

# Florida Transportation Modeling Newsletter

October 2009

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### MTF Membership Develops Model Improvement Priorities

By: FDOT Systems Planning Office

The Model Task Force tri-chairs and committee chairs met in December 2008 and developed a list of 50 important areas for improving modeling in Florida. Task force leaders voted on which of the ideas were most important to address immediate needs, selecting a list of 11 short-term priorities to target for completion before the next LRTP cycle begins in 2011. To determine the highest priorities within this list of 11, FDOT conducted a web survey of the MTF membership in May 2009.

Table 1 shows a summary of the five highest priorities for the MTF members who responded to the survey. Out of the approximately 200 people who were sent invitations to participate, 45 responded to the survey.

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**Florida Model Task Force  
November 9-10, 2009  
See Page 3 for more details**

**Table 1 – Top Five Priorities by Market Segment**

RANK	PUBLIC SECTOR	PRIVATE SECTOR
1	Land use and transportation model integration	Incorporate time-of-day modeling into the FSUTMS framework
2	Incorporate time-of-day modeling into the FSUTMS framework	Advanced toll modeling addressing congestion pricing and HOT-lane issues
3	Develop standards for transit data collection (surveys and counts) to meet FTA New Starts requirements	Review and post process National Household Travel Survey (NHTS) data for use in the next LRTP update cycle and Activity Based Models (ABMs)
4	Development of model application; and post-processing tools for air quality and ITS evaluation in the FSUTMS framework	Land use and transportation model integration
5	Review and post process National Household Travel Survey (NHTS) data for use in the next LRTP update cycle and Activity Based Models (ABMs)	Transportation networks (establish new standards based on new Cube GIS geodatabase framework, etc.)

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Of the 45, 17 were from the public sector; 27 were from the private sector; and one respondent was from academia.

As an outcome of this survey, Florida DOT is reviewing scopes for:

- Incorporating time-of-day modeling into the FSUTMS framework;
- Advanced toll modeling addressing congestion pricing and HOT-lane issues; and
- Land use and transportation model integration.

Consultants for the above three tasks have been identified and work will begin after the MTF meeting in November. Work is already underway for the remaining top priorities via existing FDOT contracts. Preliminary results of some of these projects may be available in time for the November 9-10, 2009 MTF meeting.

## National Household Travel Survey Data Available Soon!

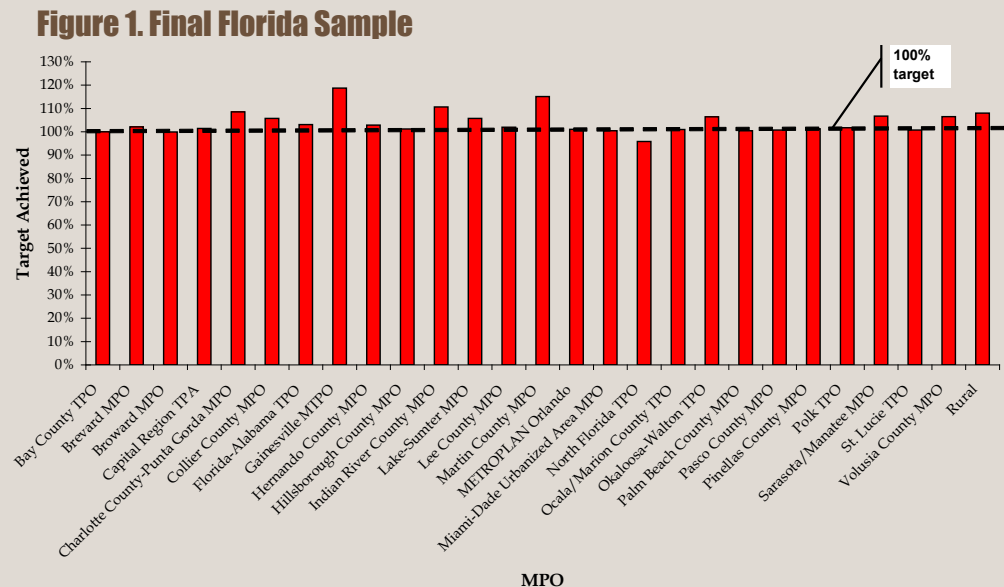
By: FDOT Systems Planning Office

NHTS consultants performed data collection for the nationwide survey from April 2008 to May 2009. The data collection process used a list-assisted random digit dialing (RDD) sample followed by computer-aided telephone interviews (CATI). The data collection process consisted of first contacting and recruiting households with an advance letter and a \$5 incentive. Households agreeing to participate were mailed a travel diary packet that specified the day for recording all travel by household members aged five years or older. Interviewers made reminder calls before the travel day, and retrieved information from household members via a telephone interview within a week of the travel date. Proxy interviews were conducted for children between five to 13 years old and for 14- and 15-year-olds, unless their parents requested in-person interviews. Interviewers geocoded location information during the interview process using online geocoding. On average, recruitment interviews took 10 minutes and retrieval interviews took 18 minutes. A complete household interview required 50 percent of all adult household members, with non-responding household members accounted for in the weights. Figure 1 shows the final Florida sample by MPO, which shows almost all

