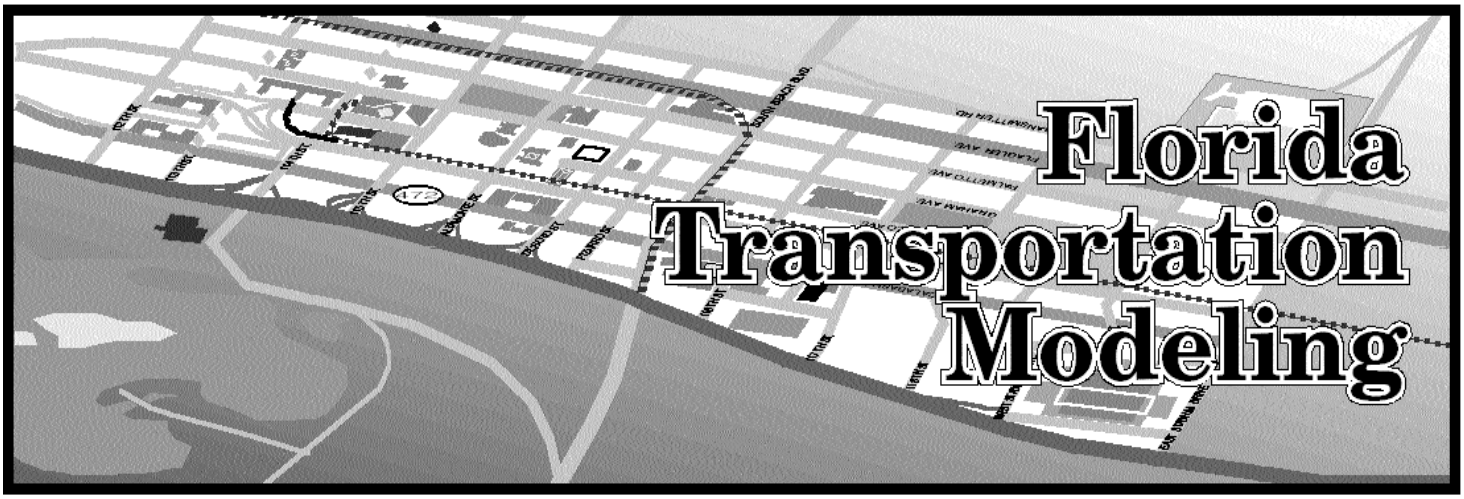

Volume 6 February 1998

On-line FSUTMS manual to be released in April

by Terrence Corkery, AICP, FDOT Systems Planning Office

In this issue...

The Systems Planning Office is readying the FSUTMS on-line manual for an interim release due out during April 1998. In keeping current with the latest technology, the manual will be released in electronic format, on CD-ROM. This format will aid in distributing and updating the documentation set, which will be a series of fifteen technical reports, each documenting a separate FSUTMS module. This format also provides users with several powerful research tools. Electronic searches for take users directly to words and phrases answering specific questions. "Hypertext" allows users to click on highlighted words to see pop-up definition boxes or jump to related discussion in other parts of the manual.

Draft technical reports for all fifteen sections of the documentation have been completed and are being translated into a format suitable for electronic viewing. These draft technical reports will make up the main part of the April release. Also on the CD will be the Acrobat reader program for viewing the files as well as the Model Update Task Reports (A-J) produced in the early 1980s.

It is anticipated that the manual will be distributed to all users on the *Florida Transportation Modeling* newsletter mailing list. Several dozen extra copies will also be furnished to the district modeling coordinators. It will be termed an "interim" release because the draft technical reports will eventually be converted to operational manuals with more examples and illustrations geared to new users.

FSUTMS Version 5.3 nears completion

by Harry Gramling, FDOT Systems Planning Office

Final testing of the next version of FSUTMS is being conducted by the Systems Planning Office and the Urban Analysis Group. The most significant change is that users will be able to specify CONFAC and UROAD factors by facility type. Among the other changes:

- Selected link and zone analysis will be functional with HOV facilities present
- A Windows95 interface will be included
- Directional counts exceeding 100,000 may now be entered into the LINKS file

After complete testing, Version 5.30 will be shipped to all X32 users. The installation routine will be designed for Windows95/NT. The Systems Planning Office will provide a DOS version on request.

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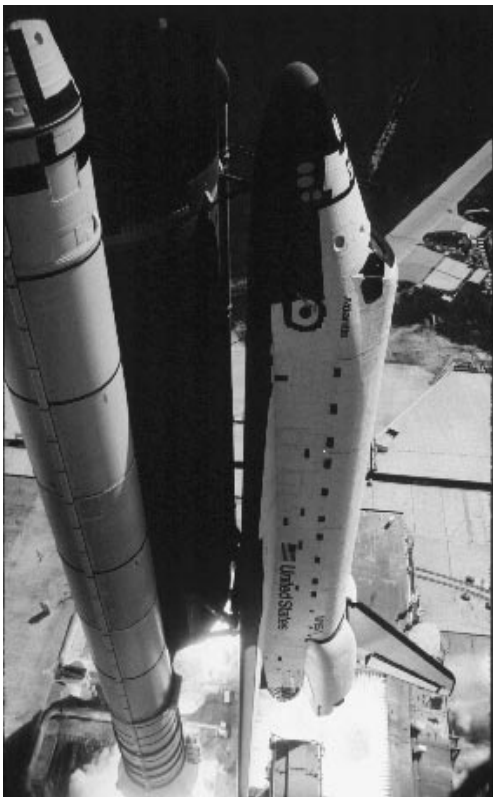
New network display package released: ArcView/FSUTMS Integration Software Version 1.0—see article on page 8

The Statewide Model Task Force...

