

**Mn/DOT Travel Demand Modeling Coordinating Committee  
Meeting Summary – September 8, 2005**

**Committee Members**

Lance Bernard, Anoka County  
Ron Chicka, Duluth – Superior MPO  
John Crawford, URS  
Ranjani Dasiga, Mn/DOT-TDA  
Tom Faella, LaCrosse-LaCrescent Area Planning Council  
Mark Filipi, Metropolitan Council  
Greg Gaides, Parsons  
Gene Hicks, Mn/DOT-TDA  
Terry Humbert, Mn/DOT District 3 – Brainerd  
Brian Isaacson, Mn/DOT Metro District  
Jonette Kreideweis, Mn/DOT-TDA  
Susan Moe, FHWA  
Steve Ruegg, PB Consultants  
Jaime Sloboden, SEH Consulting  
Dave Then, St. Cloud Area Planning Office  
Phil Wheeler, Rochester Council of Governments  
Steve Wilson, SRF Consulting

**Welcome, Introductions and Charge to the Committee**

- Jonette Kreideweis welcomed committee members. Background information was shared on why the committee has been established and Mn/DOT management expectations for the group.
- Susan Moe, from FHWA, whose background includes teaching the FHWA course on travel demand modeling to state and local participants, commented on the importance of travel demand modeling to FHWA. FHWA would like to ensure that capacity building, best practices and consistent approaches are in place to provide good data and forecasts for projects and programs. She is looking forward to being involved in Committee activities.
- Gene Hicks gave an overview of the charge to the committee. He said the committee will meet quarterly to:
  - Share information on modeling activities, best practices and innovations
  - Facilitate discussion and resolution of issues
  - Promote consistency in models, assumptions and networks
  - Encourage coordination of modeling results within and between metropolitan areas
  - Provide input to other CTS and ITE travel demand modeling groups
  - Recommend research and improvements in tools and methods

## **Overview of Travel Demand Modeling Activities**

- ***Rochester Council of Governments – Phil Wheeler***

Updates utilized the travel demand model in Rochester and traffic trends in areas of the county not planned to be urbanized. The urbanized area travel demand model (in TRANPLAN) is based on commercial/service and industrial floor area by type and forecasts of housing units by type, distributed among TAZs. ROCOG is happy with the results. Assumptions about population changes, women participation in the workforce, migration rates in and out of the region and land use changes have tracked well over time with what has and is occurring. Data are used to forecast when capacity improvements will be needed. They are also used to assist in reviewing traffic impact reports that are prepared for certain types of development. There are still some issues with making assumptions about mixed-use developments. ROCOG is learning and making the transition to CUBE. They hope to extend their travel demand model to the balance of the county. They are also building a roadway network database. The roadway network GIS layer is expected to be done in 2006.

- ***St. Cloud Area Planning Office – Dave Then***

St. Cloud started using TRANPO in the 1980's for travel demand modeling. They migrated to TRANPLAN in the 1990's and are now starting to use CUBE. The 2030 plan is land-use based and incorporates all vehicle trips. Mode choices are not included. The model was calibrated using considerable data from ground counts. They are finding that land use forecasts built into the model have been conservative. Twenty-year forecasts of land use and trips are being met in 13-14 years. Getting jurisdictions to agree on growth assumptions has been challenging.

- ***LaCrosse-LaCrescent Area Planning Council – Tom Faella***

Approximately 95% of the urbanized area is in Wisconsin. The Wisconsin DOT rebuilt all travel demand models in 2003. At about the same time, the LAPC experienced a total turnover of staff. HNTB built the network inventory from GIS files supplied by the LAPC. Population and employment levels were assigned to TAZs using CTPP data. Base level data for 2000 were allocated to TAZs and then assigned growth rates to develop 2030 projections. The plan update incorporates a series of development scenarios that build on population projections developed by the University of Wisconsin, environmental considerations, project deficiencies and 2000 traffic counts. Trip rates were developed by Wisconsin using the National Household Travel Survey (NHTS).

- ***Duluth-Superior MPO – Ron Chicka***

Preparing the last plan update was a real challenge. They lost staff and found it virtually impossible to get good origin-destination data for the Minnesota side of the metropolitan area. URS maintains the model. The Wisconsin DOT provided resources to do origin-destination surveys on the Superior side. In Minnesota, data were derived using NCHRP simulation guidelines without validation from recent ground counts. (The last surveys were done over 30 years ago.) Mn/DOT District 1 used the MPO plan update in their District long-range plan.



- ***Metropolitan Council – Mark Filipi***

The Metropolitan Council has a history of using TRANPLAN supported by data provided by travel behavior inventory studies that are done every 10 years coinciding with the decennial census.

