

# TBAG

TAMPA BAY APPLICATIONS GROUP

An Open Forum for  
Transportation-Related Issues



March 2004  
Volume 27

## “FROM THE CHAIR”

By: Christopher Hatton, P.E., Kimley-Horn and Associates, Inc.  
2004 Chairman for the Tampa Bay Applications Group

The Tampa Bay Applications Group celebrated the end of another fantastic year at Landry's Seafood House on December 8, 2003. Over 60 transportation professionals and students attended the year-end banquet, which was headlined by FDOT - District Seven Secretary, **Ken Hartmann**. In addition, **Jeff Stevens** provided the surprise “musical question and answer” entertainment for the evening. At least Jeff was fair in his selection of victims!



Ken asks Jeff, “Which do you think had a longer lasting impression, ABBA or the Village People?”

Every person who contributed to the TBAG in 2003 was in the running for a major TBAG Model Applications Award. The awards were divided into three major categories: Best Presentation, Best Workshop and Best Article. The TBAG Board had a difficult time in its selections and we had ties in two categories: Best Article



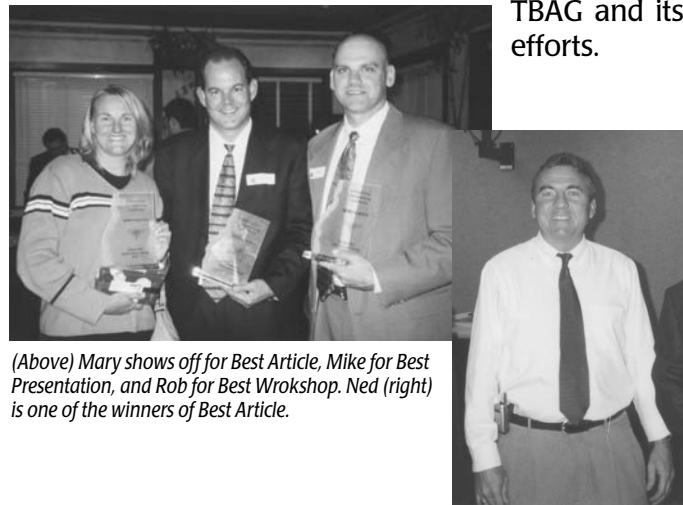
Brian and Mike (left) win for Best Presentation. Steve (above) is also a winner of the Best Presentation Award.



## ATTENTION!!! TBAG Program: March 25, 2004 Details on Page 4

- **Ned Baier** and **Mary Stallings**; and Best Presentation - **Dr. Steve Polzin** and the team of **Brain Smith** and **Michael Crawford**. Best Workshop went to **Rob Cursey**. Each winner was presented with a beautiful glass sculpture engraved with a personal thank you from TBAG. In addition, all of the speakers and authors who contributed throughout the year were presented with a gift of appreciation.

Congratulations once again to all of our very deserving winners and thanks to all who continue to support the TBAG! Our participation continues to grow yearly due to the talent and professional contributions of our volunteers. We are very fortunate to have a transportation community that supports the TBAG and its efforts.



(Above) Mary shows off for Best Article, Mike for Best Presentation, and Rob for Best Wrokshop. Ned (right) is one of the winners of Best Article.

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# A TBRPM Application for the Reconstruction of SR 676 (Causeway Blvd.) Between US 41 and US 301

By: Robert W. Fulp, PE and Phuc Duong, EI (Gray-Calhoun & Associates, Inc.)

The Florida Department of Transportation (FDOT), District 7, recognizes the need to improve mobility between Brandon and the central business district (CBD) of downtown Tampa. Recent and on-going capacity-adding improvements to I-4, SR 60 (Adamo Drive) and the Crosstown Expressway are helping to address traffic congestion along these east-west corridors during the peak periods of travel. Causeway Boulevard (SR 676), however, is also experiencing continued demand as another parallel facility used in making the trips between the CBD and the outlying communities east of Tampa.

