



Florida Department of Transportation Research Travel Time Reliability Models for Freeways and Arterials BD545-70 (4/08)



The development of the statewide Strategic Intermodal System (SIS) is a major goal for the Florida Department of Transportation. The SIS is a network of freeways, arterial highways, and other transportation facilities and services. It is intended to improve and enhance Florida's overall transportation system and economic prosperity.

FDOT will need performance measurements to evaluate how well the SIS is meeting its goals. One important measure for the SIS will be travel time reliability, which is a measure of the likelihood that travelers will arrive at their destinations on time. In a previous project (BD545-48), researchers at the University of Florida developed a preliminary model to measure, report, and predict freeway travel time, but a lack of needed Florida highway traffic data limited the model's use. The purpose of this study was to identify potential Florida travel data sources and develop a preliminary model framework that could be used to evaluate arterial roadways.

The researchers determined that the model would need data about traffic speeds, incidents, and weather conditions to be able to predict travel time reliability. They found several systems in development that will be

able to provide data in the future, but none are currently ready for use in the model. The researchers found some sources that could provide useful data, subject to limitations. For example, incident data is available from District Four, although there appear to be some inconsistencies in the reporting of the data for some performance measures. Similarly, weather information is easily available, but its usefulness is limited by the time-consuming analysis that is required to use it in the model.

This study has suggested ways to improve the model and advance time travel estimation practice in Florida. First, the data collection systems should be refined and data archived for travel time reliability estimation, as soon as possible. Second, incident data from District Four could be used as proxy data to extrapolate incident occurrences across the SIS until sufficient data from each of the districts is obtained. Finally, the preliminary framework developed for estimating arterial travel time should be simplified so that it can be incorporated into existing travel time estimation databases and use data typically available from the districts. The model should provide a useful tool for evaluating travel time reliability.

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