

MTF Transit Committee meeting highlights

FTA’s Jim Ryan addresses new federal requirements for “New Starts” transit projects

By Terry Corkery, FDOT Systems Planning Office

Two pressing issues face transit modelers in Florida. First, the Federal Transit Administration (FTA) has instituted new analysis requirements for “New Starts” transit funding applications. Second, the transition to a new FSUTMS powered by TransCAD requires changes in how transit networks are coded—but the transition also provides the opportunity to “start from a clean sheet” and make significant improvements in Florida’s mode choice and transit assignment models.

On April 7-8, 2004, the Florida Model Task Force Transit Committee held a workshop in Tampa to identify specific transit modeling needs and formulate strategies to address the new federal analysis requirements. Over 50 transportation planners and engineers from throughout Florida participated in the two-day workshop. On hand to present transit modeling requirements was Jim Ryan, the workshop’s headline speaker and one of the key reviewers at FTA involved with approving and rating New Starts transit projects.



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Correction:

In the October 2003 issue of *Florida Transportation Modeling*, the headline article (“Mapping the Future—Florida Model Task Force Chooses TransCAD as the New FSUTMS Platform”) stated that the Model Task Force preferred TransCAD for reasons of technical merit. In their consideration of the final choices for the new platform—TransCAD and Cube/Voyager—the task force’s selection committee judged the two packages to be equally proficient on technical abilities, though each had different strengths. The final selection was made on the basis of pricing and support arrangements between FDOT and the proposed vendors.

Jim Ryan addresses new federal requirements for “New Starts” transit projects

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New Starts Projects

The New Starts program provides federal grants to fund major capital investments of fixed-guideway transit projects throughout the United States, including extensions to existing transit systems. New Starts is FTA’s largest discretionary funding program, with a budget of between \$1.2 billion to \$1.5 billion. Every year, Congress decides how to spend the money, considering reports FTA writes on the merits of each of the proposed projects.

Demand for New Starts funding increasingly outpaces the availability of funds, resulting in stiffer competition for funding every year. Consequently, FTA has revised the cost-effectiveness formula used for rating these transit projects. More importantly, FTA has shifted their focus away from just the travel forecast numbers to the modeling process used to arrive at those numbers. FTA planners now require more detailed analysis, allowing them to examine the mode choice model inputs and verify whether the uncertainties contained in the inputs are within acceptable ranges. The revised application procedures require FTA involvement in transit model development, execution of a program called “Summit,” and submission of a three-page report analyzing the Summit outputs.

Maintaining a Level Playing Field

Transit models produce travel forecasts for proposed transit facilities, and these forecasts determine how favorably the benefits of the projects compare to their costs. To ensure these ridership forecasts are accurate, FTA has begun evaluating the mode choice equations to determine whether the model coefficients and constants are justifiable. With the wide-ranging transit modeling procedures used throughout the country, the new strategy is designed to establish a level playing field for all applicants. This new approach will ensure that ridership forecasts—and the resulting predicted benefits—are not unfairly inflated for some projects compared to others. An analysis of 19 completed New Starts projects revealed that only about half of the projects’ actual ridership was within acceptable range of the original travel forecasts. FTA is currently determining whether these discrepancies can be traced to overestimated socio-economic data or to inappropriate mode choice equations.

The new procedures require early communication between all applicants and FTA in the alternatives analysis phase of transit planning. Early federal involvement will allow for changes in modeling procedures without jeopardizing the project schedule.

Summit Program

To aid in transit model evaluation, FTA has developed a computer program called Summit. The program reports user benefits (the changes in travelers’ mobility caused by a project) directly from the local mode choice model. The program also produces summary tables and color-themed maps identifying anomalies in travel patterns inherent in the model. FTA requires applicants to submit the Summit output reports, together with a three-page analysis of Summit results focusing on five areas:

- Problems the MPO is trying to address
- Causes of the problem
- Specific ways the proposed transit project would address the problems
- Reason that the project is preferable to lower-cost options
- Other considerations

Evolving Process

The New Starts requirements for more modeling analysis and federal involvement in model development represent a sea change from the way transit projects were prioritized only a few years ago. To continually improve the accuracy of travel forecasts, the Federal Transit Administration is expected to fine-tune the new application process over the next few years. Soon FTA will add two new chapters to their Alternatives Analysis Guidelines. FTA’s participation in local model development activities is likely to increase in the future. Nearly all transit modeling research in the U.S. has been conducted by state and local governments in the past. But for the first time in decades, the federal government will sponsor major mode choice modeling research. This \$1.2 million of research will begin to add new insight into the acceptable values and transferability of modeling constants and coefficients.