Building a flight simulator for the rest of us!

by Robert G. "Bob" McCullough, P.E.



If you have ever climbed aboard a new transit vehicle, driven across a new bridge, traveled a new road, or shopped at the new mall that seems to be magically filled with everything from fishing tackle to new shoes for your kids, the Statewide Model Task Force has been a part of your day.

Florida is the only state that has a transportation system that includes trips to the moon. The success of the space program can largely be attributed to computer flight simulators that model the entire trip from start to finish, before the actual launch. Almost all of us have seen flight simulations as part of the news coverage, actually the most complicated travel model in the world. The Model Task Force, while not involved with the space program, provides transportation models to simulate travel trips here on earth— everything from getting you to work to getting the groceries to the store for you to buy on the way home.

The demand for transportation greatly exceeds the supply. This makes transportation decisions more difficult and good transportation models more important. Transportation models help our policy makers decide where to best spend your monies for transportation improvements.

Florida's transportation models start by simulating what is happening today: your transit trip, the trip across the new bridge, and that trip to the mall. It also includes the trucks that deliver the goods to the mall and the worker who rides the bus to work. Information from the census including socioeconomic data on things like vehicle ownership, number of workers in each household and composition and age of families are used by the models. Virtually all things related to transportation are fed into computerized transportation models. And then the models are used to analyze today's transportation systems. That's the easy part—predicting tomorrow is more difficult.

<u>The mission of the Task Force is:</u>

"To advance model development and applications to serve the transportation planning needs of the Department and local governments."

The models are used to project or anticipate what transportation improvements are needed for typically 5, 10 or 20 years into the future. Florida has a long list of transportation models, including 25 urbanized, 7 regional (or multi-county), several Turnpike Models, and a statewide model. Every city in Florida is a part of one or more models. The models are dependent upon what we tell them will happen in the future. Some of the assumptions

such as age of the population are straightforward; others like where and what type of new development will take place are not.

Florida is a fast growing state. Healthy development is an important component of Florida's robust economy. Development (referred to as "land use" in the models) is also the most difficult information to estimate for the future. The models are totally dependent on land use information. A better understanding of the relationship between land use and transportation is nationally recognized as a critical need in developing improved transportation models. At the state level, the Florida Senate Transportation Committee under the leadership of Senator James Hargrett recently completed an interim project that focused on land use and transportation issues. Based on their findings, the Committee requested the Model Task Force to make recommendations on how land use and transportation planning can be better integrated in the modeling process and how economic development variables can be input into planning models, including interconnectivity of modes and freight movement.

The Model Task Force is made up of transportation planners (transportation modelers) from throughout Florida. These modeling professionals gather as a collective body to form the Statewide Model Task Force. Working with representa-tives from several Metropolitan Planning Organizations and the Florida Department of Transportation (FDOT), the Model Task Force will examine issues presented by the Senate Transportation Committee and make recommendations.

The mission of the Task Force is: "to advance model development and applications to serve the transportation planning needs of the Department and local governments." Task Force members examine transportation models developed in your area and other parts of the state to find those that do the best job for regions and cities in Florida. The Task Force also directs research to improve our existing models as well as develop new ones when necessary. The selected transportation modeling tools are then made available for use in developing Long Range Transportation Plans, testing future plans for conformance to air quality requirements, examining transit and highway networks, providing future traffic for transportation project design and many other uses.

The Office of the State Transportation Planner, Florida Department of Transportation, supports the modeling process and the Task Force in its activities to keep Florida's modeling process uniform throughout the State. You are an indirect member of this process since your area is represented on the Model Task Force by planners from the Metropolitan Planning Organizations or FDOT district planners.

The tools provided by this Model Task Force help your decision makers in applying transportation funds to that new transit system, the new bridge, and the transportation systems to support that new mall.

1998 training workshops scheduled

by Huiwei Shen, AICP, FDOT Central/Systems Planning Office

Dates and locations for the next cycle of training workshops have been determined. The first of the 1998 modeling training course series, a Basic FSUTMS Workshop, was held during the last week of January, attended by a full house of modelers from the MPOs, FDOT districts, and consulting firms. The current high demand for these courses is evidence of the many MPO long-range plan updates gearing up throughout Florida. These courses are beginning to fill up, so please register early.

An Introduction to Urban Transportation Planning

Presented by the FDOT Public Transit Office
(co-sponsored by the FDOT Systems Planning Office)

Recent changes in federal legislation have led to a renewed importance for transportation planning. This course will discuss new directions in the urban transportation planning process, treat specific techniques of analysis and evaluation for urban transportation planning, and discuss possible means of achieving project and societal objectives. There is a **registration fee of $90** which includes hand-out materials for the course, four lunches, one dinner and breaks. **To expedite registration for this course, please contact directly Jon Ausman of the FDOT Public Transit Office: (850) 414-4519.**

March 9 - 13, 1998
Start Time: 8:30 am March 9, 1998
End Time: 12:00 noon March 13, 1998

Treasure Island Inn, 2025 South Atlantic Avenue
Daytona Beach Shores, Florida 32118
Hotel Telephone: (904) 255-8371
Room Cost: $68 per night

Intermediate FSUTMS Workshop

This workshop provides technical details on the FSUTMS process and is designed for transportation professionals who possess a basic understanding of the travel demand forecasting process. The workshop contains lectures on travel survey techniques, and how to create FSUTMS input files from Origin and Destination Survey data, how to create and interpret trip tables. The workshop discusses various FSUTMS control files, modeling of toll facilities and freight movements, and High Occupancy Vehicle (HOV) analysis. Discussions on how to develop and test alternatives and select needs and cost-feasible plans are also included. There is no registration fee for this course.

