



## Florida Department of Transportation Research

Development of a Central Data Warehouse (CDW) for Statewide Intelligent Transportation System (ITS) and Transportation Data in Florida  
BD545-93

Most traffic management centers (TMCs) in Florida are operated by SunGuide, a system of hardware and software developed for FDOT. SunGuide creates a daily summary of basic Intelligent Transportation Systems (ITS) freeway traffic volume, speed, occupancy, and travel time data produced by real-time area-wide electronic surveillance methods used to monitor interstate traffic. The methods include microwave radar, video, and electromagnetic inductive loop detectors. While the raw operational data is useful for SunGuide traffic management purposes, archiving the data geographically and storing it in a database allows transportation practitioners to summarize the data and produce a variety of reports useful in the analysis of freeway operations and congestion management.

Researchers at the Transportation Research Center (TRC), University of Florida have developed a central data warehouse (CDW) called the Statewide Transportation Engineering Warehouse for Archived Regional Data (STEWARD). It serves as a repository for ITS data collected at TMCs. The capability to analyze the data in the STEWARD archive supports the development of performance measures and promotes further research into traffic flow and congestion modeling.

STEWARD consists of three components. First, the extraction, transformation, and loading (ETL) process acquires traffic data from the district SunGuide archive files, transforms the files into the STEWARD data format, and loads the files into the STEWARD database. Second, STEWARD archives traffic data, creates traffic reports, and responds to data inquiries from users. Third, the STEWARD website interface (<http://cdwserver.ce.ufl.edu/steward/index.html>)



*An FDOT employee monitors conditions at Florida's Turnpike Enterprise Traffic Monitoring Center*

<http://cdwserver.ce.ufl.edu/steward/index.html>) allows users to choose the source TMC and request specific reports. Users may specify date and time ranges and the detector locations. When a report is displayed, users can download the contents.

The archived data stored in STEWARD is a valuable resource for projects needing freeway operational data. Researchers recommend that the TRC and other Florida research centers should continue to develop research proposals that further the body of knowledge of freeway operations and congestion management. Researchers also recommend that funding should be sought to establish a permanent home for STEWARD, the website should be maintained and a library page created for reports generated from STEWARD data, and data from other SunGuide archive systems be incorporated into the STEWARD database.

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