

TBAG

An Open Forum for
Transportation-Related Issues

TAMPA BAY APPLICATIONS GROUP

Volume 20 · March 2002

“FROM THE CHAIR”

by: Christopher Hatton, Kimley-Horn and Associates, Inc.
2002 Chairman for the Tampa Bay Applications Group



Secretary Ken Hartmann
welcomes everyone to the
2001 TBAG Awards Banquet.

TBAG takes the “Gold”! While not an official Olympic event, the December 4, 2001 Tampa Bay Applications Group (TBAG) year-end 2001 Awards Banquet would certainly have taken top honors in the “Best Program” competition. We had a record turnout for our year-end banquet that was held at Landry’s Seafood House on the Courtney Campbell Causeway. We were very fortunate to again have our program headlined by FDOT District Seven Secretary Ken Hartmann. Secretary Hartmann spoke to the group about the issues and challenges for the FDOT in the upcoming year, including accelerated funding for projects and greater reliance on consultants.

The entire TBAG organization thanks Secretary Hartmann for his time and effort in making this a special night to remember. Special thanks also go out to Kasey Cursey for her wonderful job in planning and organizing the banquet, Wade White for assembling and creating the banners, and Danny Lamb whose personal commitment of FDOT support was another key to our best year ever.

The TBAG Awards Banquet recognized all of the people who helped make the TBAG successful in 2001.

The first part of our awards program recognized over 30 special individuals who contributed through preparing articles for our newsletter or making a presentation at one of our meetings. These “patrons” received a pen set and personalized business card holder recognizing them for their “outstanding contribution” to the TBAG in 2001.



Every person who contributed to the TBAG in 2001 was in the running for the major TBAG Model Application Award. This was the fifth year this award was presented. The 2001 awards were divided into three major categories: Best Presenter, Best Workshop and Best Article. While the voting by the TBAG

Board was very close, we were very happy to announce the following winners at the banquet: Best Workshop – Lisa Kramer, Steve Luce and Tammy Vrana; Best Presentation – Bruce Landis; Best Article – Jason Collins and Michael Hollock-Solomon (tie). Each winner was presented with a beautiful glass sculpture. Congratulations once again to all of our very deserving winners and to all who continue to support the TBAG!



Lisa Kramer, Steve Luce, and Tammy Vrana (top), Bruce Landis (left), Jason Collins (center), and Michael Hollock-Solomon (right) were the winners of the TBAG Model Application Awards.

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ATTENTION!!!

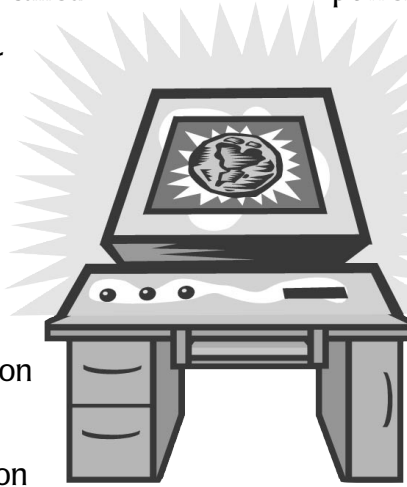
Next TBAG Meeting

March 28, 2002

Automating Trip Characteristic Studies Using GIS

by: Randy Goss, Kimley-Horn and Associates, Inc.

There is a law of computer science called Moores Law. This law states that the number of transistors on a computer chip will double every 18 months. This is roughly equivalent to stating that the amount of computational power doubles every 18 to 24 months. Since declared in 1965, Moores law has surprisingly held the test of time. Although seemingly unrelated, Moores law is very important to Geographical Information Systems (GIS), and consequently the application of GIS techniques to the analysis and solution of transportation problems. Because of this tremendous



power curve, we have reached a point where now, and continuing into the future, we will have the equivalent of supercomputers on our desktop. It is this computational power that has allowed GIS to evolve into a tool that impacts virtually every aspect of information based science.

