Highlights of the TPB Travel Forecasting Subcommittee Meeting
Held on Friday, July 18, 2003

Bill Mann of Virginia Department of Transportation chaired this meeting.

Item 1: Approval of March 21, 2003 Meeting Highlights

The highlights were approved as written.

Item 2 & Item 3: Models Development and Network Development Reports

Ron Milone introduced the staff's presentation of FY-2003 work activities. He distributed three documents:

1) - FY-2003 Models Development Program for COG/TPB Travel Models Report (Draft)
2) - FY-2003 Network Documentation: Highway and Transit Network Development (Draft)
3) - a 'hard-copy' of the power-point presentation describing staff activities

He stated that the distributed reports would be in draft pending a 30-day period of review and comment.

Mr. Milone stated that the models development program is now in a transitional phase given that the Version 2.1/TP+, C model has been completed during the first half of FY-2003. The model has been brought 'on-line' for production use in regional studies. COG/TPB has not yet offered Version 2.1 training in a formal classroom setting, but 'one-on-one' training was provided during FY-2003 for selected COG/TPB staff members. COG/TPB staff will provide additional opportunities as part of the FY-2004 work program.

Mr. Milone reminded the subcommittee that an on-going peer review process of the Version 2.1/TP+ model was currently underway. The review is being conducted at the request of the TPB (per a resolution made last November) in order to assess how well the model meets federal requirements. The model review is being overseen by the Transportation Research Board (TRB). TRB has established a seven-person peer review committee comprised of a chairman, 2 consultants, 2 academicians, and 2 MPO model practitioners. The two products of the review will be:

- A letter report stating the committee's assessment of 1) COG/TPB's travel model performance, and 2) COG/TPB's post-processor for forecasting mobile source emissions (due June 30, 2003).

- A letter report providing guidance on future activities relating to the models program, including advanced modeling directions, data, and zone system considerations (due December 31, 2003).

Mr. Milone closed his presentation by informing the TFS that COG/TPB has not yet received the first letter report, but anticipates receiving it in the near future. He added that Bill Mann has expressed a desire for the TFS to play an active role in reviewing the peer review committee's findings. He also added that it is important that local agencies keep posted with the peer review process, as the resulting recommendations will be potentially strong determinants of development activities occurring over the next several years.

Mark Moran presented a review of practice for airport choice and ground access mode choice models. He began his presentation with a brief description of these two types of models. Airports are "special generators," because their trip generation characteristics are different from the default trip generation models used in the four-step model. One of the motivating factors behind this project was to improve the representation of special generators, such as airports, in the COG/TPB travel model. The goal of the project was to begin development of a more formal airport access demand model and to review both airport choice models and airport ground access mode choice models in use in the U.S.

Mr. Moran briefly discussed a series of case studies regarding airport models. Eight agencies were contacted in seven major cities: Atlanta, Boston, Chicago, Los Angeles, New York, Portland, Oregon, and San Francisco. His presentation mainly focused on case studies in Portland, Oregon and San Francisco. In conclusion, he stated that Atlanta and Portland both use similar modeling procedures. Despite the fact that these are one-airport cities, their airport models have features that COG/TPB may wish to emulate in a future airport model. San Francisco's airport model, ACCESS, also provides a good example of the direction COG/TPB may want to proceed, especially given the fact that both San Francisco and Washington, D.C. have three commercial airports and both cities have had similar air passenger surveys. He recommended that staff proceed with the development of a calibration file for estimating an airport model. The subcommittee agreed with this recommendation.

Mr. Mann commented that in order to forecast the number of passengers, you must first forecast flight schedules and wondered who would forecast the flight schedules. Mr. Moran agreed that, to apply a disaggregate model like that used in San Francisco, one would need to supply baseline flight schedule information. For a current year, this could be obtained from a third-party vendor, such as OAG (Official Airline Guides). For a future year, one would need to make assumptions about how the schedules would change or remain the same. Another member asked if the FAA forecasts flight schedules? Mr. Moran replied that FAA forecasts enplanements (passenger boardings).

Ron Milone commented that much work would be needed to code all of the airport access modes for each of the three commercial airports into the COG/TPB transportation networks. He also commented that air passengers typically account for only about half of all ground access travel to the airport.

Hamid Humeida presented an exploration of less intrusive travel survey designs to reduce non-response. He began his presentation with reasons why COG/TPB should explore new survey designs. He indicated that with the completion of Version 2.1/TP+ models COG/TPB staff is looking toward the next generation of forecasting models. The TPB peer review is expected to assist in setting goals for both surveys and models. Hamid defined the problem of non-response, its causes and alternative solutions to address it. The alternative solutions include recent improvements of standard survey procedures and protocols, the use of multi-method multi-mode approach and the use of new technologies such as GPS/GIS, the Internet and mobile communication system.

In conclusion, Mr. Humeida recommended that time and resources be allocated for planning and documentation of all stages of future surveys, adoption of improved procedures and multi-method approach to reduce non-response. Other recommendations include using pre-test, focus groups and pilot surveys to improve survey design and to identify the non-response problem; evaluating the effectiveness of different incentive schemes and the use of GPS/GIS technology.