April 6- 9, 1998
Start Time: 1:00 pm April 6, 1998
End Time: 12:00 noon April 9, 1998

Ramada Resort, 7400 International Drive
Orlando, Florida 32819
Hotel Telephone: (800) 327-1363
Room Cost: $77 per night

Freight Modeling/Planning Workshop

This workshop discusses methodologies to incorporate freight and goods movement in the modeling process and FSUTMS freight modeling techniques. A guest modeler with extensive freight modeling experience is invited to assist in assembling and the presentation of the workshop. This course has no registration fee.

May 11 - 13, 1998
Start Time: 1:00 pm May 11, 1998
End Time: 12:00 noon May 13, 1998

Treasure Island Inn, 2025 South Atlantic Avenue
Daytona Beach Shores, Florida 32118
Hotel Telephone: (904) 255-8371
Room Cost: $65 per night

Advanced FSUTMS Workshop

The Advanced FSUTMS workshop provides instructions on how to develop Friction Factors, project traffic, and address air quality conformity modeling issues. The workshop also presents lectures on special assignment techniques such as Select Link/Build Trip Table, Select Link/Complex Weave Analysis, and Select Zone Analysis. **Procedures used for site impact analysis are discussed in this workshop.** This course has no registration fee.

June 8 - 11, 1998
Start Time: 1:00 pm June 8, 1998
End Time: 12:00 noon June 11, 1998

DoubleTree Hotel, 4500 West Cypress Street
Tampa, Florida 33607
Hotel Telephone: (813) 879-4800
Room Cost: $65 per night

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Should you have any questions or need a registration form, please call Huiwei Shen at (850) 488-4642, email address: huiwei.shen@dot.state.fl.us or Sandy Colson at (850) 488-4640.

See also the article on page 8 of this issue : "OUATS Model training to be offered April 14-15"

Model Task Force hears subcommittee recommendations

by Huiwei Shen, FDOT Central Office-Systems Planning and Wiatt Bowers, PBS&J Tallahassee

The Model Task Force Technical Team met on October 9, 1997, during the Florida Transportation Modeling Applications Conference in Daytona Beach. Summarized below are the meeting minutes, followed by the recommendations approved by the Model Task Force Technical Team voting members.

Agenda Item #1: Introduction

Wilson Fernandez began the meeting by taking roll call of the voting members. Wilson introduced Bob McCullough and Warren Merrell of the FDOT Systems Planning Office.

Bob McCullough acknowledged the high degree of activity by the Model Task Force subcommittees. He encouraged anyone interested in joining any of the subcommittees to contact Huiwei Shen. Bob introduced Warren Merrell, who informed the Model Task Force about recent directions from the Florida Senate Transportation Committee. The two main directives for the Model Task Force include freight planning and the further integration of transportation and land use issues. The Senate Transportation Committee has requested that the Model Task Force make recommendations by February 1, 1998 on how freight/goods movement and land use planning can be better integrated into the modeling process.

Item #2: Freight Subcommittee

Frank Baron, chairman of the Freight Subcommittee, initiated this discussion. He mentioned that the subcommittee had a kick-off teleconference in August. The mission and goals of the subcommittee were discussed in general terms. It was mentioned that Warren and Bob would work on receiving more detailed policy guidance from Florida Senate staff for the subcommittee. It was understood that the Senate's directive was for the Model Task Force to develop a plan of action on how to deal with freight and goods modeling by the February 1, 1998 deadline. Actual incorporation of the approach into the FSUTMS process may come later. Frank noted the need for an information exchange. Huiwei was designated as the contact person for distributing freight data/reports.

The MTF officially approved the mission statement of the Freight Subcommittee and, additionally, requested freight modeling support from FDOT Central Office. (See summary of approved recommendations.)

Item #3: Land Use Planning

Danny Lamb initiated a discussion on the transportation/land use issues identified by the Florida Senate. The Model Task Force decided not to form a land use subcommittee at this time. Jeanette Berk stated that the MTF devoted a large share of a previous meeting to land use modeling issues. Wilson suggested that the Model Task Force coordinate with some policy committee, possibly the MPOAC, to further discuss and evaluate these issues.

The Model Task Force instructed the Tri-Chairs to spearhead an effort to coordinate with the MPOAC and other agencies (e.g., Department of Community Affairs) to address transportation/land use coordination. The Model Task Force will provide technical support for this effort. (See approved recommendations summary.)

Item #4: GIS Subcommittee

Joey Gordon began the discussion regarding the GIS Subcommittee. He noted that several product demonstrations had been made throughout the Transportation Modeling Applications Conference and at the subcommittee meeting the day before. Glen Ahlert, chairperson of the subcommittee, continued the discussion by stating that the GIS Subcommittee agreed to expand its membership. Due to the bulging volume of requests for membership, they are asking for potential members to describe their experience and the value they can bring to the subcommittee.

Glen discussed the GIS Subcommittee's priorities and recommendations. During the previous day's subcommittee meeting, discussions and recommendations were made regarding the use of both the FSUTMS/ArcView package and the VIPER program developed by the Urban Analysis Group. Bob McCullough explained the need for two separate tracks to keep up with GIS technology and to provide products for FSUTMS and GIS users. Wilson noted that the VIPER program appeared to be more user-friendly and very similar to HNIS. Bob agreed, but also pointed out that FSUTMS/ArcView Visualization program would be more user-friendly to GIS practitioners.

The Model Task Force then voted to endorse the highway network conversion utility developed as part of the FSUTMS/ArcView visualization program. Furthermore, the Model Task Force requested the FDOT Systems Planning Office to evaluate the UAG's VIPER (Visual Planning Environment) program as an enhancement to FSUTMS. (See summary of approved recommendations.)