Recently, Kimley-Horn and Associates, Inc. encountered a project involving a large scale Trip Characteristics Study, that was made possible, in essence, by the advances in computation power predicted in Moores Law. This project required

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Upcoming Events

Basic FSUTMS Modeling Workshop

April 8 - 12, 2002

Hilton Hotel Tampa Airport Westshore
2225 Lois Avenue, Tampa, Florida 33607
Hotel Telephone: (813) 877-6688 or (800) Hiltons
Room Rate: \$89 Per Night
Start at 1:00 PM Monday (4/8) and
End at 12:00 PM Friday (4/12)

GIS-TM Workshop

April 22 - 25, 2002

Embassy Suites Boca Raton
661 NW 53rd Street, Boca Raton, Florida 33487
Hotel Telephone: (561) 994-8200 or (800) Embassy
Room Rate: \$70 Per Night
Start at 1:00 PM Monday (4/22) and
End at 12:00 PM Thursday (4/25)

Citilab International User Group Meeting

April 29 - 30 – Training May 1 - 3, 2002

Sheraton Sandkey Resort, Clearwater, Florida
Training on TRANPLAN, VIPER, TP+, and TRIPS
For more information contact Michael Clarke at
mclarke@citilabs.com, 1-510-583-7330, or
visit the website at www.citilabs.com

Freight Modeling Workshop

May 6-8, 2002

Hilton Daytona Beach Oceanfront Resort
2637 S. Atlantic Avenue, Daytona Beach, FL 32118
Hotel Telephone: (386) 767-7350
Room Rate: \$80 Per Night
Start at 1:00 PM Monday (5/6) and
End at 12:00 PM Wednesday (5/8)

Basic and Advanced Land Use Modeling Workshop

May 20 – 21, 2002 Basic Land Use Workshop
May 22, 2002 Advanced Land Use Workshop

Embassy Suites Boca Raton
661 NW 53rd Street, Boca Raton, Florida 33487
Hotel Telephone: (561) 994-8200 or (800) Embassy
Room Rate: \$70 Per Night
Start at 8:30 AM Monday (5/20) and
End at 4:30 PM Wednesday (5/22)

*Register online for workshops at
www11.myflorida.com/planning,
click on (Training).*

If you have further questions, please contact:

Huiwei Shen, FDOT Systems Planning Office
Phone: (850) 414-4911 • Suncom: 994-4911 • e-mail: huiwei.shen@dot.state.fl.us
(with a subject line of "Workshop E-mail")

the collection and compilation of about 10,000 surveys within a 3 to 4 week period. The actual time available for data entry and processing was in the range of 2 weeks. As methods were evaluated to perform this study, the most promising technology identified was the use of a centralized data repository with data entry conducted through widespread CADD software, and calculations performed through a GIS system that could read the data out of the central repository. The GIS system, using a type of database known as a 'geometric network' performed the trip routing, calculated trip lengths, and exported data summaries for further analysis.

The first step in the implementation of this approach was the construction of a geometric network from an existing streets database. The streets database segregated roadways by Interstate, Arterial, Major County Roads, and Minor County Roads. For the most part, this classification was analogous to the FDOT Functional Classification, and could be used to simulate routing characteristics.

The functional classification in the basemap was important because it was used to develop 'weights' for the principal roads in the network. These weights establish preferential travel through the system. Without developing weights, the network would create routes based on the least number of network nodes (a node being an intersection between two segments) traversed. This is obviously not a realistic measure of driving distance, thus

it was necessary to incorporate a weighting system into the network. The weighting system that was developed was a measure of the approximate time it takes to drive a segment of the basemap. These times, based on the functional classification, were an attempt to produce a network that will simulate driving decisions made by the local residents. Although the functional classification was used as a starting point, a more refined network was created by adjusting the network weights based on



empirical results. Future versions of the network may incorporate a weighting scheme based on the time of day and traffic counts, in essence using level of service as a factor to adjust the weighting system based on real time data.

After the network was constructed, a Relational Database Management System (RDBMS) was designed to hold the results of the surveys and the GIS analysis. The RDBMS is actually the hub of the project, functioning as the repository for data entered from the field surveys, the source of data for the GIS system, and the repository for the routing results generated by the GIS system.