MPOs achieved or exceeded 100 percent of their target. The data deliverables expected by the end of October include:

- Questionnaire
- Code Book
- Data Dictionary
- Copies of Field documents
- User's Guide ( Spring 2010)
- Examples of Data Uses
- Location File (Geo-coded)
- Structure and Use of the Main Data Files (4)
  - Household
  - Person
  - Vehicle
  - DayTrip

Florida DOT Central Office will process and perform quality checks on the data before releasing it to the Districts and MPOs.



## New Ozone Standards Possible: More Counties May Require Air Quality Analysis

By: FDOT Systems Planning Office

Results from the Model Task Force priorities survey indicated that planning for ozone nonattainment is a high priority for metropolitan planning organizations (MPOs) in Florida. Consequently, air quality will be a major focus of the November 2009 Model Task Force (MTF) meeting. In the June 2009 modeling newsletter, the article entitled "Air Quality Analysis Returns to Florida" discussed the new ozone standards being released by the U.S. Environmental Protection Agency (EPA), its impact on Florida MPOs, and the development of a new air quality postprocessor within FSUTMS/Cube Voyager by the Florida Department of Transportation (FDOT), Systems Planning Office.

The Systems Planning Office has made significant progress on the air quality postprocessor and will demonstrate the tool at the MTF meeting. The U.S. EPA announced recently that ozone standards may be decreased further (making them more stringent), which could result in the designation of even more ozone nonattainment areas in Florida. As a result of the new standards, the U.S. EPA will delay designation of new ozone nonattainment areas until August 2011 with conformity determinations due by August 2012. The Florida Department of Environmental Protection (DEP) will be providing an update on the new standards, schedule, and potentially impacted areas at the MTF meeting.

### Florida Model Task Force Agenda

**November 9-10, 2009 - Orlando, FL**

The Florida Model Task Force (MTF) establishes policy directions and procedural guidelines for transportation modeling in Florida using the Florida Standard Model, FSUTMS. Voting members of the MTF consist of representatives from twenty-six MPOs, eight FDOT districts, and one representative for each of the following: Florida transit agencies, six FSUTMS users' groups, the Federal Highway Administration, the Florida Department of Community Affairs, and the Florida Department of Environmental Protection. In addition to these voting members, transportation professionals throughout the state of Florida participate in MTF discussions and technical committee activities as non-voting members.

Please register to attend on FSUTMSONLINE and, if necessary, make hotel reservations:  
Embassy Suites-Int'l Drive/Jamaican Court  
8250 Jamaican Court  
Orlando, FL 32819  
Hotel Phone: 1-800-327-9797  
Room Rate: \$99 (Block Group Code: "MTF")  
Hotel Reservation Deadline: October 23, 2009

**Monday, November 9, 2009**

**8:30 AM - 12:00 PM: Committee Meetings**

**1:15 PM - 5:00 PM: Discussions**

Meeting Objectives

Committee Updates/Current Issues

State and Federal Legislation Affecting Florida Modeling

Current Status of FSUTMS Practice

Citilabs Voyager Update

**Tuesday, November 10, 2009**

**8:30 AM - 12:00 PM**

**Task Force Priorities: Survey Results**

Land Use Modeling

Time-of-Day Modeling

Advanced Toll Modeling

Air Quality Analysis

NHTS Data Analysis

**1:00 PM - 5:00 PM**

**TRB SHRP2-C10 Project Briefing and Discussion**

North Florida TPO Advanced Travel

Demand Model

Future of FSUTMS: A Long-Term Perspective

MTF Administration

Recognition of Past and Present Members

Future Leadership of the Model Task Force

# TBEST Application in Small Starts Projects

By: Daniel Harris, FDOT Public Transit Office

## Introduction

As part of its broader Transit Model Improvement Program, the Florida Department of Transportation (FDOT), Public Transit Office (PTO) has spearheaded the development of transit demand forecasting models and transit systems planning tools for a wide variety of applications. The culminating effort of this program is Transit Boardings Estimation and Simulation Tool (TBEST). With TBEST having been adopted by FDOT as the supported methodology for providing ridership forecasts for Transit Development Plans, the FDOT now envisions a wider role for the TBEST model in support of various planning studies, in particular FTA New Starts and Small Starts projects. To this end, FDOT will develop a comprehensive assessment of the TBEST model that will focus on the consistency of FTA data requirements and TBEST model output. When the assessment is completed, FDOT will provide guidelines and recommendations on TBEST model development efforts to support the data required by FTA.