Other Presentations and Group Discussions

- Warren Merrell, Manager of the FDOT Systems Planning Office, discussed the high priority that new FDOT Secretary José Abreu places on public transit.
- Steve Polzin, Transit Research Director at the Center of Urban Transportation Research (CUTR) related the experiences and pitfalls often encountered in transit forecasting.

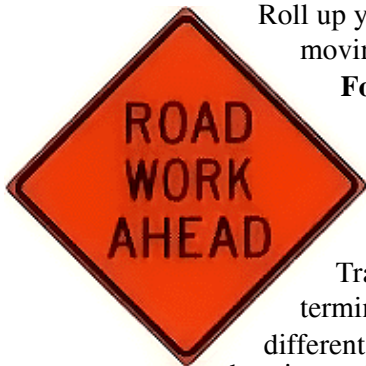
Jim Ryan addresses new federal requirements for “New Starts” transit projects

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- Ike Ubaka of the FDOT Public Transit Office described his office’s ongoing and past research initiatives in transit modeling.
- Jeff Bruggeman of AECOM Consult presented the equations and other technical underpinnings behind quantifying user benefits in the Summit program. The Model Task Force tri-chairs requested that the Systems Planning Office provide training on the Summit program.
- The group conducted detailed round-table discussions on the individual components of Florida’s transit models: the mode choice model, transit networks, transit path building, transit assignment, and transit performance evaluation. The group identified key issues for future consideration under each topic. The consensus of the group was that Florida will remain with generally the same current four-step modeling process in the short run, but over the long term we may adopt other paradigms such as tour-based models.
- Mr. Ryan noted that Florida would benefit from a comprehensive onboard user survey of Miami’s transit system. The survey data could be used to calculate mode choice constants for other proposed fixed guideway systems in Florida.
- Transit Committee Chair Kevin Feldt called for another committee meeting on the morning of May 4, prior to the Model Task Force meeting in Daytona Beach. The meeting’s focus will be to develop a strategy for migrating Florida’s transit models to TransCAD, in light of all the issues discussed at the April 7-8 meeting.

Model Task Force set to tackle FSUTMS-TransCAD standards

By Terry Corkery, FDOT Systems Planning Office



Roll up your sleeves—now comes the hard part. As difficult as the model selection process was, moving Florida’s models to a new platform may be even more daunting. The **Model Task Force meeting to be held May 4-5, 2004**, (see page 6) will be the first chance for the full task force to begin defining the technical details of standardizing FSUTMS within the TransCAD environment.

Nowadays, when modelers use the term “FSUTMS,” they are usually referring to the Tranplan-version of the program, and they call the new software “TransCAD.” So far, that terminology is accurate because the current Florida version of TransCAD doesn’t look much different from the TransCAD used in other parts of the country. But after the Model Task Force does its work, Florida modelers will be using a program they will once again call “FSUTMS.” The

new FSUTMS powered by TransCAD will have its own Windows launcher and interface that Florida modelers can use to call up TransCAD travel forecast programs and GIS map displays, much like the old FSUTMS uses Tranplan and Viper.

A special working group of Systems Planning Office staff and consultants, together with the Model Task Force tri-chairs, has already started to lay the groundwork for standardization within TransCAD. Several members of this group were key participants in the FSUTMS transition from UTPS to Tranplan in the mid-1980s. The working group is in the final stages of preparing a white paper titled *FSUTMS-TransCAD: A Framework for the Development of Interim Standards and Medium-Term Enhancements*. The completed white paper containing detailed technical discussions of migration issues will be posted April 26, 2004, on the Model Task Force website for members to review the week before the meeting.