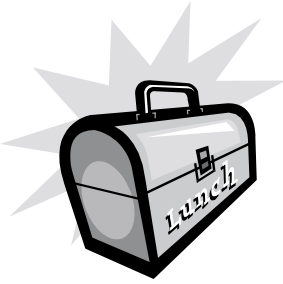
To expedite data entry, a data entry form was developed in a CADD environment. This application was designed to take advantage of the large number of trained AutoCAD personnel and the high degree of accuracy that can be obtained through CADD. Trip pairs were digitized using the snapping capability inherent to the CADD systems. When a survey was completed, the designer saved the survey into the RDBMS and the survey was checked for errors by the RDBMS.

Once a survey was entered into the RDBMS, it could then be used for analysis by the GIS system. The GIS system ArcInfo by ESRI was selected for the routing analysis, and a custom application was prepared to automate the generation of the trips. The program read the surveys from the RDBMS, stepped through each survey, and calculated each of the trip segments for a given survey. Each trip segment was saved in another table in the RDBMS along with the segment's functional classification, length, weight, and road name. This data was later utilized to generate statistics for the trip characteristic study.

The final step was the creation of a template for the printing of each survey. A report was prepared in the GIS system that summarized the trips, and the other survey data. Similar to the calculations, the GIS system stepped through each of the surveys and printed a report for each survey. This generated a hard copy record of the routing and survey results, and allowed for the identification of routes that needed adjustment based on the selections made through the GIS system. Consideration is now being given to the development of a web-based interface for presentation and review of the survey and routing data.

ATTENTION

Bring your lunch and bring a friend!



**Tampa Bay Applications Group Meeting
MARCH 28, 2002**

FDOT District Seven Office from 12:00 p.m. to 2:00 p.m.

District Seven Auditorium

(Auditorium Opens at 11:30 a.m.)

GIS PLANNING APPLICATIONS

**Dr. Paul Zwick (Director of the GeoPlan Center at the University of Florida and Department Chairman for Urban and Regional Planning)
*Florida Geographic Data Library (FGDL)***

GeoPlan is a research center for GIS and Image analysis at the University of Florida. The Center is also the repository for the Florida Geographic Data Library (FGDL). Dr. Zwick will discuss how the data for the Library are being used by FDOT and what GeoPlan's intent is for these data and applications in the future.

**Imran Ghani (District Modeling Coordinator, FDOT - District 2)
*GIS to FSUTMS to GIS - Using the Right Tools for the Right Job***

The FDOT-District 2 has been using customized tools developed by Fennessy and Associates to create a transportation network from a GIS database. These tools allow a user to do all of the network editing in GIS and then to export the network to a TRANPLAN format.

This presentation will discuss why District 2 has chosen this approach. In addition, the presentation will include a demonstration on how to use aerials and survey drawings to code future improvements as accurately as possible. Since the network is a GIS database, Mr. Ghani will demonstrate how queries can cut down the tedious network updating tasks and show how his famous "code once, but use in many alternatives" technique allows one improvement to be incorporated into many different analysis years.

**Vidya Mysore (FDOT - Systems Planning Office)
*The Future of GIS-TM: A New GIS Paradigm for Transportation Modeling***

The presentation will provide an update on present and future trends of GIS-TM. Presently, GIS-TM can import and export several FSUTMS files to ArcView 3.X, as well as edit the network, zonal data and perform limited network spatial editing. It can also calculate LOS for a model using a generalized table.

The next GIS-TM upgrade will be released on an ArcGIS platform (ESRI's new technology). At first, the upgrade will focus on migrating existing capabilities. Later, the upgrade will focus on the Geodatabase framework, a seamless link between model data and other transportation applications.

Blue Ribbon Panel to Look at Options for Future of FSUTMS

The Florida Statewide Model Task Force (MTF) is about to undertake one of the most important decisions in its history -- a decision that will determine the future of FSUTMS and travel demand modeling in Florida.

Specifically, the MTF will decide whether to continue using TRANPLAN as the underlying software package on which FSUTMS is built or to migrate to another travel demand software package. This is a decision that will have significant impacts on every planning agency and private consultant firm.

To help guide the decision, the Tri-Chairs of the MTF have assembled a seven-member Blue Ribbon Panel. The membership includes professionals with extensive knowledge and experience in the following areas: travel demand modeling packages, all major modes of travel, emerging issues and trends, and a combination of modeling experience in Florida and nationwide. The Panel also

includes a balance of public, academic and private perspectives.