In an effort to improve the levels of service along Causeway Boulevard, the FDOT plans to widen it between SR 45 (US 41) and SR 43 (US 301), approximately 3.2 miles, from a two-lane undivided to a four-lane divided roadway. Gray-Calhoun and Associates, Inc. (GCA) and two other firms were selected by the FDOT to prepare a traffic operations study and construction plans for the entire length of the project. The purpose of the traffic study was to identify specific geometric improvements required at key intersections along the corridor (i.e., US 41, 78th Street and US 301). In addition, the study evaluated several alternatives for a possible

grade-separation at the intersection of Causeway Boulevard and US 41.

The following general steps were performed in accordance with FDOT guidelines:

† **Collect traffic data** - Perform 24-hour, 7-day machine counts and 8-hour manual turning movement counts at selected locations.

† **Perform crash analysis** - Plot and analyze three years worth of crash history at key locations.

† **Determine 2025 design year traffic** - Based on the *Tampa Bay Regional Planning Model, Version 4.0*.

† **Perform capacity analysis** - Determine existing and future levels of service at pre-selected locations using HCS 2000.

† **Perform grade-separated analysis** - Simulate and compare grade-separated alternatives for Causeway Boulevard and US 41 using CORSIM software.

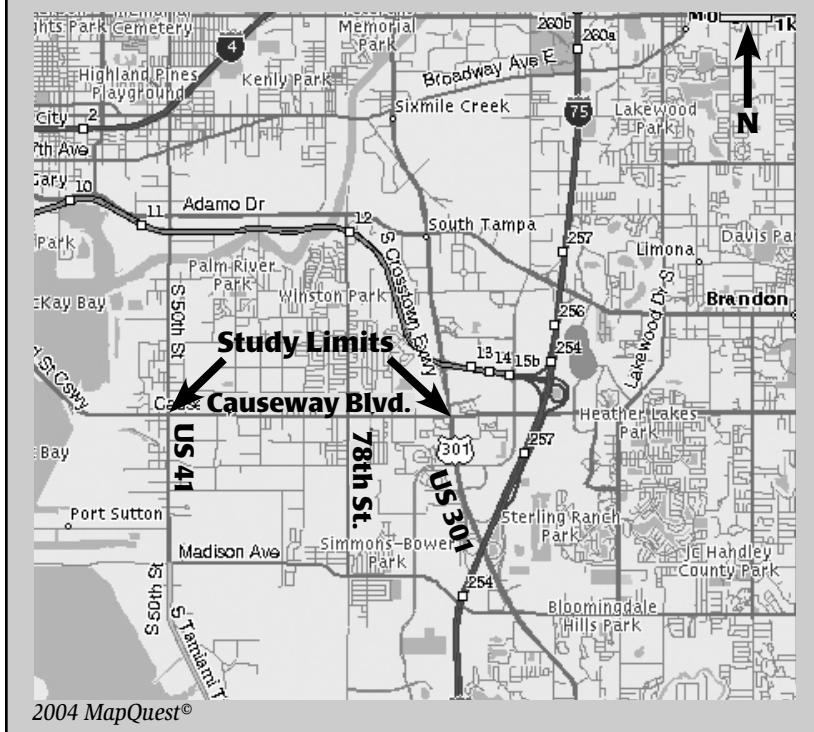
† **Make recommendations** - Suggest necessary improvements for Causeway Boulevard at US 41, 78th Street and US 301 (the signalized intersections).

One of the most important steps in preparing a traffic operations study is the development of the design year traffic volumes. A thorough assessment of current and future conditions is essential because the design year volumes dictate what geometric roadway and intersection improvements are ultimately recommended. The *Tampa Bay Regional Planning Model (TBRPM) Version 4.0* was a tool utilized in forecasting travel demand along Causeway Boulevard. The TBRPM provided the projected demand in the study area and the 2025 design year traffic volumes were developed based upon procedures outlined in the FDOT's *Project Traffic Handbook*.

