



## Florida Department of Transportation Research

Field Data Collection and Analysis for Freeway Work Zone Capacity Estimation  
BD545-82

In 2007, researchers at the University of Florida completed a study (BD545-51) designed to update FDOT's 10-year-old model for estimating freeway work zone traffic flow capacity. The researchers developed new planning and operations models for estimating work zone capacity. When the study began, work zone field data needed to develop the models was not available. Consequently, the researchers used simulated data.

The researchers collected data at the Jacksonville work site for 15 days, during which time each lane was closed for several days and different levels of traffic congestion occurred. They used the data to evaluate and refine the new models.

The researchers compared the capacities measured in the field to capacity estimates developed using the new models and the simulated data, and to estimates developed using FDOT's traditional methodology.

Based on these limited comparisons, the new models proved to be more accurate than the older models. FDOT's traditional model underestimated traffic flow by approximately 10%. The new planning model underestimated flow by 8.8%. The new operations model predicted the flow with an error of less than 1%.

The accuracy and flexibility that the new operations model demonstrated during this study is very promising. However, the researchers recommend that the model be further evaluated using field data from additional sites to validate its performance. This model has the potential to become a valuable tool to enhance the safety and efficiency of work zone management.



*View from FDOT camera at the beginning of the work zone*

Towards the end of the study, however, a freeway work zone in Jacksonville provided an opportunity to capture actual field data. This opportunity served as the basis for a follow-up study (BD545-82), in which the researchers used Jacksonville Traffic Management Center cameras installed in the area of the subject work zone to collect field data.

Project Manager: Frank Sullivan, Roadway Design Office  
Principal Investigator: Lily Elefteriadou, University of Florida  
For more information, visit <http://dot.state.fl.us/research-center>.