The Panel members include Patrick Costinett (Parsons, Brinckerhoff, Quade & Douglas), Dane Ismart (Louis Berger Group), Kenneth Kaltenbach (The Corradino Group), Eric Miller (University of Toronto), David Hartgen (University of North Carolina – Charlotte), Thomas Rossi (Cambridge Systematics) and Jim Ryan (Federal Transit Administration). Dr. Ram Pendyala (USF) is serving as moderator for the Panel.

The MTF Tri-Chairs have identified three specific roles for the Blue Ribbon Panel:

1. Review our current modeling system. What does it do well? What are its limitations?
2. Evaluate and compare available travel demand software packages (including TRANPLAN) based upon the following:
 - ❖ Adaptability to new modeling approaches
 - ❖ Ease of integration into our existing modeling structure

- ❖ User friendliness and limitations
- ❖ Data transferability, hardware requirements, training, and costs.

3. Develop a set of specific recommendations covering the following:

- ❖ Which software package(s) best meets the needs of Florida
- ❖ If necessary to select a new software, a time frame and a process for making a smooth transition.

The findings and recommendations of the Panel will be presented and discussed on April 18th in a workshop format. Depending on the final software recommended, impacts to the transportation planning community could include new requirements for data, computer equipment and software, training, and the associated costs and staff time. Because of the significance of this issue, the MTF meeting will provide everyone an opportunity to better understand available options and to participate in the discussions that will shape the final decision. A brief agenda summary is provided below.

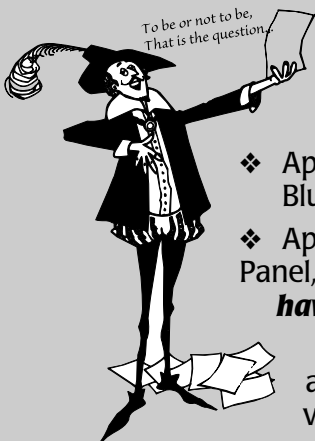


AGENDA FOR MODEL TASK FORCE MEETING

Voice your opinion on the future of travel demand modeling in Florida by attending the Florida MTF meeting on April 17th and 18th in Orlando.

- ❖ April 17, PM – Vendor demonstrations of several major travel demand software packages, including presentations of key features and advantages of each of the packages.
- ❖ April 18, AM – Presentation of the findings and recommendations of the Blue Ribbon Panel.
- ❖ April 18, All Day – Group discussions on the findings and recommendations of the Panel, as well as the pros and cons of the available options. ***This is your opportunity to have your questions answered and your opinions heard.***

If MTF members feel they have sufficient information, this meeting will include a final selection of the software, or at a minimum include a narrowing to a very short list of the software packages for further consideration. **Please visit www11.myflorida.com/planning/systems/stm/mtf/02docs/mtf-mtg4.pdf for a more detailed agenda for the meeting.**



The presentation of awards was made possible due to the generous sponsorship of 14 consultants. In addition to the awards, nine of the consultants also sponsored USF students at the banquet. Once again, kudos to the consultant community for making the banquet possible and for the continued support of the TBAG.

I also want to thank all of the TBAG members who took time to complete the survey which was handed out at the end of the banquet. The results were used by the TBAG Board to determine topics for our 2002 program.

These topics are listed to the right.

I also want to say thank you to the TBAG Board for its work this past year and for allowing me to continue to chair this great group as we head into a challenging new frontier in the transportation world. Finally, I want to recognize the incredible job that Kasey Cursey did in her first full year as TBAG Coordinator / Editor / Liaison! It was no small coincidence that the TBAG had its best year ever as Kasey took over the reigns!

I look forward to seeing all of you at our great kick-off for 2002!

BRING A BROWN BAG TO TBAG!

May 23, 2002 (Workshop)

12:00pm - 2:00pm

Land Use and Transportation

August 29, 2002

12:00pm - 2:00pm

Multi-modal Planning

October 24, 2002

12:00pm - 2:00pm

New Methodologies (Workshop)

2002 Awards Banquet (TBA)

The May and October meetings are workshops. If you would like a specific topic covered during the workshops or the other meetings, please call Christopher Hatton at (813) 620-1460.

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

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