In utilizing the TBRPM to forecast travel demand in a specific corridor, the traffic

**TBRPM - Continued On Page 5**

## Reconstruction of SR 676 (Causeway Blvd.), Tampa, FL



# Developing Interim Standards and Enhancements for FSUTMS-TransCAD

By: Huiwei Shen, FDOT, Central Office and Ram M. Pendyala, Civil and Environmental Engineering, USF

The Model Task Force is leading the development of interim standards and enhancements for FSUTMS-TransCAD that will ensure the seamless transition of FSUTMS from a Tranplan-based engine to a TransCAD-based engine. The FDOT Central Office staff and Caliper Corporation are assisting with the development and implementation of several different aspects of FSUTMS-TransCAD (a.k.a. new FSUTMS). These include, but are not limited to:

**File Naming Standards:** A set of standard file names is being developed for the new FSUTMS to take advantage of file naming flexibility available in today's software.

**File/Directory Structure:** A default and standard file/directory structure is being established with a view to providing the user an intuitive and user-friendly file management and storage system.

**Model Structure/Logic:** The new FSUTMS will continue to use the standard model structure. Interim standards and enhancements are being developed to accommodate user routines (e.g., time of day modeling, transit modeling) and to update some of the existing procedures in FSUTMS.

**User Interface:** A new standard FSUTMS user interface is being designed for implementation. Sample interfaces are shown below.

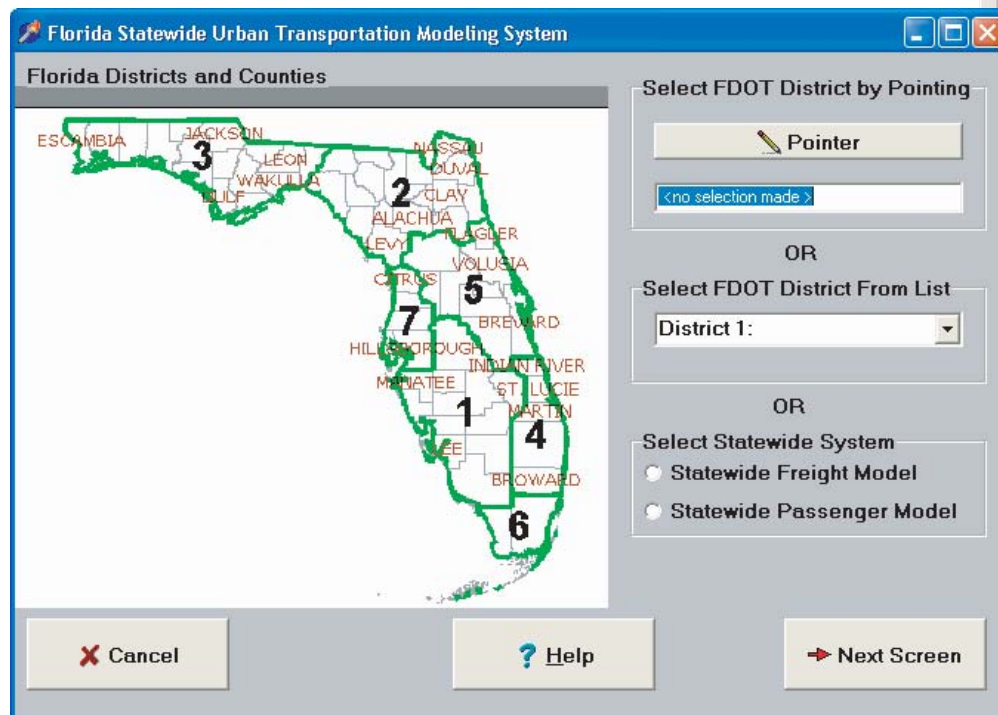
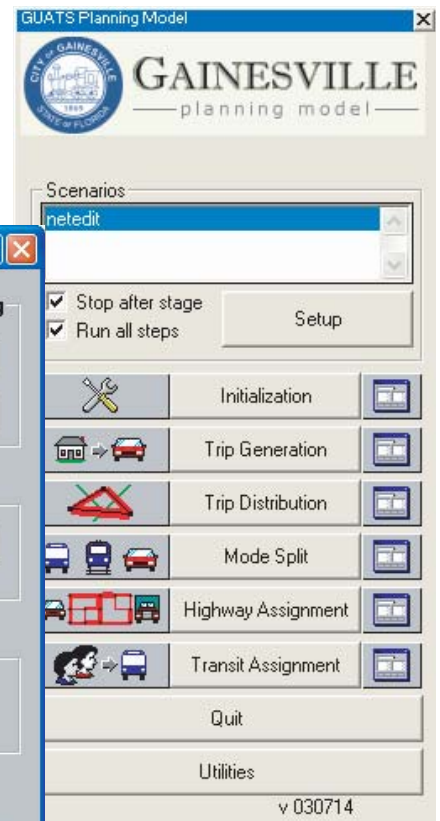
**Default TransCAD Procedures:** TransCAD offers a host of different methods for performing various steps of the modeling process. TransCAD methods/procedures that will be used as default methods within FSUTMS will be identified.