Item #5: Transit Subcommittee

Wilson introduced Charles White as the chairperson of the Transit Subcommittee. Wilson and Charles stated that, at the subcommittee meeting the day before, it was decided that there was a need to form a Survey Subcommittee. The purpose of this subcommittee would be to coordinate and disseminate information on travel survey activities and techniques, to provide a forum for best practices on survey techniques, and to provide a central repository for survey materials. Danny Lamb will serve as the Tri-Chair Coordinator for the subcommittee. Those who would like to be on the subcommittee should contact Huiwei Shen at FDOT's Systems Planning Office. The MTF's unanimous recommendation to create the Survey Subcommittee is shown in the summary approved recommendations.

Ike Ubaka wrote a memo to the Transit Subcommittee members describing efforts underway by the FDOT Public Transit Office to develop methods for short-term transit forecasts. The subcommittee agreed that FSUTMS is not the best tool for Transit Development Plans (TDP), and that it is more useful for MIS-level projects such as fixed-rail transit planning. As a result, the Public Transit Office will take the lead in identifying appropriate tools for short-term transit demand forecasting.

Charles then discussed the Transit Subcommittee recommendations. Over the past few months, the subcommittee has been developing and refining a list of potential transit modeling enhancements. At the most recent subcommittee meeting, the subcommittee voted to forward the long-term time-of-day modeling issues to the GEN Subcommittee for further study, because time-of-day modeling issues are related to both highway and transit modeling and the best practice indicated this should be addressed during the trip generation module. The list of possible transit modeling enhancements was refined down to three priorities, ranked in order of priority: access to transit from walk and auto, disutility assessment surveys, and the development and application of short-term time-of-day peak and off-peak conversion factors. These recommendations were presented to and approved by the Model Task Force (see approved recommendations summary).

Item #6: GEN Subcommittee

Wilson introduced Dennis Hooker, GEN chairman, to present the GEN Subcommittee recommendations. Dennis gave an overview of the previous day's meeting regarding the Lifestyle model and the forecasting of variables. The Lifestyle model presented was developed by FDOT District 4 through a research grant from FDOT Central Office. Dennis noted that the model, in its current state, is not directly transferable to Orlando and other areas with significant non-permanent resident activity. Danny Lamb described the development of the state's first Lifestyle model for use in the Tampa Bay area. Frank Baron noted that the subcommittee was generally in favor of recommending a Lifestyle approach, but expressed concerns that the FDOT District 4 stratification methodology and trip rates were not immediately transferable to other parts of the state.

The discussion then moved to the issue of non-permanent residents. Some urban areas in Florida may have similar non-permanent resident trip generation characteristics and can be grouped together. Another concern surrounded the post-2000 census and what data stratifications may be available in the future. Shi-Chiang Li noted a concern over model performance in areas where home interview origin-destination survey data are not available for the development of local trip rates. Two recommendations were forwarded by the GEN subcommittee to the Model Task Force for approval: 1) requesting the FDOT Systems Planning Office to study the implementation of a Lifestyle model throughout Florida, and 2) incorporating non-permanent resident trip generation in new FSUTMS models.

Summary of Model Task Force Approved Recommendations

After reviewing subcommittee analyses and recommendations on how to improve the Florida standard model (FSUTMS), the Florida Model Task Force (MTF) Technical Team adopted the following recommendations for statewide implementation during the October 9, 1997 meeting.

Freight Subcommittee

- **Mission statement approved:** The mission of the Freight Subcommittee is to enhance the planning and modeling of freight and goods movements throughout the state by incorporating freight modeling into FSUTMS.
- **Support for freight modeling requested:** The MTF requested FDOT Systems Planning Office to fund an effort to review freight modeling methodologies and make recommendations to incorporate freight movements into FSUTMS.

Land Use

- **Land Use Subcommittee formation delayed until FDOT Central Office provides policy guidance:** The MTF seeks policy guidance on land use related to transportation issues and will provide technical assistance and coordination for this effort.

GIS Subcommittee

- **First Release of FSUTMS/ArcView Visualization approved:** The MTF accepted the highway network conversion utility for FSUTMS/ArcView Visualization. The MTF also requested training courses to be offered by FDOT Systems Planning regarding this utility.
- **Enhanced network editing to be evaluated:** The MTF requested FDOT Systems Planning to evaluate the Urban Analysis Group's VIPER (Visual Planning Environment) as an enhancement to the existing FSUTMS/HNIS. The GIS Subcommittee will be involved with testing, reviewing, and evaluating this product.

Survey Subcommittee

- **New subcommittee for data survey:** The MTF created a Survey Subcommittee to coordinate and disseminate information on upcoming survey activities, to provide a forum for best practices on survey techniques, and to provide a depository for survey forms, results, and databases.

Transit Subcommittee

- **Further study of time-of-day modeling requested:** The MTF seeks further study on time-of-day modeling, to enhance highway and transit modeling by incorporating time-of-day periods into the trip generation module. As a long-term approach, this effort will be coordinated by the MTF GEN Subcommittee.
- **New transit access study requested:** The MTF requested an effort by FDOT Systems Planning to standardize the process for walk access and auto access methodologies used in FSUTMS transit modeling.
- **Additional funding for travel survey data requested:** The MTF requested a study of disutility assessments to calibrate mode choice constants and coefficients. The MTF also requests funding from FDOT Systems Planning for a survey to be conducted in Dade, Broward, and Palm Beach counties.
- **Time-of-day factor study requested:** The MTF requested Systems Planning Office to develop generic peak and off-peak factors to be applied to trip generation outputs. As a short-term enhancement, this will include the use of congested skims for the peak period and average congested or free-flow speeds for off-peak.