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Model Task Force Website:
<http://www.dot.state.fl.us/planning/systems/stm/mtf/mtfhome.htm>

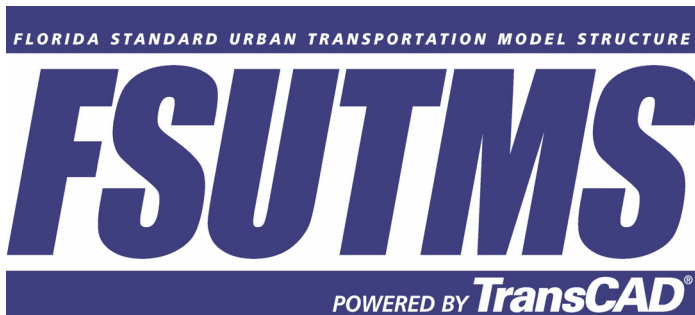
Model Task Force set to tackle FSUTMS-TransCAD standards

WHITE PAPER HIGHLIGHTS

The working group’s white paper will discuss several aspects of moving FSUTMS to the TransCAD environment. As its name suggests, the paper will have two major subject areas. The first subject is developing short-term standards for immediate use to keep all Florida’s MPO models from going in divergent directions as each model is converted. The second subject deals with improving Florida’s modeling procedures to take advantage of the powerful new TransCAD tools available to us, to be implemented most likely during the next round of MPO model updates in three to five years.

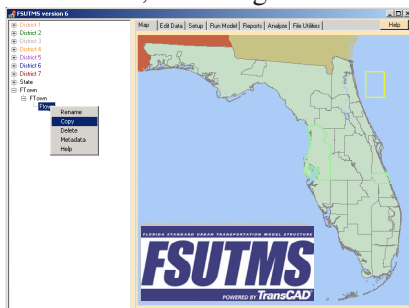
In the near term, to get Florida’s models up and running within TransCAD, the working group established a framework for the initial MPO model conversions. The group developed ideas for a Florida user interface, a new file naming convention, and a structure for organizing input and output files.

User interface and launcher



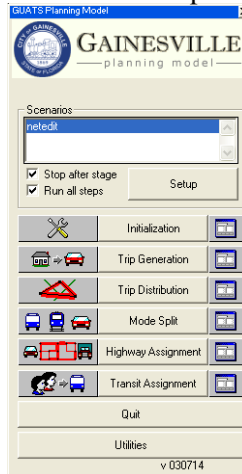
A very basic but important part of the Florida version of TransCAD should be a “splash screen” announcing the name “FSUTMS” after a user launches the program. The working group shaped several ideas for an initial FSUTMS interface screen. After the splash screen is momentarily displayed, the initial interface will contain a map of Florida with all MPO and regional model boundaries displayed. The models previously installed on the user’s computer will be highlighted. A frame on the left side of the screen will list all the models in the state, grouped by FDOT district.

This screen will serve several functions. It will show model coverage areas throughout the state, including areas where models overlap. It indicates clearly which models have been installed on the user’s system. Users would be able to click on either the map or text list to bring up dialog boxes



displaying information about each model, such as whether the model is an official MPO-adopted model, and where the latest model data can be obtained (contact person or website address). If that specific MPO or regional model has previously been installed on the user’s system, a button would be available in the dialog box to launch the model.

After a model is launched, a TransCAD map of the network and the model-specific graphical user interface (GUI) would



be displayed. The GUI allows the user to run all or some of the model steps, and provides some modeling utilities, such as drawing certain themes. The interface also allows data and parameter editing, and provides scenario management tools. Pressing the “Setup” button allows the user to create and modify scenarios (alternatives), and to view and modify model parameters. Values accessed here are stored in a special table, similar to PROFILE.MAS.

File names

FSUTMS has a strong tradition of standard file names. Some of the names are logical and intuitive, and others are legacies from old software and the mainframe. After lengthy discussion, the working group has established a proposed naming convention. This convention attempts to maintain some of the FSUTMS traditions while taking advantage the Windows OS capability to use long file names.

PROPOSED FILE NAMING CONVENTION

The file name will contain four parts: (1) a data description, (2) an alternative description, (3) a “U” or “P” designation, and (4) a suffix.

(1) The data description name will consist of up to 8 characters, with no blanks allowed. There will be a hyphen after the data description.

(2) Next will be the alternative description consisting of three parts: a 3-character study area abbreviation, followed by a hyphen; 2 characters representing the year, followed by a hyphen; and up to 5 characters for the alternative, followed by a hyphen.

