Current State of FSUTMS Practice

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Presented to
Model Task Force
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Florida Model Task Force

- Meeting of the Florida Modeling Community
- Gives a voice to model users
  - Steering group setting the direction of Florida’s continually evolving standard model structure
- Essential to maintaining a standard model
Florida Model Task Force

- MTF Leadership
- MTF Membership
  - Florida DOT District Offices
  - MPOs
  - Users’ Group Representatives
  - Transit Agencies, FHWA, FTA, EPA, DCA, DEP
  - Consultants, Universities
- MTF Committees
  - Data
  - GIS
  - Model Advancement
  - Transit
Florida Modeling Community

Responsibilities for Florida modeling

- DOT Central Office – model standards and outreach
- DOT District Offices – model development, validation
- MPOs – LRTPs, socioeconomic data, validation
- Consultants – lead or support technical analysis
Florida Modeling Community

Responsibilities for Florida modeling (cont’d)

- Other Policy Agencies – FHWA, FTA, EPA, DCA, DEP
  - Regional Planning Councils – DRIs, visioning, hurricane evacuation
  - Transit Agencies – New Starts forecasting, operations planning
  - Toll Authorities – traffic and revenue studies
  - Local Governments – socioeconomic data development, DRI review, concurrency
  - Universities – research, training, campus master planning
Florida Modeling Community

**Model types**

- **Statewide**
- **Regional**
  - MPO models
  - Supplemental models
- **Urban**
  - MPO models
- **Rural counties**
- **Subareas or project-specific**
BRIEF HISTORY OF MODELING IN FLORIDA
Late 1970’s/Early 1980’s

- UTPS federal mainframe-based software
  - All models housed in FDOT Central Office

- Original MTF formed
  - Agreement on which options to use within UTPS
  - Developed GEN program
  - beginning of FSUTMS (mainframe)
Mid to late 1980’s

- FDOT Decentralization, Planning Office Reorganized

- Model Task Force inactive

- Microcomputers widely available
  - Some MPOs develop in-house models with MinUTP, Tranplan, and other PC-based software

- Migration to Micro-FSUTMS with TRANPLAN
Early to mid 1990’s

- Model Task Force resurrected to discuss standardization issues
- RS-6000 mini-computers for larger models
- 32-bit Windows operating system enhances PC-based software
Late 1990’s to Early 2000’s

- Blue-Ribbon Panel and Model Evaluation Study Committee
  - Studied alternative software engines to run the next generation of FSUTMS models

- TransCAD, Cube Voyager and New FSUTMS Standards
Today

- Open scripting capability of Cube Voyager
  - Flexibility for model developers to customize models
  - No need for models to follow statewide standard
  - Increasingly models are becoming “less standard”
FSUTMS STANDARDS
Benefits of Standardization

- Shared Data and Parameters
- Statewide Training Program
- Larger Pool of Expertise
- Legally Defensible
FSUTMS Standards Comparison

- Most models follow Olympus structure
  - Deviation exists in more complex models
  - SERPM deviates most (and is the most complex)

- Trip Purposes
  - Most models follow standard purposes
  - Lifestyle Trip Purposes by Age Category
  - Gainesville/Alachua has special University purposes

- Most, but not all, models follow FSUTMS Standard Area Types and Facility Types
WHAT WE DO IN CENTRAL OFFICE
Modeling Activities

- **MTF**
  - MPO, FDOT, Transit agencies, DCA, DEP, FHWA, Modeling user groups

- **Universities/Consultants**

- **FDOT Districts, MPOs & local governments**

- **MTF**
  - Transit, ITS, Safety, Policy, Statistics Offices, Systems Management, DEP, Regional Planning Councils

- **Districts, SIS & Systems Management Sections, & ISD Offices**

- **Modeling-related activity support**

- **Training & Modeling Software Support**

- **Research & Development**

- **Traffic Forecast Support**
Core Modeling Activities

- Outreach Activities
- Technical Support
- Develop standard modeling tools
- Statewide Model
- Software testing and distribution
Outreach Activities

- Training
- Newsletter
- Model Task Force
- District Model Coordinators’ Workgroup
- SIS Plans and Corridor Studies
- Growth Management
  - Mobility Fees, DRI Traffic Impact Studies
FSUTMS Training Series
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<td>DECEMBER '09</td>
<td>FSUTMS Comprehensive Modeling</td>
<td>Tampa, Florida</td>
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<td>FEBRUARY '10</td>
<td>Executive Summary Modeling</td>
<td>Orlando, Florida</td>
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<td>MAY '10</td>
<td>FSUTMS/Voyager Scripting</td>
<td>Tampa, Florida</td>
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Final training dates will be emailed to the Florida Transportation Modeling Newsletter mailing list.