GEN Subcommittee

- **Life-Style (i.e., retired vs. working) variables to be evaluated for addition to FSUTMS universal menu:** The MTF requested FDOT Central Office to examine life-style trip generation models and supporting databases, evaluating their applicability and transferability in Florida urban areas.
- **Trips added to the universal FSUTMS process:** As a result of successful use in certain areas, the MTF recommended non-permanent resident trip generation (from tourists and other temporary residents) be included in new FSUTMS models.

Both recommendations, with minor modifications, were unanimously approved. (See summary of approved recommendations.)

Item #7: Round Table Discussion

Harry Gramling and Jim Fennessy presented information about the next release of FSUTMS. Version 5.3 is scheduled for release by the end of the year. Key features will include a variable factors file, inclusion of the Statewide Model, HEVAL enhancements, a Windows launcher, and full implementation of select link assignment. Harry handed out a summary list of the changes in Version 5.3 as well as a survey on operating systems being used throughout the state.

Wilson and Huiwei noted that there was a need to develop guidelines for operation of the Model Task Force subcommittees. Issues discussed involved limiting the number of members on subcommittees, requiring subcommittee chairpersons to be voting members of the Model Task Force, and requiring a public sector voting majority on all subcommittees. FDOT Systems Planning Office, with coordination from the Tri-Chairs, will begin developing guidelines to be reviewed by the Model Task Force.

Jim Fennessy noted that Internet access should be addressed. He mentioned UAG's web site and noted that future model developments may be distributed through the Internet using pre-authorized access codes. Don Draughon stated that FDOT is working on a web page, and Bill Sefekar indicated that the Tampa Bay Users Group currently has a web page.

Glen Ahlert suggested that the Model Task Force look at the HEVAL and TEVAL programs. He recommended that these programs be updated to include more useful measures of effectiveness and updated rates needed to review models and their results.

Shi-Chiang Li suggested the need for a statistics workshop to be put on by FDOT to ensure a better understanding of statistical terms. Mark Shbeib also suggested a course on transportation policy. Finally, Vidya Mysore noted that FDOT is considering conducting some future training workshops via teleconference. Use of this technology would make training courses more accessible and may allow for additional workshops to be offered.

The Model Task Force meeting was then adjourned by the tri-chairmen

Southwest Florida FSUTMS Users Group established

by Arturo J. Perez, P.E., Vice President, Leftwich Consulting Engineers, Inc.

FDOT District 1 has organized the Southwest Florida FSUTMS Users Group. The users group is open to all agencies (FDOT, county, city) and consultants interested in the advancement and application of state-of-the-practice procedures in modeling around the state of Florida and the U.S.

The first meeting of the newly formed group took place January 27, 1998 from 10:00 a.m. to 12:00 p.m. at District 1 Headquarters in Bartow. At this initial meeting, the structure, meeting frequency and duration (based on results from a survey of participants) was agreed upon. Mr. James Baxter of FDOT District 1 was elected as chairman of the group. In addition, the following topics were discussed:

- Modeling Overview (D. Scot Leftwich, Ph.D., P.E., Leftwich Consulting Engineers, Inc.)
- District 1 Florida Intrastate Highway System (FIHS) Model Development (D. Scot Leftwich, Ph.D., P.E., Leftwich Consulting Engineers, Inc.)
- VIPER. New, state-of-the-art, planning environment. This program provides a graphical modeling environment and is designed to run with Windows 95 and Windows NT. (Arturo J. Perez, P.E., Leftwich Consulting Engineers, Inc.)
- Polk County Model Modification (Jerry Graham, Post Buckley, Schuh & Jernigan, Inc.)
- State FSUTMS Model Task Force (Bob McCullough, FDOT Central Office)

The next meeting has been tentatively set for April 8, 1998 in Charlotte County. Meeting notices will be sent out once date and location have been confirmed. If interested in participating, please contact Mr. Mike Tako of FDOT District 1 at (941) 519-2395.

News from the Tampa Bay Users Group

FDOT District 7 and the Tampa Bay FSUTMS Users Group's ten board members have outlined a program for 1998 to keep everybody up to date with the latest model developments, policy directions and transportation planning issues in the Tampa Bay region. The Users Group is now FREE and open to anybody interested in the field of transportation planning/engineering. Keep your eye out for the first newsletter, which will be prepared by Jeanette Berk after the March 4TBFUG meeting.

Future Brown Bag Lunches:

May 27, 1998: Tampa Bay Travel Characteristics Survey

August 5, 1998: Project Impact Assessment: PD&E Studies & Corridor Studies

October 28, 1998: Land Use Allocation Models

All lunch meetings scheduled 12:00 to 1:30, FDOT District 7 Auditorium, 11201 North McKinley Dr., Tampa.

Annual TBFUG Dinner at one of Tampa Bay's fine dining establishments: December 9, 1998. **Future Direction for Modeling & LRTP Development Process**

For more information about TBFUG, please contact Chairman Christopher Hatton at (813) 620-1460.

Southeast Florida FSUTMS Users Group announces upcoming meetings

by Shi-Chiang Li, FDOT District 4

The following is a list of upcoming presentations hosted by the Southeast Users Group. These presentations will be held at the FDOT District IV Offices at 3400 West Commercial Boulevard in Ft. Lauderdale.

April 16 , 1998 at 2:00 P.M.-
The Urban Land-Use Allocation Model (ULAM) use and applications.
Presented by Mike Brown, TPS

June 11, 1998 at 2:00 P.M.-
The FDOT District VI GIS Project.
Presented by Dr. Shih-Lung Shaw, FAU

September 10, 1998 at 2:00 P.M.- Broward and Palm Beach County Model Validation Results.

November 5, 1998 at 2:00 P.M.
Development of Local Long Range Transportation Plans.

