



Project Number

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Investigating the Value of Time and Value of Reliability for Managed Lanes

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Current Situation

Managed lanes employ various operational and design strategies to improve highway efficiency by moving traffic to lanes that are restricted, for example, to drivers with one or more passengers or to drivers that pay a fee. A driver's decision to use a managed lane is based at least in part on the perception of value, either the value of the driver's time (VOT) or the value of reliability (VOR).

Research Objectives

In this project, Florida International University researchers sought to understand VOT and VOR for different kinds of drivers and drivers with different goals. To do so, they conducted a comprehensive study of VOR and VOT for managed lanes. Data from this project can be used in traffic models to better deploy managed lanes.

Project Activities

The researchers had three objectives: quantify the VOT and VOR indicators that contribute to the willingness to pay and explore the dataset needed to understand the behavior changes in responding to managed lanes; examine how the impacts of managed lanes differ among users and under various circumstances and how to represent user heterogeneity; and recommend approaches to calculate VOT and VOR for incorporation into the Florida State Uniform Traffic Management System (FSUTMS) computing framework.

A literature review revealed that VOT and VOR studies usually employ survey data based either on potential users' stated preferences (SP) or from measurement of users' observed choices (revealed preference, RP). In this project, researchers combined both types of data in their models, conducting a survey of over 2,000 drivers to obtain SP data and observing over 1,000 for RP data. Combining SP and RP data into one analysis framework required a pooled modeling technique to account for disparities between the data sets and to show the true impacts of model parameters on travel behavior.

Driver choice was analyzed in relation to several driver descriptors, including trip purpose, household income, gender, day of the week, time of day, trip urgency, and more. Drivers have many choices, and data analysis revealed patterns in route choice, mode choice, departure time choice, trip frequency choice, and others and correlated these choices to descriptors.

Project Benefits

A more precise understanding of drivers using managed lanes can lead to better design of these lanes and rules governing their use. In turn, this can increase the efficiency of managed lanes.



Managed lanes, like this one on I-95, can increase the efficiency of heavily traveled highways.

For more information, please see dot.state.fl.us/research-center