Model Task Force set to tackle FSUTMS-TransCAD standards

Proposed 3-Letter Codes for Florida's Modeling Filenames

MPO models

Brevard	BRE
Broward	BRO
Charlotte	CHA
Collier	COL
Fort Walton Beach	FWB
Gainesville	GVL
Indian River	IND
Jacksonville	JAX
Lee	LEE
Marion	OCA
(not MAR, which would be confused with Martin)	
Martin	MRT
Miami-Dade	MIA
Orlando	ORL
Palm Beach	PBC
Panama City	PAN
Pensacola	PEN
Polk	PLK
Sarasota/Manatee	SMA
St. Lucie	STL
Tallahassee	TLH
Tampa Bay	TBY
Volusia	VOL
(or DAB, depending on MPO's preference)	

Regional Models

Lee/Collier	LCL
NERPM	NER
SERPM	SER
Treasure Coast	TRE
SMATS/Charlotte	SMC
D5 Central Florida	CFR
Statewide Model	SWM
Florida Freight Model	FRE

(3) Next will be either a "U" or "P" character to designate whether the file is user-supplied (U) or program-generated (P), followed by a period. This designation will help users to identify immediately all the data files necessary to submit a model run, similar to the current convention of using "YYA" or "Ayy" suffixes.

(4) The 3-character suffix specified by TransCAD program requirements will conclude the file name.

Example: **tripgen1-mia-01-a4hov-u.dbd**

(Note: file names are not case-sensitive)

Data description names must still be drafted, but the Systems Planning Office has developed a proposed set of three-letter abbreviations for Florida's MPO and regional models (see sidebar).

Directory structure and scenario management

In the recommended directory structure, there would be a separate directory for each alternative model run, or scenario. There would be four subdirectories under each directory:

INPUT: This folder would include all externally supplied input files, such as network and zone data and model parameter files, such as trip rates or mode choice model parameters. This would be a complete set of the files needed to run the scenario.

TEMP: This folder would include files generated by the model program that would not be permanently saved (for example, skim matrices). This directory would remain accessible throughout the time when the alternative is being analyzed and validated but could be deleted thereafter to save storage space.

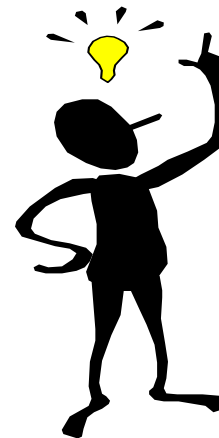
OUTPUT: This folder would include all output files that would be permanently saved (e.g., assigned highway volumes and speeds, and transit boardings). Any data needed for subsequent analyses, such as air quality, would be stored here.

REPORT: This folder would include any reports generated using the model results.

Other topics

The working group's white paper will address several other topics, mostly medium-term model enhancement issues:

- Model structure and logic
- TransCAD procedures to be used as default methods
- Model parameters
- Input and output files
- Database field names
- Network coding standards
- GIS themes and templates
- Roadway geography
- Standard reports



At the May 4-5 meeting, the Model Task Force will be making many important decisions that will shape FSUTMS for years to come. To help ensure everyone's voice will be heard, the meeting will break out into small discussion groups. Please review the TransCAD migration white paper after it is posted on the Internet April 26, and make plans to attend this important meeting.

You are invited to participate at the
Florida Model Task Force Meeting
May 4 - 5, 2004

May 4, 2004	8:00 AM - 9:00 AM	Distrib Committee
May 4, 2004	9:00 AM - 12:00 PM	Transit Committee
May 4, 2004	1:00 PM - 5:30 PM	Full Model Task Force
May 5, 2004	8:30 AM - 4:45 PM	Full Model Task Force

Model Task Force discussions will focus on the FSUTMS-TransCAD transition.

Please make arrangements to attend this important meeting.

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To help us with planning accommodations, please let us know if you will attend by e-mailing
 Sandy Colson at : sandy.colson@dot.state.fl.us.

FSUTMS Users' Group News

The next meeting for the **Northeast Florida Transportation Applications Forum** is set for Thursday **May 20, 2004**. The Applications Forum will start meeting at the new First Coast MPO location on 1022 Prudential Drive. The luncheon meetings will be held from 12:00 PM to 2:00 PM. Topics that will be discussed at the meeting are the application of the NERPM in local project planning and the latest decisions made at the MTF meeting. For additional information, please contact [Karen Taulbee \(904\)360-5652](mailto:Karen.Taulbee@dot.state.fl.us)

The **Tampa Bay Applications Group** will hold its next meeting on **May 20, 2004**. The meeting will be a workshop. This brown-bag lunch workshop will be held from 12:00 PM to 2:00 PM at the FDOT-District 7 office. For more information, please contact [Danny Lamb \(813\) 975-6437](mailto:Danny.Lamb@dot.state.fl.us).

