

FSUTMS and TBEST Applications in FTA New Starts and Small Starts Processes



presented to
Florida Model Task Force

presented by
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FLORIDA
MODEL
TASK
FORCE



Project Schedule

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Task 1	Review Requirements										
Task 2		Review TBEST									
Task 3		Review FSUTMS									
Task 4			Review FL & National Submissions								
Task 5					Recommendations						
Task 6							Guidebook				
Task 7											



Technical Advisory Group Meeting





New Starts & Small Starts Project Definitions

• New Starts

- Total Cost >\$250 Million
- 20- or 25-Year Forecast Horizon

• Small Starts

- Small Starts
 - Under \$75 Million per Year (Total < \$250 million)
 - Opening Year Forecast
- Very Small Starts
 - Less than \$3 Million per Mile (Total < \$50 million)
 - Current Ridership
 - Off-Model Mobility Impact Assessment

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Task 1 Review of Travel Forecast Analysis Requirements for FTA Starts Projects

• Submission Specifications

- Travel Forecasts Template
- Certification of Technical Methods
- Documentation of Uncertainties
- Other Required Reports
 - Changes Over Time
 - Changes Between Alternatives
 - Quality Control
- Optional Reports
 - Back-Up Materials
 - Case for the Project
 - Supplementary Data (ARRF, Off-Model Estimation, etc.)

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Task 1

Review of Travel Forecast Analysis Requirements for FTA Starts Projects

- **Travel Forecasting Tools**
 - Regional Travel Demand Models
 - FSUTMS in Florida
 - SUMMIT Application
 - Developed by FTA to Evaluate User Benefits
 - Supplementary Applications
 - ARRF
 - TBEST
 - Alternative-Specific Effects Analysis
 - Off-Model Methodologies

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Task 2

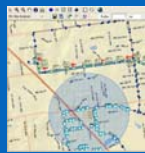
Review of the Applicability of TBEST for New Starts and Small Starts Applications

- **Methodologies**
 - Direct Transit Ridership Estimation
 - Stop-Level Socioeconomic Data
 - Stop-to-Stop Impedance Matrix
 - Transit Network Inter-Relationships
 - Transit Network Accessibility
 - Direct and Transfer Boardings Estimation

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Task 2 Review of the Applicability of TBEST for New Starts and Small Starts Applications



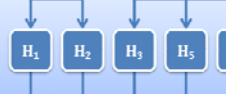
Stop-to-Stop Impedance Matrix Generated Using TBEST Network Routing Engine

Stop	A	B	C
A	-	45	22
B	45	-	15
C	22	15	-

Calculation of Stop Inter-Relationships Using Transit Database



Determination of Competing and Complementary Stop Accessibility



Accessibility Summary For Population and Employment



Calculation of Direct and Transfer Boardings By Stop

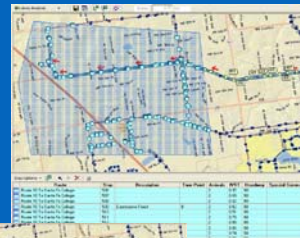


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Task 2 Review of the Applicability of TBEST for New Starts and Small Starts Applications

Input

- Socioeconomic Data
- Transit Network
- Ridership Counts (Stop/Route Level)



Output

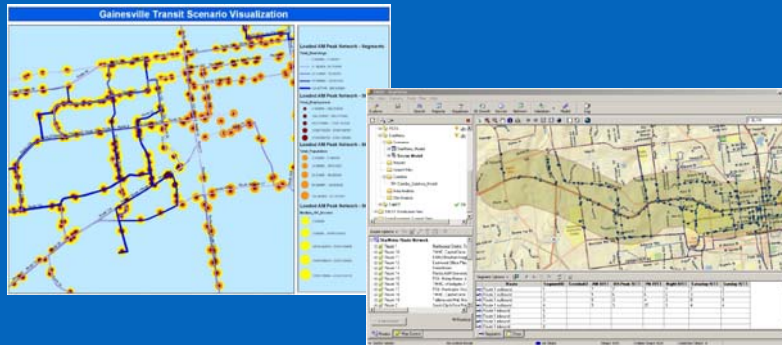
- Impacts of Service changes
- Land-Use Analysis
- Query Analysis
- Route-Level Service Performance Reporting



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Task 2 Review of the Applicability of TBEST for New Starts and Small Starts Applications

- **FTA Starts Project Application**
 - Feasibility Study Tool
 - Supplementary Measure of Aggregate Ridership



