L. Bullard, October 1991. The contents of this summary do not necessarily reflect the official views of the Federal Highway Administration or the Texas Department of Transportation.