DEVELOPMENT OF A FLORIDA MODELING PORTAL

PROBLEM STATEMENT

Transportation models are used to forecast travel behavior and patterns, and thus to aid decision makers in developing transportation plans and making investments. Quantity and quality of data are critical to effective modeling. However, data accessibility has been a major and persisting challenge facing transportation modelers. Indeed, it is not unusual for data preparation to take up over 70% of the total modeling effort.

There are at least three major obstacles that make data preparation a tedious and often frustrating process. First, the search for available data is often difficult, especially for less experienced modelers who are not as familiar with the availability of data. Second, data are usually not available in the format needed, and there is a lack of GIS capabilities to perform the necessary spatial data conversion. Third, data are usually located at different locations maintained by different agencies and are often difficult to obtain. One solution to overcoming some of these obstacles is to create a statewide central database system that integrates data from various sources and provide the necessary tools to generate model input data in the required format. In addition to data accessibility issues, the lack of effective means for transportation modelers to share modeling data sets, model outputs, reports, presentations, announcements, newsletters, and other information constitutes an ongoing problem.

OBJECTIVES

The goal of this project is to develop a modeling information portal that meets the data and information needs of the Florida modeling community. Specific objectives included (1) developing a web portal that serves as a gateway to modeling data and information for Florida's transportation modelers; (2) developing a web-based GIS system capable of data visualization, data conversion, and data uploads and downloads; and (3) identifying existing data sources and attributes and integrating them into the GIS system. In addition, this project also includes a special task to develop a new Florida Standard Urban Transportation Model Structure (FSUTMS) "launcher" that works with Cube Voyager.

RESULTS

Researchers developed an information portal named FSUTMSOnline (www.fsutmsonline.net). The portal serves as a central location for the exchange and sharing of information, data, and ideas for transportation modelers in Florida. The portal was developed as a weblog application that allows easy and frequent updates by designated administrators who do not need to be familiar with web programming.

The developed portal includes individual pages for the Model Task Force (MTF), modeling newsletters, training workshops, model documentation, travel data, research projects, technical support, discussion forum, and useful links. Researchers also created pages for individual FSUTMS standard models to allow model coordinators to post model and data files for easy access by transportation

modelers. The system includes a model download permitting process to allow users to make download requests for review and approval by model coordinators. This permitting process is designed to safeguard the use of model files. The portal includes other typical features, such as a mailing list sign-up and quick links to external web pages.

As part of the page for FSUTMS training workshops, researchers included a user-friendly database management system designed to allow designated administrators to manage workshop registrations. The major functions of the system include recording registrations, editing registration information, selecting registrants (when a workshop is over-capacity), generating name lists, keeping attendance records, and notifying registrants.

A centerpiece of the web portal is a GIS application designed to facilitate the maintenance and extraction of data for FSUTMS model inputs. Developed as an ArcGIS Server 9.2 application, it includes data for the following:

- highway, transit, and Transportation Analysis Zone (TAZ) networks
- roadway inventory information from the Roadway Characteristics Inventory (RCI)
- census data at the tract, block group, and block levels
- employment data from InfoUSA
- multiple years of traffic count data from both permanent and portable traffic monitoring stations

In terms of GIS functions, the current version includes zoom-in, zoom-out, pan, full extent, identify, measure, set properties, clear layers, add labels, create thematic map, create charts, search features, setup SQL query, download shapefiles, and view table features. The system also includes a function to convert data from one geographic unit to another, e.g., from Census blockgroup to TAZ.

As part of a special task of this project, a FSUTMS model launcher was developed in Macromedia Flash to allow the user to execute different FSUTMS models. The launcher was integrated into both Cube versions 4.0.1 and 4.1 for FSUTMS and distributed to the FSUTMS users.

BENEFITS

The availability of FSUTMSOnline provides a central location for Florida's transportation modelers to share and exchange data, information, and ideas. The workshop registration database management system makes it easy for FDOT to manage workshop registration records and provide better service to the registrants. The registration-permitting process for model downloads allows FDOT to distribute model data files more easily and efficiently. For the first time, FDOT is providing the transportation modeling community a central location for accessing and analyzing geographic data through the web. In addition, the new FSUTMS launcher provides an easy-to-use, professional-looking interface to execute various FSUTMS planning models. All of these new capabilities should significantly enhance the efficiency and effectiveness of transportation modeling in Florida.

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