FSUTMS Model Training Series
Sponsored by FDOT Systems Planning Office
Florida Transportation Modeling Newsletter

Do You Know How . . .

Click Here

Or

Here

. . .to Find the Info?

www.fsutmsonline.net
Technical Support

- Florida DOT Central Office provides technical support to local agencies and their consultants for travel demand modeling in Florida.

- Most support requests involve:
  - Updating model scripts to analyze a specific condition
  - Summarizing data
  - Model application issues
  - Use of model software
SERPM - Selected zone analysis

- The user implemented multiple selected zone analyses using the SELECTLINK scripting command and encountered extremely long assignment run times.

- Central Office successfully tested an alternative solution for selected zone analysis creating a PATH output file and using the PATHOGROUP command.
  - Reduced the assignment runtime by nearly 70%
  - 7.5 hours down to 2.5 hours
NERPM – VMT by TAZ

- The user wanted to summarize VMT by TAZ—but only for travel within the city limits
- Central Office recommended building a path skim file based on a new link attribute for distance, which has a zero value for all links outside of the city
  - Then multiply the skim matrix by the trip matrix to calculate VMT. Row sums provide total VMT by TAZ.
- Central Office also helped with scripting this solution into the model
NERPM – Selected Link Posting

- The user was getting errors trying to post the outputs from a selected link analysis
- Central Office worked with Citilabs and found the problem to be with the length of the variable name used for posting
- A shorter variable name was used
Standardized Modeling Tools and Data

- Air Quality Postprocessor
- FITSEVAL
- Standard Reporting Tool
  - HEVAL Replacement
- GIS Tools
  - LOS System Evaluator using FDOT QLOS Handbook
- Data Development
  - infoUSA, AWI, Census, NHTS
Statewide Model Development

• Maintain, validate, and update Statewide travel demand forecast model
  • New 2005 Base Year Model Validation Complete
  • 2030 Future Year Data Set Available
  • Corridor Evaluation Application Under Development
Software Testing

- FDOT is testing Cube 5.1-beta version to ensure all Florida models will perform correctly when Cube 5.1.0 is released.

- Working with Citilabs to resolve problems we identify

- Test Parameters:
  - Error-free run
  - Statistics: Reasonable match to Cube 5.0.2
    - Trip Generation
    - Trip Distribution
    - Mode Choice
    - Trip Assignment
  - Run Times: Improvement over Cube 5.0.2
Models Being Tested

- Alachua
- NERPM
- NERPM4
- NWFRPM_V1.0
- SERPM65 Daily
- SERPM65 Time-of-Day
- CFRPMv45
- CFRMPv50
- TBRPM_7.0
- FLSWM_v502
Test Status

- Currently testing the model runs.
- Several software issues have been identified and solved.
- Changes in coding syntax affecting the tested models have been identified.
- New issues may arise with each updated beta version release
Current Distribution

- Currently DVD mailing from Central Office
  - 161 people
  - 128 different agencies
  - Mailing list includes state, county, and city departments, MPOs, RPCs, and transit agencies
Online Public-Agency Software Distribution Via fsutmsonline.net download

Coming December 2009
Benefits of Standardization

- Shared Data and Parameters
- Statewide Training Program
- Larger Pool of Expertise
- Legally Defensible

A common model structure allows Central Office to deliver the support we provide.
Maintaining Standardization

Efficient Use of Resources for Model Advancements

Three Key Pillars

- Training – Free
- Software – Statewide Public-Sector License
  - FDOT has provided for free since late 1980’s (Micro-FSUTMS/Tranplan)
- Model Task Force – Responsive to User Needs
Our Challenge

- Setting MTF Action Plan for Next Three Years
- Discussing how to Encourage Innovation While Maintaining Standardization