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Microsimulation: Department Assessment and Guidance

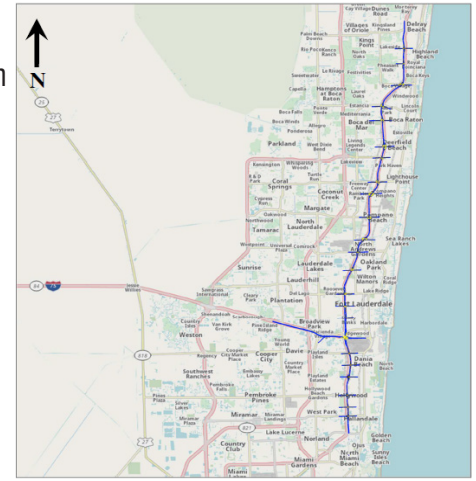
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Current Situation

Big data has become the driving force behind transportation improvements across the country. In Florida, there is an effort to break down transportation system performance data to the second—a process called microsimulation.

Ideas around microsimulation for transportation are mixed. It is viewed by some as time-consuming and resource-intensive. However, when used within a framework and for the appropriate reason, the methodology can offer unique insights into a system's performance now and in the future.

As Florida's transportation system becomes increasingly complex, the need for more detailed and specific guidance for using microsimulation tools becomes more apparent.



The research team used the I-95 freeway corridor in Broward County and Palm Beach County to investigate calibration targets as a case study.

Research Objectives

The goal of this research project was to provide guidance and direction to improve FDOT's microsimulation modeling practice.

Project Activities

The Florida International University team conducted a web-based survey of modelers from around Florida to identify how they apply simulation models and to assess their needs. The team then reviewed FDOT's Traffic Analysis Handbook and, through feedback from the survey, identified areas that were not covered or had limited coverage in the handbook. The team then provided FDOT information that can be used to inform new sections in the manual.

Next, the team evaluated traffic analysis tools/platforms that could potentially meet FDOT's needs, identifying a set of capabilities to compare to the features of each analysis tool. The team then identified FDOT's needs in traffic simulation training and developed workshops that would advance the capabilities of an already existing framework from the Federal Highway Administration.

The study also provided recommendations for an analysis, modeling, and simulation project clearinghouse.

Project Conclusions and Benefits

This project provided guidance and directions to improve FDOT's microsimulation modeling practice. When implemented, the guidance can equip FDOT to make better-informed decisions about the current—and future—performance of Florida's transportation system.

For more information, please see fdot.gov/research.