**Update Parameters:** FSUTMS includes a host of model parameters and coefficients that have not necessarily been updated in a long time. The development of interim standards and enhancements for FSUTMS-TransCAD offers an opportunity to update the model parameters and coefficients for the new FSUTMS.

**Input and Output Files:** The input and output files to be used in FSUTMS-TransCAD will be identified and organized in a manner consistent with the file directory structure to provide an intuitive and user-friendly file management system.

**Database Field Names:** Field names are no longer limited in length. Field names in the various FSUTMS databases will be updated to take advantage of this flexibility and to ensure consistency with the database-driven nature of the new FSUTMS.

TransCAD - Continued  
On Page 6



# ATTENTION



## **Tampa Bay Applications Group March 25, 2004**

*FDOT District Seven Office from 12:00 p.m. to 2:00 p.m.  
(Auditorium Opens at 11:30 a.m.)*



## **ENVIRONMENTAL PLANNING & COORDINATION**

### **Raymond Ashe, Kevin Hoefflich and Joanne Hurley, Florida's Turnpike Enterprise A Trip to Paris in Honor of the Suncoast Parkway Project**

Representatives from the Florida's Turnpike Enterprise recently took a trip to Paris to receive the "2003 President's Award for Excellence" for the Suncoast Parkway Project. The International Bridge, Tunnel and Turnpike Association (IBTTA) presented this award for the Suncoast Parkway Aesthetic Design Guidelines; selected by the judges for "setting the standard of excellence" among toll agencies across the world. No other organization in Florida has received this Award!

The Design Guidelines were developed to ensure that the 42-mile Parkway be compatible with the natural environment and surrounding communities. This presentation will address the environmental issues and coordination that took place during design and construction of the project.

### **Rick Adair, FDOT, District 7 and John Hartley, FDOT, District 1 A Summary on Integration of the ETDM Process within the Districts**

The integration of Florida's Efficient Transportation Decision Making (ETDM) process and the use of the Environmental Screening Tool (EST) are in various stages throughout the State. An update on the proposed schedules for implementation by the Metropolitan Planning Organizations within each District will be provided.

### **Alexis Thomas, Geo-Plan and Ruth Roaza, URS An Internet Demonstration of the Environmental Screening Tool Used for ETDM**

The Environmental Screening Tool (EST) is a web-based application that supports Florida's Efficient Transportation Decision Making (ETDM) process. The EST integrates Internet mapping technology, relational database management systems and geographic information systems (GIS). The EST provides analytical and visualization tools that help synthesize and communicate project information for agency use and public education. The application is deployed at the University of Florida in conjunction with the Florida Geographic Data Library, a repository of GIS data gathered from federal, state, and local governments.

The EST has been in production for approximately one year and is currently being used to review major capacity projects on state highways that are planned for the year 2025. This presentation will provide an overview of the EST application and describe how it is used to support transportation decision-making in the state of Florida.

engineer / transportation planner must be aware that the future model input needs to reflect changes in land use and the transportation network for the study area. The Hillsborough County Metropolitan Planning Organization 2025 Long Range Transportation Plan (LRTP) was reviewed for proposed changes, such as the double-decking of the Cross-town Expressway, which is currently underway. For the overall traffic study, changes were made in the coding of corresponding links in the 2025 transportation network, as necessary. The TBRPM was then run to obtain future year model volumes. The model volumes were further adjusted to obtain 2025 design hour traffic volumes using the approved K<sub>30</sub> and D<sub>30</sub> factors.