The **Southwest Florida Users' Group** users' group meetings are held at the Charlotte County Airport (2800 A-6 Airport Rd., Punta Gorda, FL). For additional information about the group, please contact [Jim Baxter \(863\) 519-2562](mailto:Jim.Baxter@dot.state.fl.us)

The **Northwest Florida Users' Group** will be holding their next meeting in **May**. The meetings are held at FDOT-District 3 "Design Conference room." For additional information, please contact [Craig Gavin at \(850\) 638-0205](mailto:Craig.Gavin@dot.state.fl.us).



The **Central Florida Users' Group** meetings are held at FDOT District 5 Orlando Urban Office. The next meeting has been scheduled for **April 27, 2004**. For additional information about the group, please contact [Dawn Tuten \(407\) 482-7879](mailto:Dawn.Tuten@dot.state.fl.us)

The **Southeast Florida Users' Group** next meeting will take place on **May 20, 2004**. The topics will be: decisions made at the MTF meeting and the TransCAD conversion of the Broward Model. The meeting will be held at 9:30 AM at the FDOT-District 4 "Old Auditorium." For additional information, please contact [Phil Steinmiller \(305\) 377-5896](mailto:Phil.Steinmiller@dot.state.fl.us)

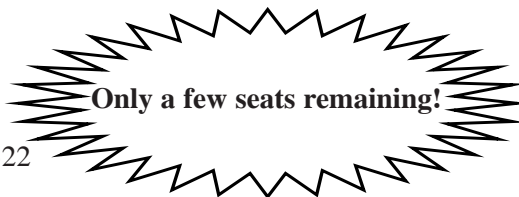
Workshop Schedule

FSUTMS/TransCAD Workshop

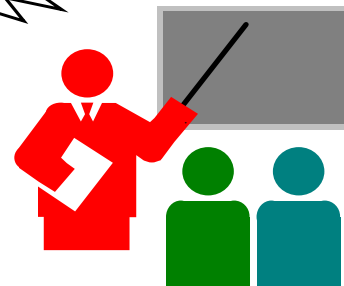
Hotel: Hilton Fort Lauderdale/Sunrise
 Dates: May 10-14, 2004
 Rate: \$79.00 Single/Double
 Address: 3003 North University Drive Sunrise, FL 33322
 Phone: 954.748.7000 (Reservations)
 Fax: 954.747.9593

Starting Time: Monday 1:00 PM
Ending Time: Friday, 12:00 Noon

Res. Deadline: April 26, 2004
 Instructor(s): Caliper Corporation



FY 2004 - 05
**WORKSHOP SCHEDULE
 UNDER DEVELOPMENT**



Registration can be completed on-line at: www.dot.state.fl.us/planning click on "Training" and "Modeling Workshops." **Be sure to notify us if you are a P.E. needing professional development hour credits.**

FSUTMS/Tranplan Basic Workshop now available online!

As FSUTMS transitions to the TransCAD environment, the demand for TransCAD training has been enormous. In response, all the basic-level modeling workshops have been in TransCAD. But realizing it may take some time for all MPOs to move to TransCAD, the FDOT Systems Planning Office has created an interactive program presenting the Tranplan-version of the FSUTMS Basic Workshop. FDOT, in partnership with Florida International University's Lehman Center for Transportation Research, has produced this computer-based training (CBT) program for free distribution.

The CBT was developed entirely on Macromedia Flash, complete with detailed text descriptions of FSUTMS modeling procedures and steps; hyperlinks for websites, emails, and definitions; video clips demonstrating program steps; voice narration for text description; and quizzes and exercises with instant answer checking. To download the program or request a CD copy by mail, please visit the CBT distribution web site: <http://www.eng.fiu.edu/lctr/fsutmscbt.htm>

For more information, call FIU project manager Albert Gan at 305-348-3116, or FDOT project manager Terry Corkery at 850-414-4903.

Personnel Note:

Warren Merrell, FDOT Systems Planning Office Manager, has named **Huiwei Shen to fill the role of Systems Modeling Administrator**. Bob McCullough had previously served in the position. Ms. Shen was appointed to cover Mr. McCullough's duties on an interim basis after Mr. McCullough's retirement in October 2003. Huiwei has been the primary coordinator of Model Task Force activities for several years and will continue to work with the task force's tri-chairs and membership in her new role. Please welcome Huiwei to her new position as she faces the exciting challenges of transitioning to the new FSUTMS.

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