



Florida Department of Transportation Research

Integrated Corridor Management and Advanced Technologies for Florida
BDK80 977-09

The U.S. Department of Transportation (USDOT) has estimated the costs of congestion at \$200 billion a year in delayed shipments and wasted fuel and 4 billion hours lost by drivers in traffic. New roads alone cannot solve the problem because travel demand is growing at five times the rate of new construction. Better use of existing infrastructure is needed to keep up with demand.

The USDOT Integrated Corridor Management (ICM) initiative employs strategies like high-occupancy vehicle lanes and real-time alternative route recommendations to optimize road use. ICM is an integrated, multimodal approach that seeks to optimize the efficiency of a network of roads rather than focusing only on major roadways.

The Florida Department of Transportation (FDOT) is a national leader in advanced traffic management and traveler information systems, particularly on limited access facilities. This forward-thinking approach has continued with the Transportation System Management and Operations (TSM&O) Program, which seeks to improve communications, coordination, and collaboration among transportation partners. In this project, Florida International University researchers sought to advance the TSM&O goals.

The researchers reviewed state-of-the-art ICM strategies and identified those with potential for use in Florida. Focusing on the extensive literature of the USDOT ICM initiative, researchers identified generic ICM corridor needs and operational strategies to satisfy these needs. To adapt review findings for Florida, the researchers held meetings with partners in the Miami-Dade area, including FDOT Districts 4 and 6, Miami-Dade Transit, Miami-Dade Public Works, and others. A subsequent workshop drew from several transportation and enforcement agencies in South Florida. Technologies and strategies were discussed for potential assessment in the project, and a corridor along I-95 was selected for the case study.



A typical day on I-4 in Orlando. The interstate corridors in Florida are often congested, costing users time and money.

This process selected the highest priority ICM applications for the project to implement and demonstrate: multimodal, multi-facility information sharing; transportation system performance measurement, prediction, and visualization; and decision support tools using multi-source information for coordinated operations.

The researchers developed a Web-based system, the Integrated Regional Information and Decision Support System (IRISDS), as a platform for the application priorities. IRISDS receives data in real time from database systems of FDOT and other agencies, enabling data sharing, archiving, and retrieval. IRISDS integrates other information tools, such as real-time prediction of incident impacts and estimation of diversion levels. The researchers used queuing theory and traffic simulation, both macroscopic and microscopic, to develop methods to extend IRISDS's capabilities.

Through efforts like FDOT's TSM&O, as supported and developed through projects like this one, the efficiency of Florida transportation can keep pace with demand, promising a safer and more productive system.

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For more information, visit <http://www.dot.state.fl.us/research-center>