Research project "Refinement of FSUTMS Trip Distribution Methodology" awarded funding

The Department's Technical Research Advisory Committee has approved funding for a research project to investigate the avenues of refining FSUTMS trip distribution processes. Among the tasks, the research will attempt to find solutions for distributing trips in nonhomogeneous land development areas. Traditionally, "K-factors" and multiple sets of friction factors are used to remedy such problems. However, it has always been a debate of applying such remedies for future forecasts.

Ms. Fang Zhao, Ph.D., P.E. of Lehman Center for Transportation Research is selected as the Principal Investigator. Dr. Zhao has conducted research in transportation and land use modeling, Artificial Neural Networks (ANN), as well as spatial and temporal GIS. Also, participating the research is Dr. L. David Shen, Ph.D., P.E., Chairman of Department of Civil and Environmental Engineering, Florida International University.

The project will be started in late 1998 and completed by 2001. The project findings are expected to be incorporated into the models for the Long Range Transportation Plans due in 2004. Shi-Chiang Li of District 4 will manage the project.

A Model Task Force subcommittee will be formed to advise and review research works. Anyone interested in participating in the subcommittee should contact Ms. Huiwei Shen at (850) 488-4642.

Attention District Five modelers:

OUATS model training to be offered April 14-15

by Susan Sadighi, FDOT District 5 Planning and Huiwei Shen, FDOT Systems Planning Office

The Systems Planning Office and the District Five Planning Office will be providing a training workshop for the year 2020 Orlando Urban Area Transportation Study (OUATS) Model. This workshop will provide training to the Department, Orlando MPO, other local governments and consultants. This training is to assist the users of the model in the complex modeling techniques employed in this model.

A similar OUATS workshop was held in May 1996. Since this time, however, the OUATS model has been updated to incorporate the I-4 Master Plan recommendations. The upcoming 1998 OUATS workshop will also discuss other recent model refinements.

The workshop will be in FDOT's Orlando Urban Office Conference Rooms at 5151 Adanson Street, Orlando, Florida. The workshop will begin at 9:00 am, Tuesday, April 14, 1998 and end at 5:00 pm, Wednesday, April 15, 1998.

While there is no cost to the attendees for the course, pre-registration is mandatory. Seating is limited and priority will be given to the MPO and other local governments. Some seats will also be reserved for the consultants, based on their work activities related to the Orlando model and seating availability.

The pre-registration deadline for this workshop is April 3, 1998. After that time, all unregistered seats will be open to alternates. If you find you cannot attend this training after you have registered, please let us know so your training slot can be utilized.

For more information, please contact Huiwei Shen at (850) 488-4642; fax: (850) 921-6361; e-mail: huiwei.shen@dot.state.fl.us.

GIS-TM:

ArcView/FSUTMS Integration Software released

by Vidya Mysore, FDOT Systems Planning Office

At the direction of the Model Task Force GIS Subcommittee, the Systems Planning Office has developed a Geographic Information Systems/FSUTMS integration program using ArcView software. This new application is called GIS for Transportation Modeling, or **GIS-TM: ArcView/FSUTMS Integration Software Version 1.0**.

The application allows for conversion (importing and exporting) of ASCII FSUTMS highway network data (loaded or unloaded) to a format compatible with ArcView. Once the highway network is

converted, it can be displayed, edited, plotted, overlayed, and spatial analysis can be done with other GIS data.

This newly developed application is now available to the District Offices, Metropolitan Planning Organizations, other agencies, and consulting firms. The technical documentation and the users guide are in the process of being finalized and a series of training workshops is being conducted in each district during late February and early March.

This software should be treated like other programs developed by the Department such as the Design Traffic and Level of Service software in that it should be freely provided to non-Department personnel, agencies and consultants.

This program is being made available to the Districts and MPOs now to allow for review and submission of questions and comments.

Please contact your local district modeling coordinator to receive a copy of the GIS-TM software. Or, for further information you may contact Vidya Mysore at 850-922-0444, SunCom: 292-0444, DOTNET: pl931vm or e-mail: vidya.mysore@dot.state.fl.us.

US 90 Corridor Study: predicting travel demand volumes without a model

by Daniel J. Beaty, AICP & Robert G. Schiffer, AICP, *PBS&J/Tallahassee*

The Florida Department of Transportation, District III in Chipley, contracted with Post, Buckley, Schuh & Jernigan to conduct corridor planning studies of US 90 through Quincy and Marianna. As with all corridor studies, travel demand forecasts were needed. In the absence of any travel demand forecasting model in either of these two rural areas, a work plan was created to produce future year volumes using existing and historical traffic data.

The work plan consisted of three stages: existing traffic data collection, historical growth trend analysis of FDOT count stations, and future year traffic projections. Stage one, existing traffic data collection, began with a license tag origin/destination survey at stations on all major roadways leading into and out of each study area. The survey sites were chosen in close proximity to existing FDOT count stations so that historical FDOT count station data could later be used to factor the results of the O/D surveys to future years. The O/D surveys were conducted from 6:30am to 9:30am, 11:00am to 1:00pm, and 3:30pm to 6:30pm. The purpose of the O/D surveys was to estimate the level of through trip interchanges between the survey stations. 24-hour traffic counts were conducted concurrently with the O/D surveys.

Once the data were cleaned, the license tags were then matched. The TRANPLAN Build Trip Table function was used to create trip tables for each area using the license tag matches. The O/D survey data were collected for a total of 9 hours and needed to be factored to 24 hours. The 24-hour counts taken at the survey locations were used to factor the 9-hour O/D survey data to represent 24 hours. The end product was an existing (1997) 24 hour trip table for each study area.