The HCS analysis of the traffic count data for the existing conditions showed a failing level of service throughout most of the study area. Excessive delay existed at the signalized intersections (i.e., US 41, 78th Street and US 301) during the morning and afternoon peak hours. Review of the historical crash data revealed that a high number of crashes occurred at the signalized intersections. This was probably due to the traffic congestion created by the signal control.

Under the projected 2025 future conditions, a six-lane corridor was required to adequately accommodate the projected traffic. However, Causeway Boulevard between US 41 and US 301 is defined as a Constrained Facility (2025 LRTP) due to physical and /or environmental issues. Therefore, the roadway is limited to a four-lane divided section.

improvements were analyzed within the existing right-of-way in an effort to minimize the project cost and maximize traffic operation efficiency.

The FDOT is considering grade-separation for the intersection of Causeway Boulevard and US 41. Seven alternatives were analyzed using CORSIM. The alternatives were evaluated based on their estimated construction cost and operational efficiency. The operational criterion included delay caused by the heavy critical volumes and the railroad crossings both east and south of the subject intersection. The critical movements at the subject location were the northbound to westbound left-turns during the morning peak periods and the eastbound to southbound right-turns during the evening rush hours. The construction cost criteria was mainly based on the amount of right-of-way needed by each grade-separated model. The results of the grade-separated analysis will be used in developing a Bridge Feasibility Study.

For more information contact **Rob Fulp** at (813) 831-8870 or [rfulp@graycalhoun.com](mailto:rfulp@graycalhoun.com).

## Year 2004 TBAG Program Dates

March 25, 2004  
12:00pm - 2:00pm

May 20, 2004  
12:00pm - 2:00pm

August 26, 2004  
12:00pm - 2:00pm

October 28, 2004  
12:00pm - 2:00pm

**2004 Awards Banquet**  
Date to be Announced

A capacity analysis of the projected traffic volumes was conducted and the necessary improvements such as additional through and auxiliary lanes along with their appropriate dimensions were determined for the signalized intersections. Most of the proposed



## LOCAL SPOTLIGHT

The 83rd Annual Transportation Research Board (TRB) meeting was held in Washington, D.C. this past January. The event provides a forum for sharing transportation planning information with fellow professionals from across the globe. For more information on TRB, please go to the site: [www.TRB.org](http://www.TRB.org).

We would like to congratulate three of our TBAG members for submitting a paper and being selected as presenters at TRB. **Danny Lamb** (FDOT, District 7), **Wade White** (Citilabs, Inc.) and **Dr. Seongsoon Yun** (Gannett Fleming, Inc.) presented on their paper: *Development of an Empirically-Based Area Type Model*. You may contact **Dr. Yun** at [syun@gfnet.com](mailto:syun@gfnet.com) for an abstract of the paper.

*TransCAD continued from Page 3*

**Network Coding Standards:** As the new FSUTMS will include a host of GIS and network editing capabilities, network coding standards will be established. An enhanced base map that can be used for highway and transit network coding will be identified.

**GIS Themes and Templates:** A set of standard GIS themes and templates will be developed for implementation in the new FSUTMS. These will be default and readily-available themes and templates that users can access from a pre-defined menu.

**Roadway Geography:** Efforts will be made to introduce shape files into networks and accurately depict the roadway geography for modeling and graphical display purposes.

**Standard Reports:** A set of standard reports (similar to HEVAL, TEVAL, etc.) will be generated as part of the interim FSUTMS-TransCAD. These standard reports will be defined and offered as default reports within the new system.

The interim standards and enhancements will be completed and made available to the modeling community in late-March or early-April. Model conversions occurring throughout the remainder of this year will use these standards and enhancements to not only take advantage of the capabilities and methods available in the new FSUTMS, but also to ensure consistency and uniformity in the modeling processes for Florida. Questions regarding the development of interim standards and enhancements should be directed to Huiwei Shen, Central Office at [huiwei.shen@dot.state.fl.us](mailto:huiwei.shen@dot.state.fl.us).

The Tampa Bay Applications Group Newsletter is published under contract to the FDOT District Seven Planning Office in Tampa. FSUTMS users and TBAG members contribute all information and material contained in the newsletter. Please contact the editors to submit articles for future issues or to get on the mailing list.

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