

Cambridge Systematics, Inc.

Cambridge Systematics (CS) specializes in transportation, dedicated to ensuring that transportation investments deliver the best possible results. By providing innovative policy and planning solutions, objective analysis, and technology applications, we help our clients meet future transportation needs, while improving the performance of existing infrastructure and operations. CS specializes in transportation services and tools and products for local, state, national, and international agencies in the public and private transportation industries.

Operations and Intelligent Transportation Systems

As transportation agencies focus on making better use of today's infrastructure rather than deploying scarce resources to build more, intelligent transportation systems (ITS) become increasingly central to managing transportation operations effectively. CS is a leader in evaluating, developing, and improving operations solutions at the state, regional, and local levels. We have experience with operations policy programs and projects that advance operations; the development and use of technical tools; technology transfer and technical assistance programs; and project evaluation, performance measurement, and process improvements. We have a long heritage of partnership with Federal transportation leaders, including the Federal Highway Administration's (FHWA) Office of Operations and the ITS Joint Program Office, the Federal Transit Administration (FTA), the Federal Motor Carrier Safety Administration (FMCSA), and the Volpe Center. In addition, CS has been providing commercial vehicle operations (CVO) products and management support services to leading public and private sector clients for 20 years.

Project Experience

Florida Statewide ITS Performance Measures

For the Florida Department of Transportation (DOT), CS is developing a statewide performance monitoring program for the DOT's ITS program. This project will provide information to the Florida Transportation Commission's Annual Productivity Monitoring report. CS is defining methodologies that are required to collect data needed to support the selected output and outcome measures from all the Florida DOT districts.

ITS Deployment Analysis System

For the FHWA and Oak Ridge National Laboratory, CS developed and tested the ITS Deployment Analysis System (IDAS), an ITS sketch-planning analysis tool that interfaces with planning data prepared from existing regional travel demand models. IDAS determines the impacts, benefits, and costs of various ITS deployments, and offers the capability for a systematic assessment of ITS with one analysis tool. CS developed a semi-automated interface for IDAS with the Florida Standard Urban Transportation Model Structure (FSUTMS); providing training and technical support to Florida DOT staff; and has used IDAS for projects in Orlando, Jacksonville, and Miami.

iFlorida

For the Florida DOT, CS is conducting a local evaluation and contributing to the FHWA national evaluation to identify the benefits, costs, and lessons learned from the deployment of the Florida Surface Transportation Security and Reliability Information System Model Deployment (iFlorida). CS is evaluating project success in meeting project goals of expanding and integrating existing data collection/monitoring systems to enhance data sharing. In particular, CS will assess the impact of iFlorida related to evacuation planning and 511 traveler information.

Florida DOT District 6 ITS Evaluation

CS, as part of a team, assisted the Florida DOT District 6, in conducting a post-construction operations evaluation of the SunGuide ITS deployments along the I-95 corridor in Miami-Dade County. The evaluation topics included technology assessment, system architecture and scalability, system integration, system functionality, evaluation of both qualitative and quantitative user benefits, public opinion, component obsolescence, cost effectiveness of operations and maintenance, and compliance with contract plans and specifications. The evaluation results were garnered to identify lessons learned and develop recommendations for future system and operational

enhancements. While providing technical expertise on other evaluation areas, the primary focus of CS was to assess public opinion, and identify and quantify the benefits of the ITS deployments to the road users, community, and Florida DOT. Another aspect of this project involved estimation of the impacts of ramp metering along the I-95 corridor prior to deployment. The results of the impacts estimation were used to develop recommendations for deployment prioritization and operations strategization. The analysis was performed using the IDAS model, the results of which were used for further micro-analysis using appropriate microsimulation tools.

Florida DOT District 4 Systems Performance Assessments

For the Florida DOT, CS is developing transportation system performance assessment methodologies using cost-efficient new technologies to collect and develop travel performance or travel behavior data not currently in the Department's current data collection routines. CS is conducting transportation system/subsystem performance analyses to support transportation decision-making for transportation investments, including, but not limited to, corridor selection, Transportation System Management (TSM) strategies, travel demand management programs, multimodal alternatives, ITS strategies, and congestion pricing assessments.

Florida DOT District 1 ITS Guidelines for Metropolitan Planning Organizations (MPOs)

For the Florida DOT, CS, as part of a team, is developing guidelines for metropolitan planning organizations (MPO) to incorporate ITS into the regional transportation planning process.

Florida Commercial Vehicle Information Systems and Networks (CVISN) Business Plan

For a consortium of agencies led by the Florida DOT, CS developed the Florida CVISN Business Plan. The business plan identified opportunities for the application of ITS technologies to CVO in Florida. It defined a series of projects addressing safety information, administrative processes, and roadside operations for implementation over the next few years.

Broward County ITS Intermodal Plan

CS developed an ITS Intermodal Plan for Broward County. The plan focused on the existing ITS infrastructure, planned deployments, and other identified opportunities. It also coordinated closely with the new security program at Port Everglades and the County's Freight Mobility Plan.

Orlando 2025 Long-Range Plan – ITS Element

For METROPLAN ORLANDO, the MPO for the three-county Orlando region, CS developed and evaluated ITS alternatives for the long-range regional transportation plan. The analysis used IDAS to evaluate the benefits and costs of the preferred alternative. The analysis demonstrated the relative benefits of ITS investments as compared to traditional investments, and led to the creation of an operations program for the MPO with annual funding for ITS projects.

First Coast MPO ITS Corridor Study

For the First Coast MPO, CS, as part of a team, participated in the development of the Northeast Florida Regional ITS Plan by demonstrating the benefits of ITS through implementation on a specific corridor. CS used IDAS to analyze ITS alternatives in corridors leading into downtown Jacksonville from the south and east, providing a benefit/cost assessment, and recommended a package of ITS strategies.

I-95 Corridor Coalition Intermodal Strategic Plan

CS, as part of a team, developed a strategic plan for the Intermodal Program track of the I-95 Corridor Coalition, including strategic assessment; challenges and opportunities; mission and vision statements; goals and objectives; models from the United States and abroad; course of action and implementation strategies; organizational framework; and measurement techniques.

I-95 Corridor Coalition Performance Measures

CS, as part of a team, is assisting the I-95 Corridor Coalition in developing operational performance measures in the areas of mobility, safety, and economics.