## TBEST Model Premise

TBEST incorporates a comprehensive transit analysis and ridership forecasting model that is capable of simulating travel demand at the individual stop level while accounting for network connectivity, spatial and temporal accessibility, time-of-day variations, and route/stop competition and complementary effects. The TBEST approach to transit ridership forecasting recognizes that numerous factors affect stop-level boardings. The methodology underlying TBEST has been developed to ensure that the final model is sensitive to a wide range of socio-economic and supply attributes. In particular, the following features of TBEST are noteworthy:

- Distinction Between Direct and Transfer Boardings
- Time-of-day-based Analysis
- Walk Access to Transit (Socio-economic Characteristics)
- Network Connectivity and Accessibility
- Competing and Complementary System Effects
- ArcGIS-based Software Tool
- Performance Measures
- Sensitivity to a Host of Planning Factors

## FTA “Starts” Program

FDOT Central Office recently initiated a project to investigate the TBEST application in the Federal Transit Administration (FTA) “Starts” program. New Starts projects are large transit planning efforts, commonly involving potential rail corridors, with a total cost over \$250 million. Because New Starts projects involve larger metropolitan areas, they require the application of a travel demand systems planning model to estimate local ridership and mobility improvements for selected alternatives.

Small Starts projects, on the other hand, require a total cost of less than \$250 million and do not have a specifically defined model for project application. Small Starts projects typically involve smaller scale transit

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projects like Bus Rapid Transit (BRT), streetcars, and commuter rail improvements. Due to the efficiency and relatively low costs associated with BRT systems, various cities across the United States are seriously considering this option as an effective way of meeting transit demand.

Very Small Starts projects have a total cost limit of \$50 million and also lack an established model for alternatives analysis. In the case of specific Very Small Starts projects where the transit development cost is particularly low, the application of a forecasting tool may not be required.

The interest in applying TBEST is increasingly strong for analysis in Small Starts and Very Small Starts projects because TBEST is a straightforward, short-term (0-10 year) model. TBEST provides the immediate results and cost efficiency to local government and transit agencies that cannot be met by long-range travel demand models, which often require extensive time, effort, and funding.

### TBEST Support for FTA “Starts” Programs

As no guidelines exist for Small and Very Small Starts forecast modeling specific to the state of Florida, FDOT’s project will be centered on the ability to incorporate TBEST into Small and Very Small Starts project

planning efforts. The initial task of the project will outline the existing FTA requirements for all Small Starts and Very Small Starts submittals and research current projects in the state of Florida to determine all modeling technologies currently in use. The purpose of this research is to develop modeling guidelines for Small and Very Small Starts. The guidelines will provide a comprehensive understanding of all technical, analytical and administrative information required for the FTA program.

The current input and output data used in TBEST will then be examined to create a detailed list of TBEST’s modeling abilities. FTA Small Starts and Very Small Starts requirements will be independently compared with TBEST model results to match the criteria for both project types. Where TBEST output currently supports FTA requirements, FDOT will document the methodology to produce the data and also any post-processing necessary to compile the data in FTA-required formats. Where TBEST output does not currently support FTA requirements, an initial methodology on how this data could be generated with customizations to the TBEST model will be provided. Led by project manager Daniel Harris, the FDOT Public Transit Office and Systems Planning Office located in Tallahassee will provide guidance and assistance throughout this effort to enhance TBEST for use in FTA Small Starts and Very Small Starts throughout the state of Florida.

Further information may be found at [www.tbest.org](http://www.tbest.org) and through the FDOT Public Transit Office website: [www.dot.state.fl.us/transit](http://www.dot.state.fl.us/transit).

