

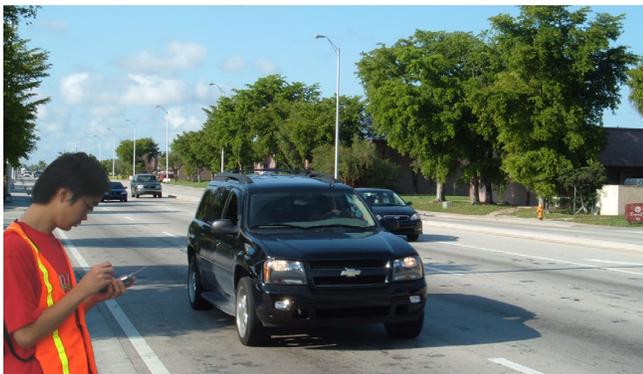


# Florida Department of Transportation Research

## Vehicle Occupancy Data Collection Methods (Phase II)

BD015-14 (12/07)

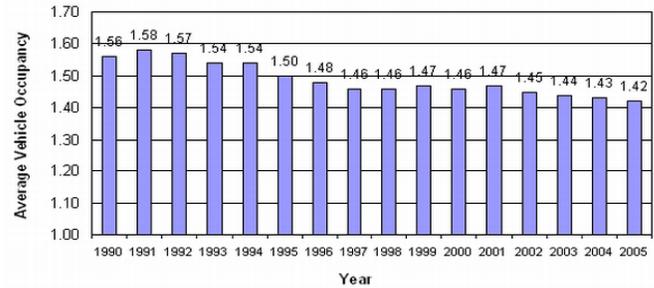
Accurate vehicle occupancy data are necessary to evaluate the effectiveness of traffic congestion control methods, such as dedicated commuter lanes. In a previous phase of study (BD015-09), researchers developed occupancy data collection and analysis tools that can be used in Florida by state and local agencies. They addressed the difficulties of using roadside observers to count vehicle



The PDA interface, while useful for collecting data, exposes users to traffic. FAVORITE has reduced the need for roadside counts .

occupants and developed a pocket PC application that would allow observers to easily enter data that could later be downloaded into a desktop analysis program. The researchers also investigated the use of accident records as a source of vehicle occupancy data. Based on the results, they developed a computer program, the Florida Accident Vehicle Occupancy Rate Information Estimator (FAVORITE), that facilitates the estimation and analysis of vehicle occupancy using accident records.

The purposes of this follow-up study were to perform a case study that applies the sampling and analysis procedure identified in the Phase I study and to refine and update the previously developed tools. The researchers addressed



FAVORITE is able to use crash statistics to clearly show vehicle occupancy rates without roadside counts.

the value of roadside counts and found that data collected during midweek daylight hours (excluding commuter traffic hours) can provide reliable average occupancy figures for all daylight hours. They also developed upgrades to the pocket PC tool that included an improved touchscreen and a simplified task menu to allow quicker and easier data entry. The researchers revised FAVORITE to eliminate statistical biases for driver age and accident severity. They also updated FAVORITE's database to include accident statistics through 2005 and added occupancy prediction models for urban and county highway networks.

The researchers found that accident data provides better occupancy estimates than roadside data because it tallies all passengers, including those, like children, who might not be visible to roadside observers. Accident data is available for all hours, not just daylight, and its use eliminates the risk of injury to roadside observers. By combining the proven value of accident data with new predictive models, the FAVORITE program provides an efficient and cost effective tool for Florida's transportation managers to monitor and predict vehicle occupancy trends.

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