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

*presented to*
Florida Model Task Force

*presented by*
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Gannett Fleming, Inc.

December 1, 2010

### Project Schedule

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**Task 2** Review Requirements

**Task 3** Review TBEST

**Task 4** Review FSUTMS

**Task 5** Review FL & National Submissions

**Task 6** Recommendations

**Task 7** Guidebook

**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

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.)
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

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
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
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

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

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
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

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
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

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

Review of FSUTMS Methodologies
Review of TBEST Methodologies
Methodologies Used in Existing Submissions

Analysis of FTA Requirements
Analysis for Enhancement of TBEST & FSUTMS

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