The last travel behavior inventory included an external station survey of counties surrounding the Twin Cities metropolitan area due in part to a legislative mandate requiring an audit of the overall commuter shed (7 Twin Cities metro area counties, 187 jurisdictions and 13 adjoining counties). Video captured license plate numbers were sent to the Department of Public Safety for address matching and home surveys were sent to get a better idea of long distance and pass through trips. PB managed the travel behavior inventory. They found that external trips made up less than 20% of total trips, but represented more than 25% of VMT.

The Metropolitan Council model update includes peak and off-peak trips, transit ways, rails, HOV, bike, and walking trips. They are planning to do additional on-board transit surveys. The model took advantage of new data from the Department of Employment and Economic Development (DEED) that links place of work data with place of residence data to produce origin-destination flows. A new tool with a graphic interface is in beta testing from the Census Bureau using these data. (The group expressed interest in learning more about these data and the applications being developed.)

Mark noted that there continues to be issues in reconciling small area forecasts with the regional model. (Brian Isaacson and Mark indicated that Mn/DOT's Metro District has come up with guidelines for preparing small area forecasts. The guidelines include thresholds for assessing the reasonableness of results.) Other topics that merit further study include impacts on the model from road pricing and hot lane conversions; use of shoulders by buses; effects of changes in parking rates; the influence of higher fuel costs. (Phil Wheeler noted that Rochester has some experience in looking at how Mayo Clinic parking rates influence transit ridership. Phil also referenced an AMPO study that provides background information on how to model parking considerations.)

- ***Anoka County – Lance Bernard***

Anoka County is wrapping up its first model. They used the Metropolitan Council model, added 3,000 links and divided the network into smaller TAZs. URS did the work. They are in the process of sharing the information with cities in the county so that they can look at synchronizing local projects and plans with the regional model.

- ***Mn/DOT Central Office Update – Gene Hicks***

Gene Hicks spoke on the status of travel demand modeling activities in Mn/DOT's Office of Transportation Data and Analysis (TDA). A copy of the presentation is attached. Gene noted that:

- TDA is strengthening the role it plays in travel demand modeling. In the last year, review and approval of all traffic volume forecasts, ESAL forecasts and travel demand modeling forecasts for major projects were reassigned to TDA.
- TDA is also working to provide greater support and technical assistance in travel demand modeling activities. For example, the office purchased CUBE licenses for Mn/DOT district offices and MPOs and has hosted several training classes on travel demand modeling.

There were several questions about Mn/DOT's process for reviewing and approving traffic and travel demand modeling forecasts and about the status of statewide model development. It was noted that TDA could provide a useful role by sponsoring a statewide survey to collect better trip-making data.

▪ ***Mn/DOT Metro District Update – Brian Isaacson***

Recent Metro District activities have focused on making connections and establishing sound relationships between project level design operations modeling and traditional travel demand modeling. They are working on increasing communications earlier in the process before forecasts are produced. A key objective is developing consensus on assumptions and ensuring that everyone involved in project development understands the balance between managing the scale of the project and managing the scope of the forecast. In 2003, the Metro District developed a set of guidelines and expectations for preparing traffic forecasts. The guidelines establish ranges (thresholds) for expected forecast volumes based on the Metropolitan Council model and other assumptions. (Several members of the group asked if a web link to the guidelines could be made more visible; e.g., perhaps added to the TDA website. Comments were also made that differences between traffic and ESAL forecasting expectations need to be clarified.) Brian noted that Metro District personnel are working on the traffic data language and forecasting expectations included in Request for Proposals (RFPs).

Brian also mentioned the collar county study that is underway. Consultants CSI and SRF are leading the study. The goal is to get better data on surrounding county travel patterns that influence trips in the Twin Cities metro area. Trend analysis and regression forecasting is becoming less reliable as more and more development occurs in the collar counties. Roadside surveys are being done on 2-lane highways if they have shoulders and on 4-lane highways where traffic volumes and speeds make it safe to pull people over. Mode choice considerations are being incorporated. They hope to be able to look at consistencies between local and regional plans and other planned infrastructure investments (roads and sewers). The study is expected to be completed in the second quarter of next year.

▪ ***Other Updates***

- The group discussed the work Eil Kwon of Mn/DOT is doing regarding options and applications for operational modeling. The group stressed the importance of matching the selection of a particular software application with

the reasons why you want to do operations modeling. It may not be possible to completely blend all objectives in one software package. Costs of acquiring modeling software, consistency with regional travel demand modeling practices, GIS capabilities and other factors should all be considered.

- It was noted that Iowa has established a Midwest Travel Modeling Users Group (MTMUG). All MPOs participate with the goal of sharing technical expertise and expanding skills and capabilities. They have a mailing list and a web site for those interested in meeting summaries.
- The North Central ITE has established a Planning Methods and Applications Committee. They are trying to work with the University of Minnesota's Center for Transportation Studies to identify and promote research opportunities for addressing Mn/DOT and MPO needs and issues affecting the region.

### **Overview of Other State's Modeling Committees – Ranjani Dasiga**

Ranjani Dasiga gave a presentation on what she has learned about modeling committee activities in other states and metropolitan areas. A copy of her presentation is attached.