### FLORIDA TRANSPORTATION MODELING NEWSLETTER

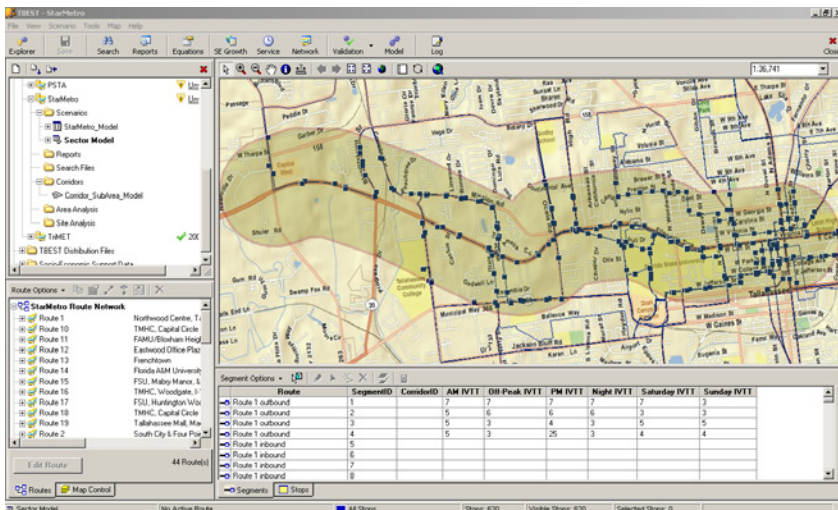
is published under contract to the FDOT Systems Planning Office in Tallahassee. All information and materials contained in the newsletter are contributed by FSUTMS users and Model Task Force members. Please contact the editors to submit articles for future issues or to get on the mailing list.

#### COEDITOR: TERENCE CORKERY

FDOT Systems Planning Office  
Mail Station 19  
605 Suwannee Street  
Tallahassee, Florida 32399-0450  
(850) 414-4903 • FAX (850) 414-4876  
[terrence.corkery@dot.state.fl.us](mailto:terrence.corkery@dot.state.fl.us)

#### COEDITOR: KASEY CURSEY

Gannett Fleming, Inc  
WestLake Corporate Center  
9119 Corporate Lake Drive, Suite 150  
Tampa, Florida 33634-6323  
(813) 882-4366 • FAX (813) 884-4609  
[kcusey@gfnet.com](mailto:kcusey@gfnet.com)



## Mobility Fees and Reducing Miles Traveled

By: John H. Taylor, FDOT Systems Planning Office

Section 13 of the Community Renewal Act of 2009 requires the Florida Departments of Community Affairs and Transportation to submit to the Florida Legislature a Joint Report on Mobility Fees. A Mobility Fee is a type of impact fee being considered as a possible replacement for transportation concurrency, as it is currently being implemented.

The Community Renewal Act identified several concerns with the existing system of concurrency rules and regulations. Specific concerns included complexity; jurisdictional inequities; lack of uniformity; narrow focus on roadways; and possible promotion of urban sprawl. The Act requires a system to be considered to improve mobility (with a multimodal perspective); pay for the impacts of new development; promote compact, mixed-use energy efficient development; and be “mode-neutral.”

A Mobility Fee Study is underway. It is anticipated the study will address the concepts outlined below:

- **Fee Application** – The fee would be applied locally at the municipal or county level, however the fee would be based on the transportation needs of the surrounding county (at a minimum).
- **Mobility Plan** – A plan linking transportation, land use, and multimodal considerations. Features of the Mobility Plan could include:

- Transportation improvements phased to reflect desired local growth patterns
- Transportation system costs quantified
- Development of multimodal applications
- Future system demand quantified by vehicle-miles, person-miles or other measures of transportation use.
- **Mobility Fee Development** – The fee would mitigate impacts to improvements in the Plan and be charged to all new developments, not just developments “tripping” a certain level of service standard. Key aspects include:
  - The fee would be based on planned transportation costs, minus anticipated revenue from other sources, such as gas taxes.
  - The fee would be “improvement-based” (portion of all needed improvements) or “consumption-based” (portion of the costs of improving vehicle miles of roadways).
  - The fee would be distributed fairly to all transportation entities (including transit agencies, counties, and FDOT, which is in contrast to many local impact fees that stay with local governments.

A report will be submitted to the Legislature by December 1, 2009, and will include recommendations for implementation, an economic analysis, and proposed changes to the legislation. For more information on the study, you may contact John. H. Taylor at [john.taylor@dot.state.fl.us](mailto:john.taylor@dot.state.fl.us).