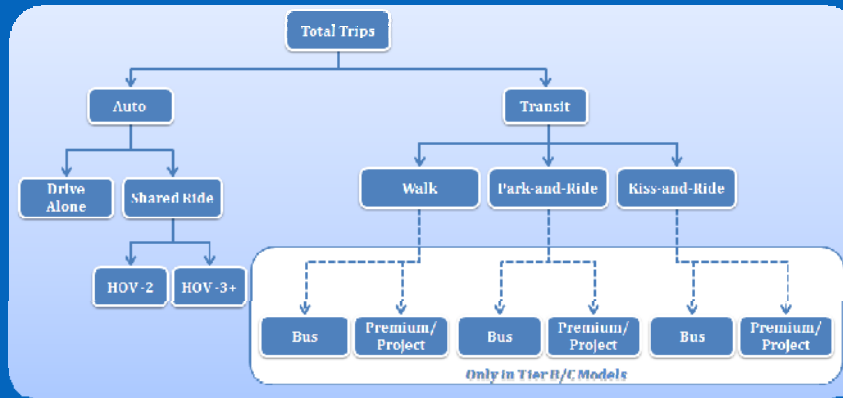
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Task 3 Review of FSUTMS for New Starts and Small Starts Applications

- **Model Processes Related to FTA Starts**
 - Major Markets and Travel Patterns
 - Highway Network: Path & Speed
 - Transit Network: Path & Speed
 - Mode Choice Coefficients and Constants
 - Assignment

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Task 3 Review of FSUTMS for New Starts and Small Starts Applications



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Task 4 Review of National Forecast Methodologies for New Starts and Small Starts Projects

- **New Starts Projects**

- Data Collection, Application, and Model Testing - Dallas, TX
- Analysis of Uncertainties - Honolulu, HI
- Before and After Studies - Portland, OR

- **Small Starts Projects**

- Forecast Methodology - East Bay, CA & New York City, NY
- Off-Model Forecasting - Fitchburg, MA

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Task 5 Analysis of TBEST and FSUTMS for Use in FTA Applications

- **Analysis of TBEST**

- Sketch-Planning Tool
 - Ten-Year Horizon Maximum
 - Parcel Data Update in Progress
 - Comprehensive Transit Network
 - Short Run Time
- Quality Assessment
 - Basis for Reasonableness Check
 - Impacts on Existing Service
- Very Small Starts
 - Route Scenario Tests

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Task 5 Analysis of TBEST and FSUTMS for Use in FTA Applications

- **Necessary Enhancements for TBEST**

- New Modes
- Reporting System

- **Potential Enhancements for TBEST**

- Park-and-Ride Estimation
- Access Mode Specification
- Integration of TBEST and FSUTMS Transit Networks
- Database Structure Integration with TBEST and FSUTMS

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Task 5 **Analysis of TBEST and FSUTMS for Use in FTA Applications**

- **Analysis of FSUTMS**

- Solid Framework for Forecasting
- Emphasis on Flexibility and Control over Model Functions and Parameters to Reasonably Capture Local Travel Markets
- Critical Steps for Model Development
 - Initial Model Assessment
 - Quality Assurance of Survey Data
 - Model Testing
 - Peer Comparisons

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Task 5 **Analysis of TBEST and FSUTMS for Use in FTA Applications**

- **Necessary Enhancements for FSUTMS**

- Time-of-Day Modeling
- Zero-Car Distribution
- Special Market Inclusion
- Refined Transit Network Coding

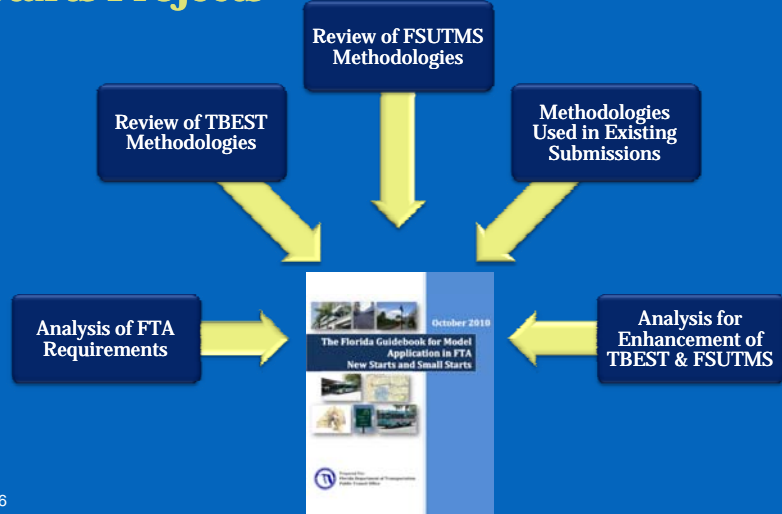
- **Potential Enhancements for FSUTMS**

- Project-Specific TAZ Disaggregation
- Reporting for FTA Purposes
- New Transit Mode Standards
- Land Use Model Application

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Task 6 The Florida Guidebook for Model Application in FTA New Starts and Small Starts Projects



Task 7 Technical Advisory Group

• Meetings

- March 15, 2010
- June 23, 2010
- August 25, 2010

• Over 20 Members from:

- FTA
- FDOT
- MPOs
- Transit Agencies
- Universities
- Consultants