



Full Model Task Force Meeting

December 5-7, 2012
Orlando, FL

MEETING NOTES – December 5, 2012

Transit & Rail Committee Meeting -- *Scott Seeburger, Chair*

Attendees:

Jeanette Berk, Advanced Planning, Inc.	Wongoo Lee, Jacksonville Transportation Authority
Hoyt Davis, Gannett Fleming	Gabrielle Matthews, FDOT Central Office/CDM Smith
Michael Escalante, North Central Florida RPC	Tom Rossi, Cambridge Systematics
Diana Fields, FDOT Central Office	Scott Seeburger, FDOT District 4
Jerry Graham, Traf-O-Data	Myung-Hak Sung, Gannett Fleming
Sheldon Harrison, Cambridge Systematics	Krishnan Viswanathan, CDM Smith
Xia Jin, Florida International University	Bud Whitehead, Hillsborough County MPO
Ashutosh Kumar, AECOM	William Rol, Tindale-Oliver
Min-Tang Li, FDOT District 4	Danny Lamb, FDOT District 7
Chunyu Lu, RS&H	Colin Smith, RSG, Inc.
Dan Macmurphy, Traf-O-Data	Rosella Picado, Parsons Brinkerhoff
Steve Polzin, USF/CUTR	Bill Davidson, Parsons Brinkerhoff
David Schmitt, AECOM	Neil Lyn, FDOT District 7

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- **T-BEST Presentation (Dr. Steve Polzin, USF)**

Gabrielle Mathews (CDM Smith for Central Transit Office), introduced both the topic and Dr. Steve Polzin. T-BEST is a short-range, direct demand model developed by USF with support by the Central Transit Office to assist in preparation of Transit Development Plans, service and scenario planning, and market analysis. The Transit Office continues to support improvements to the model, the latest of which was the topic of Dr. Polzin's presentation.

Dr. Polzin explained T-BEST capabilities and functionalities, and the enhancements to convert the model from traffic analysis zone to parcel-based geography. This has resulted in more accurate representation of walk access to transit, more robust market segmentation capabilities, and a larger array of independent land use variables for travel estimation. Input data is readily derived from the Florida Department of Revenue and the U.S. Census Bureau. System attribute descriptors have been expanded to allow for BRT evaluations. Outputs can be exported to ESRI geo-database and ESRI reports. Calibration is underway and looks promising with additional sensitivity testing to be performed prior to full deployment.

- Dan MacMurphy (Traf-O-Data) asked if there is any coordination between ABM and T-BEST efforts since both rely on parcel data? Steve Polzin (USF) mentioned that data is pulled from DOR and should be consistent.
- Scott Seeburger (FDOT D4) asked how to obtain population traits at a parcel level? Steve Polzin (USF) said that capturing walk access behavior is critical. Some of the data on high density land



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use is based on historic data reflecting lower income levels; however, more recent high density development is showing higher income levels which will influence travel behavior accordingly.

- Mike Escalante (Gainesville MPO) asked if any ground-truthing was involved in checking the data. Steve Polzin mentioned that this was not done; but, verification against Census data was performed. Mr. Escalante also asked if T-BEST will be useful for LRTP updates and whether on-time performance can be a surrogate measure for congestion. Regarding usage for LRTP updates, Steve Polzin suggested changing operating speeds to match schedules. He also suggested that it is necessary to tweak transit speed to match future roadway speed due to the degradation over time produced by growth in demand. He also mentioned that Florida and the nation is going through a transition due to changes in demographics and travel behavior, but per capita changes in demand might not be growing at the same rate as in the past. Regarding on-time performance, Steve Polzin suggested that using the operating speed might be a better option for assessing congestion.
- Sheldon Harrison (CS) asked if there was any research on the quality of service effects on mode share. Steve Polzin indicated that longer distance travelers tend to be more concerned with quality of service and stop amenities as opposed to short trip makers.
- Steve Polzin (USF) mentioned that T-BEST was built to be sensitive to walk access and because it is not network & trip table based. Park and ride is a flag and not behaviorally based. Future improvements include looking into how to incorporate APC data.
- Dan MacMurphy (Traf-O-Data) asked if trails etc. are part of the T-BEST network? Steve Polzin mentioned that it is based on straight line distances only. He suggested that the focus should be on first getting the transit service quality up and then other features can be incorporated.
- Scott Seeburger (FDOT D4) asked if the Committee has a desire to investigate integrating T-BEST advancements into FSUTMS. There was some nodding of heads, so he asked the committee members to think about how to take advantage of these developments.
- **Transit Model Update (Dr. Rosella Picado, PB Americas)**

The Transit Model Update project was conducted in 2011 to improve transit demand forecasts by incorporating state-of-the-practice techniques into FSUTMS processes. These improvements were to be consistent with State and federal expectations in order to be valid for FTA Small/New Starts projects. PB Americas was contracted to conduct the Transit Model Update. A presentation of the project was made to the Transit Committee at the March 2012 Model Task Force Meeting. At that time, questions were raised as to possible costs of deploying the improvements, schedule and mechanism of deployment, relationship with Activity Based Models, training, and the need of deploying recommendations in all urban areas.