Stage two of the project consisted of historical growth trend analysis of FDOT count stations located near the O/D survey sites. Growth factors were estimated based on historical growth in AADT at specified FDOT count stations since 1989. Growth trend analyses were performed for the years 2000, 2005, 2010, 2015 and 2020 for both study areas. The existing 24 hour trip tables from stage one were factored to the year 2020 in 5 year increments beginning with the year 2000. Each of the FDOT count station's growth factors was multiplied by 0.5 and applied to both the origins and destinations for the count station so that the volumes would be balanced. As a result of this type of factoring, some imbalances were seen in the stations' origins and destinations. The imbalances were a direct result of the application of non-directional factors and different amounts of growth between stations. To compensate for this imbalance, each stations' origins and destinations were summed and measured against ½ of the total trips produced by the historical growth trend analysis. Each station was then modified manually until the total trips (origins + destinations) were within 10% of the growth trend analysis two-way trips.

In the final stage of the project, the year 2020 24-hour trip tables for each study area were used to predict probable volumes on each of the proposed alternatives. For each alternative, percentages of trips that would potentially be diverted to the new alternative from other existing roadways, in terms of both origins and destinations, were applied to the trip table. The percentages were derived manually by taking into account the relative location of each alternative to each survey station, the location of dwelling units and employment and the magnitude of trip interchanges between survey stations. The resulting trip tables were then used to predict the reduction of trips on US 90, the impacts in the downtown areas (in terms of increase or decrease in traffic), and the predicted volumes for each alternative.

The approach to traffic forecasting utilized in this project provided a good sketch planning analysis of alternatives by showing the magnitude of impacts among alternatives. Through the use of origin/destination license tag surveys, concurrent 24-hour traffic counts, and historical growth trend analysis of count stations, it was possible to evaluate alternative corridors in areas that did not have travel demand models. This methodology can be used in those areas which do not have detailed travel demand models for projects that require evaluation of roadway alternatives at a sketch planning level.

Land use model assists in producing future ZDATA files

by Mike Brown, Transportation Planning Services Inc.

The Urban Land-use Allocation Model (ULAM) was developed at the direction of a technical advisory group made up of representatives from five counties in the Florida Department of Transportation District IV (Southeast Florida) service area as a part of the ZDATA2 Study. This study was headed up by Shi-Chiang Li with the FDOT District IV Systems Planning Office. The counties represented included: Broward, Palm Beach, Martin, St. Lucie and Indian River Counties. The ZDATA2 consulting team consisted of Post Buckley Schuh and Jernigan Inc., Transportation Planning Services, Inc., and Transportation Support Group. Transportation Planning Services (TPS) was primarily responsible for the development of ULAM and other supporting programs. TPS was also responsible for the evaluation of other land use model.

ULAM overview

The purpose of the ULAM model is to provide an automated process to allocate future growth in the form of countywide control totals at the traffic analysis zone (TAZ) level producing ZDATA1 and ZDATA2 files for input into the Florida Standard Urban Transportation Model Structure (FSUTMS). The ULAM model is designed to utilize existing FSUTMS data files to the maximum extent possible to reduce the need for duplication of data entry. An important feature of the model is its GIS interface which allows visual inspection of the model output as well as editing capabilities of the input files within an ArcView GIS environment. This GIS interface allows the model to be used as a land use visualization tool that can be used with other GIS coverages and applications such as the ArcView/ FSUTMS network editing package (GIS-TM) developed by FDOT or with the GIS-based transportation management systems currently under development around the state of Florida. An additional objective of the ULAM model is to provide a basic land use inventory and monitoring system of past, current and future land use trends.

Default variables

A number of default values and control variables are available with the ULAM model. Most of these variables can be modified through the ULAM.MAS file which contains countywide or land use-specific default values. Control variables for individual traffic zones can be modified through the various input files used by the model.

Countywide variables include the future year population and employment control totals, maximum percentage of any given zone that can be developed, the ability to allocate only existing plus committed development, and the ability to restrict growth based upon concurrency restrictions.

Control variables are also available for each individual land use category. These variables include the minimum acreage required in each traffic zone for a particular type of land use, the maximum allowable growth for any zone, a gross-to-net acreage conversion process to subtract vacant land required for supporting uses (i.e., right-of-way, parks, schools, etc.), and subtraction of vacant land for approved development. Future enhance-ments currently under development include the ability to select a different land use allocation methodology for each land use type.

Control variables for individual traffic zones include: vacant buildable acreage by land use type, allowable land use densities, approved development, population per dwelling unit, percentage of vacant or seasonal units, auto ownership information, variables for the life style trip generation model, and concurrency restrictions for each TAZ.

User-supplied input files

The most important input variable to the ULAM model is the vacant acreage information by land use type. The vacant land information is used to incorporate physical, environmental and policy constraints into the land use allocation process, ensuring that growth is not allocated to areas already built out and that growth is not allocated to wetlands or other types of environmentally sensitive areas. By separating vacant land by land use type, the model is able to reflect the currently adopted Land Use Element of the County's Comprehensive Plan, Zoning Restrictions and Land Development Regulations. It ensures that the model does not allocate unacceptable types of land uses in areas where that type of development is not permitted.

Although an optional input, the approved development information used by the model helps provide more realistic short term projections and assists the model in identifying the more active development areas. The existing-plus-committed development information is useful for developing short range transportation plans and in determining the implementation and cash flow requirements for major transportation improvements. The approved development file is also used to input information on redevelopment activities allowing the input of net increases or decreases of land uses in a particular TAZ. This file can also be used as a way to manually override the model to ensure a specific development such as a DRI project is accurately shown in the future year allocation process.

Model-generated inputs

Allowable land use densities (units or employees per acre) by TAZ for each land use type are used by the model to achieve conformity with growth management plans and also helps the user to ensure that realistic growth is allocated to the available vacant land. For example, this data input ensures that the same employees per acre applied in a downtown area is not applied in a suburban or rural area. If no information on land use densities is available a special program has been developed to generate default densities for each land use category based upon "area type" information from the FSUTMS highway network “LINKS” file.