## TDP and TBEST TRAINING

The Florida Department of Transportation is offering Transit Development Plan (TDP) and Transit Boarding and Estimation Simulation Tool (TBEST) training courses. The courses are designed to guide professionals in the preparation of TDPs and the operation of the TBEST tool for use in TDP development. There is no charge for registration.

### When and Where is a Workshop?

A one-day TBEST training course is scheduled for November 10, 2009 in Orlando. For this workshop, please contact: Karen Adamson at [Karen.Adamson@dot.state.fl.us](mailto:Karen.Adamson@dot.state.fl.us).

A workshop is planned for early December in Fort Myers; date to be announced. TDP and TBEST Courses are also planned for the spring of 2010 in northwest and southeast Florida.

Updates for courses can be found at the Planfortransit website at [www.planfortransit.com](http://www.planfortransit.com).

For additional information regarding transit topics, please contact Diane Quigley at [diane.quigley@dot.state.fl.us](mailto:diane.quigley@dot.state.fl.us).

### **The Panhandle Transportation Applications and FSUTMS Users' Group**

Resides in the Panhandle of Northwest Florida. Sixteen counties are represented, including four MPO/TPO urban areas and two planning councils. Meetings, when scheduled, are usually held on the same day as the quarterly MPO meetings and are held at the Washington County Public Library, 1444 Jackson Avenue (U.S. Hwy. 90), Chipley, FL from 1:30 p.m. to 3:00 p.m. A notice will be sent to members prior to users' group meetings. For additional information, please contact Linda Little by email: [linda.little@dot.state.fl.us](mailto:linda.little@dot.state.fl.us). No meetings are scheduled at this time.

### **The Northeast Florida Transportation Applications Forum**

Jointly organized by the FDOT, District 2 Planning Office and the North Florida Transportation Planning Organization (TPO). The meetings are held at the North Florida TPO Boardroom at 1022 Prudential Drive in downtown Jacksonville. The meetings are open to the public and private sector. Professionals are encouraged to either bring their own lunch or order pizza by the slice. For additional information concerning the Forum, please contact Milton Locklear by email: [milton.locklear@dot.state.fl.us](mailto:milton.locklear@dot.state.fl.us). Proposed 2010 meeting dates:

Thursday May 27, 2010

Thursday, September 30, 2010

### **The Southwest Florida Users' Group**

Meets at the Charlotte County-Punta Gorda MPO, 1105 Taylor Road, Suite G, Punta Gorda. For additional information, please contact Jim Baxter at (863) 519-2562. No meetings are scheduled at this time.

### **The Tampa Bay Applications Group (TBAG)**

A transportation planning users' group which meets quarterly to hear speakers address technical issues on travel demand modeling and project applications. Previous meeting topics, newsletters and presentations are available on the [www.tbta.com](http://www.tbta.com) website under TBAG Archives. The meetings are brown bag and are held at the Florida Department of Transportation, District 7 Office, 11201 N. McKinley Drive, Tampa, Florida, 33612 from 12:00 p.m. to 2:00 p.m.

The meetings are free and open to all transportation planning professionals. If you are interested in receiving meeting notices, the TBAG newsletter and other users' group information, please contact Danny Lamb by email: [daniel.lamb@dot.state.fl.us](mailto:daniel.lamb@dot.state.fl.us). Scheduled meeting dates:

Thursday, October 29, 2009

Thursday, December 3, 2009

### **Southeast Florida FSUTMS Users' Group**

Promotes understanding and proper application of FSUTMS to the solution of transportation planning and engineering problems. The goal of the group is to enhance the accuracy and reliability of local travel demand models. Membership shall be granted any time during the year to interested individuals involved in FSUTMS applications. General membership meetings will be held quarterly. Special meetings may be held at such other times as considered necessary by the members. Meetings are tentatively scheduled to be held at the FDOT-D4 Headquarter first floor Auditorium from 9:30 AM to noon. For additional information, please contact Derek Miura at FDOT District 4 at (954) 777-4653. Scheduled meeting date:

Friday, December 4, 2009

### **The Central Florida Transportation Planning Group**

Meets quarterly to provide presentations on travel demand modeling, transportation planning, and growth management topics. The meetings are brown bag and all are welcome. The meetings are held at the FDOT, District 5 Urban Office, Lake Apopka Conference Room, 133 South Semoran Boulevard, Orlando, Florida 32807 from 12:00 p.m. 2:00 p.m. For additional information, please contact Betty McKee by email: [betty.mckee@dot.state.fl.us](mailto:betty.mckee@dot.state.fl.us). Scheduled meeting date:

Thursday, November 19, 2009

# Users' Groups