Dr. Rosella Picado was asked to provide an overview of the project and provide concepts of integrating the improvements into FSUTMS models as an aid the Committee's deliberations on the deployment issues.

Dr. Picado summarized the results of the update project that included:

- Improved Voyager PT functionality
- Additional trip market segmentation applicable to transit forecasting
- Household segmentation to include workers and income
- Auto availability choice model
- Destination choice model for distribution



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- Time of day stratification in distribution, mode choice and assignment steps
- Feedback including distribution, mode choice and assignment
- Updated mode choice nesting and parameters
- Reports on best practice for on-board surveys, model calibration/validation practice, user benefits, QC guidelines
- Development of a prototype model to facilitate deployment
- UserbenC software tool used for diagnosing issues observed in the user benefits analysis. Note that the program was created by PB as open-source previously and is made available to FSUTMS users.
- Delivery of "Case for the Project" workshops

Dr. Picado presented a framework for incorporating these improvements into urban and regional models suggesting a modular, phased implementation based on the needs of the particular study area. Implementation can be timed with on-going activities such as corridor studies or as part of LRTP planning. Training to be delivered includes the Transit Model Update Webinar already conducted, and is incorporated into the Comprehensive Modeling, Transit Modeling, and Calibration courses.

The Meeting was opened for Committee discussion on how to move forward with the project recommendations.

- o Dan Macmurphy (Traf-O-Data) gave an overview of how the implementation of the updated transit model is going on in Polk County. He mentioned that they were trying to calibrate university trips, and is very happy that there is no longer a gravity model. He also mentioned that they are trying to figure out how to calibrate mode choice and are working on improved reporting features. Overall the beta testing in Polk is going fine with the improved reporting and support from FDOT CO. Model calibration and validation is progressing and should be completed soon.
- o Mike Escalante (Gainesville MPO) suggested that the model should be able to distinguish between the transit coercive (have cars but forced to take transit due to parking not available, a particular issue in Gainesville) versus transit captive.
- o Scott Seeburger (FDOT D4) asked if the committee agrees that a strategy for implementation, maybe by model/urban area type, should be a function of the Committee. Since concerns regarding costs, implementation etc. were expressed, the committee needs to decide how to move forward. The Committee generally agreed. Dan Macmurphy volunteered to initiate a framework and issues paper and will present it to the Committee prior to the next teleconference meeting.
- **Data Driven Methodology for Small Starts Transit Corridor Studies (Ashutosh Kumar, AECOM)**

Ashutosh (Ashu) Kumar presented a data-driven analysis methodology using Cube Voyager that is being used for congestion management corridor studies in Broward County that include consideration of short-term transit improvements for potential Small Starts funding. This methodology uses trip tables developed from on-board surveys and corridor-calibrated FSUTMS networks to forecast short-term travel and user benefit impacts from service adjustments and corridor development changes. It is consistent with FTA's Notice of Proposed Rulemaking (1/25/2012) related to using simplified methods for forecasting travel behavior and user benefits based on existing data. On-board tablet surveys are used to collect origin, destination, trip purpose, boarding and alighting stops, and transfer behavior. Boarding-alighting pair data is collected, which is important for model calibration.



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- Scott Seeburger (FDOT D4) asked for more details about the ons/offers survey and corridor specific data. Ashu Kumar said that the method creates a trip table more representative of the sample. Boarders are given a card upon boarding that is returned upon alighting. This provides a rich sample of on and off location pairs which is expanded using automated passenger count (APC) data and correlated with the standard O/D data collected.
- Rosella Picado (PB) asked if it is similar to a destination choice model. Dave Schmitt (AECOM) mentioned that the objective is to serve existing riders better, so in a sense the method pivots off of actual travel patterns collected through the surveys to forecast ridership using elasticity's. This approach has been used in different cities with the acceptance of FTA.
- Steve Polzin (USF) asked how fare issues are treated since there are multiple fare modes and how does the model capture/understand these. Ashu Kumar indicated that this is not an operations model so does not consider different fare types specifically. The model implemented in Cube Voyager, is based on FSUTMS, so average fares are used. We worked with Broward County Transit to develop representative average fares considering all pass types and cash payments.
- Dan Macmurphy (Traf-O-Data) asked about the implications related to MAP 21. Dave Schmitt mentioned that the focus of MAP-21 is on cost per trip and the methodology can produce this. User benefits will still be useful for model and project QC, although MAP-21 makes this measure obsolete for project justification.

Action Items

- Committee to decide how to incorporate T-BEST with FSUTMS
- Committee to decide strategies on how best to implement transit model updates.
- Next meeting in February/March

Meeting Adjourned at 3:35 p.m.