Like approved development, recent historical trends (within the last 5 years) also provide a good indication about which areas are most likely to develop. The model uses previous ZDATA files to identify these trends and GIS tools to help evaluate the accuracy of this information for use in the land use allocation process.

Primary market area population and employment characteristics along with accessibility to major activity centers such as downtown areas, major airports, seaports

etc. are identified by the model using existing ZDATA information and highway network travel times. This market area information is used to help identify long term development opportunities that are then applied to the land use allocation process.

In summary, the new data required to run the model consists of countywide control totals, vacant acreage and approved development. All other inputs or data required are generated by the ULAM model using existing FSUTMS data sets.

The allocation process

A development index or desirability score for each TAZ and each type of land use is computed using approved development, historical trends and the market index information described above. The development index is then used by the ULAM model in the allocation process to determine which TAZs will be developed first for a particular land use. A smoothing process is used to ensure that too much growth is not allocated to a few TAZs with a high development index and large amounts of vacant land. This smoothing process is done using the countywide land absorption rate for the allocation period and by setting a limit on the maximum allowable growth for any given TAZ.

GIS display and editing

The land use visualization component of ULAM is a number of predefined ArcView project files or templates designed to assist in developing and editing input data sets required by the model. A number of templates are also available to compare and evaluate the results of the allocation process. These templates include a ULAM Master Template that displays multiple maps on the screen simultaneously to compare the model results with the input files. These input files can also be edited and then used as direct input into subsequent runs of the allocation model.

Specific data editing templates have been developed that isolate data for only those TAZs with vacant land. This allows the user to concentrate on those zones used in the allocation process. A "check" template has been developed which compares the TAZs with projected growth to the vacant land and approved development information by TAZ to identify zones with vacant land that the model did not allocate growth to, or to identify zones that were allocated growth but have no vacant land for that particular land use. Additional templates for specific land use planning applications, such as evaluating concurrency restrictions, are currently being developed by TPS for future versions of the model.

Reports

A ULAM Summary Report provides countywide statistics which can help determine if vacant land is available to support each type of new development. This report also identifies past trends in the employment mix, changes in population per dwelling unit, and how much future growth has already been approved. This report identifies countywide build out levels, the amount of capacity absorbed for each land use type and the projected build out year for each land use category. Finally, the report summarizes the results of the allocation process for each type of land use identifying remaining vacant buildable land for future growth, and growth that could not be allocated because of a lack of available vacant land for that use.

Recent modifications

Recent enhancements to the model include the development of supporting programs to convert the standard ZDATA1 file generated by the ULAM allocation model into a ZDATA1A file for use with the South Florida Life Style Trip Generation Model. A simplified user interface in the form of a point-and-click menu has also been developed to run the allocation model and all supporting programs and to access the various ArcView templates from a Windows Desktop.

ULAM applications

The model has been installed and is currently being used by the five counties represented on the ZDATA2 technical committee. Besides using the model to develop ZDATA files for their long range plan updates, these counties are exploring other uses for the model unique to their individual planning needs. Broward County is exploring the use of the model to evaluate the land use impacts of a proposed rail transit line. TAZs located around the proposed transit stations will be reviewed and modifications made to auto ownership and densities for vacant land around the stations. Finally, opportunities for redevelopment will be evaluated and then input into the model. Palm Beach County is planning to use the model to evaluate how changes in land patterns may impact air quality in the county. St. Lucie County has indicated an interest in using the model to develop their economic development plan.

Future improvements

These future enhancements and modifications will be used to refine the ULAM model into a more comprehensive land use planning package. A ULAM Users Group is also being explored as a means of providing further training and sharing the experiences of each county in using the ULAM model for different planning applications.

For more information about the ULAM model contact Mike Brown at (305) 861-8523 or at e-mail address **TPS.Mike.Brown@worldnet.att.net**

Florida Administrative Weekly changes

Effective March 1, 1998, announcements of professional services contract opportunities and selection results will no longer appear in the Florida Administrative Weekly. Such announcements will continue to be available on the FDOT Internet home page (www.dot.state.fl.us).

District 4 Planning posts two job openings

FDOT District 4 Planning seeks to fill two transportation planning/engineering positions:

Position # 12240:
Engineering/Architecture/Surveying - EAS IV (Pending Reclassification)

Position #02006:
Engineering/Architecture/Surveying - EAS III

Both positions are in the Systems Planning section of the District Planning Office. The closing date for applications is March 20, 1998. Applicants should submit a current and complete State of Florida employment application through the internet web at http://fcn.state.fl.us or submit the state application to Mr. William L. Cross, P.E. for the EAS IV position or to Mr. Shi-Chiang Li, AICP for the EAS III position.

District IV's address is 3400 W. Commercial Blvd., Ft. Lauderdale, FL 33309. The Planning Office telephone number is 954-777-4601. Further information may be obtained through District IV's 24-hour jobline: 954-777-4444. Descriptions for the positions may also be found in ITE's job site on the internet.

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Co-Editor: Mike Brown, AICP
Transportation Planning Services, Inc.,
5101 Collins Avenue, Suite 9H
Miami Beach, Florida 33154-3104
(305) 861-8523, FAX (305) 861-9468
TPS.Mike.Brown@worldnet.att.net

Co-Editor: Terrence Corkery, AICP
FDOT Systems Planning Office
605 Suwannee Street, Mail Station 19
Tallahassee, Florida 32399-0450
(850) 488-9746, FAX (850) 921-6361
Terrence.Corkery@dot.state.fl.us

FDOT Systems Planning Office
605 Suwannee Street,
Mail Station 19
Tallahassee, Florida 32399-0450