




NATIONAL CAPITAL REGION
TRANSPORTATION PLANNING BOARD

Item #5

MEMORANDUM

December 11, 2014

TO: Transportation Planning Board

FROM: Kanti Srikanth
Director, Department of Transportation Planning 

RE: Letters Sent/Received Since the November 19th TPB Meeting

The attached letters were sent/received since the November 19th TPB meeting. The letters will be reviewed under Agenda #5 of the December 17th TPB agenda.

Attachments



NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD

December 3, 2014

Mr. Shyam Kannan
Managing Director, Office of Planning
Washington Metropolitan Area Transit Authority
600 5th Street, NW
Washington, DC 20001

Dear Mr. Kannan:

Thank you for your letter of October 30, 2014 to the Chairman of the National Capital Region Transportation Planning Board (TPB), the Honorable Patrick Wojahn, which provided suggestions for improving the TPB travel model's treatment of transit and non-motorized modes. I am happy to respond to the letter upon advice from the Chairman. I have reviewed the specific recommendations you have advanced and offer the following brief responses. I believe that further discussion is warranted on some specific aspects of some of your suggestions.

TPB staff has already made substantial progress improving the model's treatment of transit and non-motorized modes over the past four years. The currently adopted (Version 2.3) travel model now includes a more detailed Transportation Analysis Zone (TAZ) system, which has increased from 2,191 TAZs to 3,722 TAZs. The model also includes an updated mode choice model that includes a more detailed transit choice set: 11 transit modes (up from 2 previously). While these refinements represent advances to our travel forecasting capabilities, we agree that more can be done.

As you know, TPB staff maintains an ongoing travel model development program with the assistance of a consultant. This arrangement has proved to be an effective approach for identifying best practices and for implementing improved methods into the TPB's travel forecasting process. TPB staff is currently working with Cambridge Systematics, Inc. (CS) to formulate a strategic plan for the TPB's Models Development program. The plan should be completed by June 30. We will share your suggestions with CS as part of the effort.

Technical discussions pertaining to the regional travel demand model normally occur at meetings of the Travel Forecasting Subcommittee (TFS). We welcome WMATA's participation at TFS meetings where these and other such matters can be discussed in detail with TPB staff, as well as the technical staff from the member jurisdictions and the consulting community. The TPB staff appreciates WMATA's past participation with the TFS, including its service in chairing the subcommittee during 2009 and 2013. TPB staff also offers to meet with TPB member agencies to discuss technical modeling issues on an as-needed basis. One such meeting occurred at WMATA headquarters on September 12, 2013 and we will be happy to meet again to further discuss the suggestions in your October 30, 2014 letter.

WMATA Suggestion #1: *In the current model, Metrorail and light rail are grouped together in the same category, whereas BRT and streetcar are grouped with express and local bus in the same category. While differences among these modes are clear in reality, without a model that reflects true differences of each investment, decision makers are unable to truly understand the attractiveness and impacts of each mode.*

TPB Staff Response: The current mode choice model output distinguishes transit trips by access mode and linehaul mode (commuter rail, bus-only, Metrorail-only and Metrorail-bus). You correctly state that the existing choice set assumes “Metrorail” trips include light rail and “bus” trips include BRT. Nonetheless, it is important to note that while light rail and BRT *trips* are grouped into these broader categories, explicit light rail and BRT *link volumes* are currently produced by the model as a standard output, which we believe will help decision makers understand the attractiveness and impacts of these different types of transit.

We agree that a more detailed mode choice set that explicitly distinguishes light rail and BRT trips separately would be desirable. However, the lack of locally observed travel data for these two sub-modes is an obstacle to estimating a model incorporating these two sub-modes explicitly. It is also important to note that providing the model with the explicit capability to “truly understand the attractiveness” of light rail and BRT is a challenge, given that conventional mode choice modeling focuses solely on relative times, costs and modal bias constants as a basis for estimating a choice probability. Other service attributes that are relevant to light rail and BRT (for example reliability and comfort) are not explicitly addressed by conventional models. A review of how other metropolitan areas are addressing light rail and BRT modes within the mode choice process in their regional travel demand models is a worthy endeavor.

WMATA Suggestion #2: *As traffic grows, bus speeds continue to slow, and reliability and capital and operating costs are affected. In the current model, bus run times are independent of the level of traffic and subsequent traffic speeds. By further developing the model to integrate bus speeds with that of general traffic, decision makers will have a better understanding of the impacts of the myriad of the bus priority measures, especially right-of-way improvements, and their effect on ridership.*

TPB Staff Response: The current modeling process includes procedures for linking bus speeds to forecasted highway speeds. However, the current approach moderates bus speeds based on a global factoring approach rather than an approach that considers detailed highway network link-level speeds. There are benefits and potential problems with moving toward a more detailed approach. We agree that a review of how other areas are treating transit speed degradation would be useful. No matter how future bus speeds are related to highway speeds, the ability to reflect bus priority measures will be a challenge in a regional travel demand model, given the aggregate scale of the network used in the model. In general, TPB staff would submit that this type of analysis is better conducted in a project-planning context. In cases where one chooses to use the regional model for such analyses, one must keep in mind that incorporating bus priority measures will add complexity to network coding procedures.

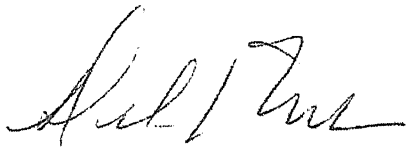
WMATA Suggestion #3: *Bicycling and walking to transit is the main mode of access for much of our ridership. It is also increasing in mode share across the region, especially in the core and central jurisdictions and some of the regional activity centers. In the past two years, the TPB's geographically-focused survey on non-motorized transit has provided a better understanding of bicycling and walking mode shares, especially in regional activity centers. WMATA would like to see this effort integrated into the model. Additionally, adding a non-motorized mode to the mode choice model would better reflect walking and biking when changes to surrounding land use are made. A better representation of biking and walking in the model would help the accuracy of station access modes.*

TPB Staff Response: Non-motorized modes are represented in the current TPB travel demand in two ways. First, they are represented as one of the access modes to transit. Second, they are represented as a primary mode in the trip generation step of the model, though they are not carried forth into subsequent modeling steps. You are advocating that we 1) incorporate data from the geographically focused (GF) household travel survey into the travel model; and 2) add non-motorized modes to the mode choice model. Regarding your first point, TPB staff has used the GF survey data to enhance the way that non-motorized travel is represented in trip generation. We agree that the GF survey data, combined with data from the 2012 Metrorail Passenger Survey, can further be used to enhance the model.

Regarding your second point, the proposal to add biking and walking trips, as a primary mode, to the mode choice model has been considered by TPB staff in the past. Staff has been hesitant to proceed with adding non-motorized travel to the distribution and mode choice steps because most of these trips occur beneath the scale of the regional TAZ system and the transportation network. TPB's recent migration to a more detailed TAZ system may make this proposal more viable. We will follow up on this suggestion with our consultant.

In closing, as noted earlier, TPB staff would be happy to meet with you and your travel demand modeling staff to discuss your recommendations in greater detail, and we appreciate your interest in our technical methods. In the meantime, we urge WMATA to maintain a presence at our TFS meetings to ensure that TPB staff considers your needs, along with those of the other TPB member agencies, as we move forward with the TPB's travel model development plans.

Sincerely,



Ronald Milone
Travel Forecasting Program Director, COG/TPB

CC: Kanathur Srikanth, COG/TPB
Mark Moran, COG/TPB
Patrick Wojahn, TPB Chair