Model Advancement Committee Notes

November 9, 2009
10:00 AM – 12:00 PM
Orlando, FL

MEETING NOTES

Attendees List:

Name	Agency/Firm	Name	Agency/Firm
Sung-Ryong Han	BCC Engineering	Chunyu Lu	Gannett Fleming
Fadi Nassar	B.E.E.s	Mike Neidhart	Gannett Fleming
Howard Slavin	Caliper	Rafey Subhani	Gannett Fleming
Keli Paul	Cambridge Systematics	Steve Infanti	Grimail Crawford
Tom Rossi	Cambridge Systematics	Dane Ismart	Louis Berger Group
Rob Schiffer	Cambridge Systematics	Wilson Fernandez	Miami-Dade MPO/MAC Chair
Krishnan Viswanathan	Cambridge Systematics	Ming Ma	North Florida TPO
Ken Kaltenbach	Corradino	Stephen Lawe	Resource Systems Group
James Baxter	FDOT District 1	David Schellinger	Systra Mobility
Milton Locklear	FDOT District 2	Jerry Graham	Traf-O-Data
Linda Little	FDOT District 3	Hatem Abou-Senna	University of Central Florida
Shi-Chiang Li	FDOT District 4	Hemant Saloche	University of Florida
Jim Fennessy	Fennessy Associates	Siva Srinivasan	University of Florida
Carl Mikyska	FHWA	Liyuan Zhao	University of Florida
Mohammed Hadi	Florida International University	Abdul Pinjari	University of South Florida
Fang Zhao	Florida International University	Daniel Funk	Wake Tek
Michael Doherty	Florida's Turnpike Enterprise/URS	Roberto Miquel	Wilbur Smith Associates
Jack Klodzinski	Florida's Turnpike Enterprise	Kazem Oryani	Wilbur Smith Associates
Eric Heinz	Gannett Fleming		

Introductions
Wilson Fernandez, Committee Chair

- Introductions
- The Model Advancement Committee (MAC) will oversee two ad hoc committees:
  - Time-of-Day ad hoc committee will be chaired by Dr. Siva Srinivasan, University of Florida
  - Toll Modeling ad hoc committee will be chaired by Dr. Fang Zhao, Florida International University
- We can have more ad hoc committees as deemed necessary.

Validation and Calibration Standards
Rob Schiffer, Cambridge Systematics

- All PowerPoint presentations are now available online at www.fsutmsonline.net
- Discussion items
  - Literature review
    - A literature review was conducted as part of the development of the report. Spreadsheets documenting the literature review are included in the appendix of the report. It was requested that the Excel versions of the spreadsheets be provided to the MAC to make it a more searchable file.
  - Challenging parameters
    - Wilson Fernandez asked what parameters are the most difficult to achieve.
    - Rob Schiffer responded that the highway assignment statistics are the most challenging; FDOT wanted to make the standards a little more challenging to meet but nothing tremendously different from before; It was found that there are a few Florida models performing at the outer limits of some of the ranges, such as for person trips per household. In addition, it was noted that there is a need for

observed data and the National Household Travel Survey (NHTS) add-on will provide a wealth of information for models throughout the state.

- o Forecasting future year model parameters
  - ▪ Roberto Miquel asked if any work has been or is being done currently related to developing a methodology for forecasting future year model parameters.
  - ▪ Mr. Schiffer responded that no examples were found during the literature review; however, with the advent of more time series travel behavior data, modelers might be able to forecast parameter settings in the future.
- o "Acceptable" vs. "preferable" standards
  - ▪ The question was asked as to the difference between "acceptable" and "preferable" standards.
  - ▪ Mr. Schiffer responded that as other guidelines from other states were reviewed, professional judgment was used to determine the reasonableness of the standards and what could be expected. FDOT wanted to strive for high standards but recognized that these may not always be achievable.
- o Benchmarks and standard ranges
  - ▪ Mr. Schiffer was asked to clarify his statement that if a model's results fall outside a range, is something wrong with the model, or is the model performing better than the preferable range.
  - ▪ Mr. Schiffer responded that if the model is performing better than the preferable range, that's even better; however, the modeler needs to evaluate what was done to get the model to perform that well on that particular statistic, verifying that the adjustments were reasonable and logical.
- o The goal of the presentation was to update the MAC on the final report and to gain concurrence from MAC today to upload the final report to the FSUTMS model users website.
  - ▪ FDOT sent the draft report out for comment to the MTF a year ago and no substantial comments were received. It will be a dynamic document over time and can be updated as necessary based on feedback over the next few years from modelers applying the standards.
  - ▪ Mike Neidhart made a motion to upload Calibration and Validation Standards Report to the FSUTMS website; Roberto Miquel seconded the motion; All approved.

Action Items
- Make literature review spreadsheets readily available to MAC.
- Upload Calibration and Validation Standards Report to www.fsutmsonline.net.