### **Miscellaneous Updates**

- Jonette Kreideweis provided information on two National Cooperative Highway Research Projects (NCHRP) that are investigating state of the practice in metropolitan travel demand modeling and statewide traffic forecasting.
- Jonette also shared copies of an issue paper she put together for an AASHTO Standing Committee on Planning discussion on traffic and travel demand modeling issues, challenges, and needs.

### **Facilitated Discussion on Potential Topics and Issues for Coordinating Committee Involvement**

The group spent the remainder of the meeting generating ideas, topics and issues for Coordinating Committee involvement. The list generated is attached. It, and a consensus on priorities of the topics involved will be discussed at the next meeting.

### **Next Meeting**

The next meeting will be held in December – hopefully, the afternoon of an MPO Directors meeting. Tentative agenda items include:

1. Continue discussion of topics and issues for coordinating committee involvement
2. Presentation on work underway to produce flow data from labor statistics
3. Metropolitan Council's adaptation of the FHWA Freight Analysis Framework
4. Update on the Collar County Study
5. Overview of the interface between simulation and modeling on the I-694 project

**-- Coming soon new committee website:**

**<http://www.dot.state.mn.us/tda/html/mtdmcc.html>**

## Topics & Issues for Coordinating Committee Involvement – Facilitated Discussion

The Mn/DOT Travel Demand Modeling Coordinating Committee will be a working committee with actionable results. The group participated in a facilitated discussion to identify potential topics and issues for Coordinating Committee involvement. The following themes, topics and issues were identified:

### ***Training, Support and Research***

- ❖ Improve knowledge of land use modeling
- ❖ Provide guidance on forecasting employment
- ❖ Improve land use and demographic forecasting skills and expertise
- ❖ Technical assistance in building and using models
- ❖ CUBE:
  - Training
  - User support group
  - Standardizing the application to take advantage of software capabilities
- ❖ How to better project trip generation rates for mixed use developments
- ❖ How to reconcile data results from different sources
- ❖ How to account for and incorporate the effects of rising gas prices

### ***Coordination and Communication***

- ❖ Keep community of forecasters current on new developments
- ❖ Share expertise
- ❖ Share information on latest studies and research
- ❖ Set up a standing committee that informs all parties on state of the practices. Committee must be a long-term endeavor of the State.
- ❖ This group could be a forum for information exchange/expertise sharing in travel demand forecasting.
- ❖ Can we develop our own list serve? Or our own web site for sharing information?

### ***Data***

- ❖ Data sharing; e.g., web site
  - GIS data
  - AADT
  - Existing number of lanes
  - Functional classification
  - Speeds
  - Model documentation
  - Model scenarios/data/sets/updated information records
- ❖ Make data on traffic characteristics more available to all who do traffic forecasting
- ❖ Frequently update socio-economic data and make it more available
- ❖ Leverage resources for future data collection activities
- ❖ Provide access to more accurate and up-to-date employment data

- ❖ Establish methods for sharing information with MPOs on an ongoing basis
- ❖ Provide better data sources for out-state areas not included in MPO boundaries
- ❖ Origin-destination and other survey data for model validation
- ❖ Behavioral data collection, HIS, external trips and transit
- ❖ Statewide internal to internal travel survey data

***Travel Demand Modeling Process, Procedures and Application Issues***

- ❖ Clarify and define Mn/DOT's policy and guidelines for forecasting
  - Calculating results
  - Review and approval
- ❖ Improve DOT use and application of forecasts throughout project development process
- ❖ Enhance project awareness – can Mn/DOT post projects that have approved forecasts with reference to study or document?
- ❖ Consistency in approaches
  - Provide a statewide approach that enhances consistency in application
  - Maintain consistency between agencies. Inform one another when changes are made to the regional model.
  - Coordinate modeling procedures and practices among Districts, Mn/DOT MPOs and consultants
  - Enhance consistency of forecasting assumptions between areas at boundaries
  - Coordination of model and forecast results at borders and between MPOs and states
  - Provide a holistic, comprehensive, systems-level approach for resolving issues that may arise from overlapping model areas – not project by project; e.g., St. Cloud and Metro
- ❖ Models vs. trend analysis vs. statewide modeling
  - Cost effective use of travel demand modeling vs. trend analysis – is a statewide model cost effective in low growth areas?
  - Evaluate the pros and cons of developing a statewide model
- ❖ Best practices with origin-destination information – ways to advance model capabilities in smaller MPOs
- ❖ Operational models
  - Addressing linkage issues with operational models
  - Develop a recommendation regarding traffic forecasting and operational model issues
- ❖ Freight
  - Provide recommendations for incorporating freight and other modes into travel demand forecasting models.
  - Ensure local levels have ability and capabilities to access models
- ❖ Quality assurance
  - Assessment of sources of most significant errors and quality improvement for error sources