Trip Generation and Trip Distribution Review and Recommendations
Ken Kaltenbach, Corradino
- All PowerPoint presentations are now available online at www.fsutmsonline.net
- Discussion items
  - o Trip Generation
    - ▪ ITE trip data
      - • Jerry Graham asked if trip generation models by time-of-day would utilize more detailed Institute of Transportation Engineers (ITE) trip data that would capture for instance, large malls that may not be accounted for in the four-step travel demand model. Ken Kaltenbach responded that it can be difficult to get good data, however, if it is indeed available, it should be used (such as

ITE). Both Mr. Graham and Mr. Kaltenbach agreed that time-of-day modeling should begin in the Trip Generation step of the four-step modeling process.

- Children and retiree variables
  - It was asked if there was any benefit to disaggregating trips by children, no children, and retiree. Mr. Kaltenbach responded that this is done in the Tampa Bay region (retire v. non-retiree) and it may benefit some other areas as well. The Southeast Regional Planning Model (SERPM) uses children v. no-children.
- Area type
  - Tom Rossi noted that area type is a lumpy variable and five to six area type categories are typically used in a region. In addition, the area type of a zone could easily change from the base year to the future year. Mr. Rossi asked if there was any consideration to using development density or other variables as a proxy for defining area types. Mr. Kaltenbach responded that it is currently not included in scope of the Trip Generation report but it could be considered.
- Internal trips
  - Mr. Rossi asked what variables, besides household and employment data, would we use knowing that the location of the zones inside the region have an impact of how many Internal-External (IE) and External-Internal (EI) trips are generated. Mr. Kaltenbach responded that this was not addressed as part of their trip generation review. However, in SERPM, IE trips compete with the Internal-Internal (II) trip ends. In some instances, it helped and in others, it did not, as there was a problem getting long distance trips to penetrate the region very far.
  - o Trip Distribution
    - Mr. Kaltenbach presented briefly on Distribution report recommendations due to time constraints.
    - No discussion on Distribution report due to time constraints. Report will be provided to the MAC members for review and comment at a later date.

Action Items
- FDOT to distribute draft Generation and Distribution reports to MAC for comment and will follow up with a MAC teleconference to discuss comments.

Statewide Needs Assessment for Next Generation Travel Demand Models
Siva Srinivasan, University of Florida and Abdul Pinjari, University of South Florida
- All PowerPoint presentations are now available online at www.fsutmsonline.net
- Discussion items
  - o Dr. Srinivasan noted that in addition to short-term improvements to Florida travel demand models, FDOT wants to think ahead about long-term revolutionary changes to our model structures. Dr. Srinivasan asked the MAC for any feedback they may have on long-term priorities.
  - o It was suggested that Dr. Srinivasan and Dr. Pinjari look at efforts conducted through the Transportation Model Improvement Program (TMIP) to determine how successful different applications have been and what improvements were found to be useful.
  - o Roberto Miquel asked what evaluation criteria or measures will be used to recommend specific long-term priorities. Dr. Srinivasan responded that they will be evaluated based on

resource availability, such as data, run time, and costs. In addition, model systems can support multiple planning needs. As a result, those structures that answer the most questions will be highly considered contingent upon resource availability. Lastly, the criteria will be primarily qualitative based on survey priorities.
- o Ming Ma asked if the process will evaluate software that is currently available in the market to utilize visualization techniques and not be DOS-based. Dr. Srinivasan responded that the process will be inclusive of software developers to determine what can be made available to us in the next five to ten years in order to run the new evolution of models.
- o Wilson Fernandez noted that the scope for Dr. Srinivasan and Dr. Pinjari seems to cast a wide net and should probably be refined further to include more focus. FDOT will distribute the proposed scope to the MAC for comments so that is can be better tailored to serve MTF needs.

Action Items
- FDOT to distribute proposed scope to the MAC for comments and further tailor the scope so that it can be better tailored to serve MTF needs.

Time-of-Day and Advanced Toll Panel Discussion Outcomes
Dr. Fang Zhao, Florida International University
- Toll modeling ad hoc committee summary from this morning's meeting:
    - o Dr. Zhao noted that Jim Fennessy gave a presentation on the history and evolution of toll modeling.
    - o The question was raised as to whether we should consider income to get a better handle on choices for different toll options.
    - o The outcome of the meeting was to circulate the toll modeling scope (after the December scoping meeting) to the Tolling ad hoc committee for comments and then begin teleconference meetings for milestone progress reports.

Dr. Siva Srinivasan, University of Florida
- Time-of-Day (TOD) ad hoc committee summary from this morning's meeting:
    - o Dr. Srinivasan noted the need for TOD modeling and that Krishnan Viswanathan gave a presentation on the draft scope for implementing TOD models in Florida.
    - o A request was made to provide constant TOD factors within the next 3-4 months.
    - o The TOD models should be in place in time for next LRTP update cycle.
    - o The ad hoc committee suggested revising the TOD scope to reflect the following:
        - Apply TOD factors after Trip Generation instead of after Distribution.
        - Develop individual TOD factors for Orlando, Tampa, Jacksonville, and southeast Florida, as well as for university and tourist dominated areas.
        - Include development of new CONFAC values as a result of peak spreading.
        - Validate speeds to make sure predicted TOD values are reasonable.
    - o The scope will be finalized and circulated to the rest of the TOD ad hoc committee.

Meeting participants that signed into this morning's meeting will be added to the MAC membership list.

Meeting Adjourned at 12:05 PM