The Chair commented that under-reporting, over-reporting and non-response were three major problems concerning surveys. In his opinion, under-reporting of short distance trips have a serious impact on the modeling process. There was some discussion about the reasons why the MTC survey achieved a low response rate.

Robert Snead distributed the FY-2003 Network Documentation: Highway and Transit Network Development Report (Draft) to the subcommittee. He gave a brief overview of network development activities in FY-2003, which consisted of network maintenance and Air Quality Conformity and SIP network development.

Item 4a. VMT Tracking Requirements: Estimated Travel Vs HPMS

Michael Freeman with the COG/TPB staff presented this item. He distributed a memorandum entitled " Comparison of MWCOG/TPB Forecasted VMT with FHWA's Highway Performance Monitoring System (HPMS) VMT" to the subcommittee. He began his presentation by explaining that EPA requires non-attainment areas to compare VMT forecasts used in air quality conformity determinations with observed data from FWHA's HPMS reports and make any appropriate adjustments, including SIP revisions, where needed.

Mr. Freeman presented a table from the distributed memo that included comparisons between estimated VMT from COG/TPB's Version 2.1/TP+ model and observed VMT from HPMS. The table included values for the years 2000 and 2001 for each major jurisdiction (D.C., Maryland, Virginia) in the Washington region. In each instance, the estimated VMT was higher than observed VMT.

Mr. Freeman commented that the growth in observed VMT between 2000 and 2001 appeared to be higher in DC and MD than in previous years. Steps are being taken to gain an understanding of these high growth rates within a single year.

Bob Moore asked if empirical data were used to factor observed VMT for MD and VA by 10% to adjust from average daily VMT to average weekday VMT? And if so, where is this information documented?

Michael Freeman replied that it is standard practice to indicate that average weekday traffic is 10% higher than average daily traffic. Mike Clifford added that a case study report documenting this information was done 10 years ago and was adopted as standard practice.

Ron Milone added that the Federal Travel Trends report footnotes VMT by state and cites 10% adjustments to convert from average daily VMT to average weekday VMT.

Mike Clifford noted that Stafford County has been excluded from this VMT comparison, consistent with comparisons performed in previous years. This practice started because in the 1990's VDOT did not include Stafford County in the Northern Virginia totals transmitted to COG/TPB for VMT tracking. Although HPMS data later became available on a county level, COG/TPB continued to exclude Stafford County in order to consistently observe annual growth trends over time. However, a base year of 2000 will now be used for reporting annualized growth rate trends, and Stafford County should be included in this and future VMT tracking reports.

Mr. Freeman added that he would update the values to include Stafford County.

The subcommittee received the information and had no further questions or comments.

Item 4b. Household Travel Survey

Bob Griffiths presented this item. He distributed a handout entitled "Assessment of COG/TPB Household Travel Survey Quality". He then briefly discussed techniques used in conducting the Household Travel Survey (HTS) and the methods used to address different types of non-response bias. He stated that it was very important to distinguish between the different types of non-response in developing innovative new methods to minimize non-response bias in travel surveys. He also added that control total checks and comparison with other data sources were imperative in determining whether or not data collected in household travel surveys contained any systematic biases.

Mr. Griffiths noted that control total checks performed for the 1994 COG/TPB HTS showed that the expanded, weighted household travel survey data matched household and population totals very well. Similarly, average persons per household, workers per household and vehicles per household values computed from the weighted HTS data compared very well at the county level with 1990 Census Transportation Planning Package (1990 CTPP) data for these items. Additionally, Mr. Griffiths stated that the expanded HTS data estimated total daily transit trips in the region within a few thousand trips of an independent estimate of daily transit ridership in the region developed from transit ridership statistics. These two independent estimates of daily transit trips were within 1% of each other. Thus, Mr. Griffiths stated he believed that these control total checks and comparisons with other data from different sources provided a high degree of confidence that the 1994 HTS data were unbiased, appropriately weighted, and representative of total daily travel in the region.

Mr. Griffiths explained that the biggest non-response issue in recent household travel surveys was the significant drop in initial household recruitment rates. The percentage of eligible households agreeing to participate in travel surveys has declined from about 50% in 1994 to about 30% today. Thus, today, approximately two-thirds of the households randomly selected for participation in regional household travel surveys either refuse to participate when first contacted about the survey or simply do not answer their telephone despite repeated call backs at different times over multiple days. Advances in consumer telephone technology, caller id, answering machine, and widespread use of wireless mobile telephones in lieu of land lines has made it much more difficult to recruit a truly representative sample of households using the Random Digit Dialing (RDD) methods that have been most commonly used for such surveys during the past 15 years. He noted that the current thinking about this non-response problem is that future travel surveys need to consider the use of multiple data collection techniques -- telephone, mail, personal interview, Internet, wireless phone – in a single survey effort to permit different types of households to participate in the way of their choice. Additionally, local jurisdiction GIS address databases may provide a better, more complete sample frame for household travel surveys than the RDD methods that have been traditionally used in recent years. He further noted that while multiple mode surveys could address some non-response problems, such surveys would be much more complex and costly to conduct.

Mark Moran asked if it was possible to encourage people to participate in the survey using some sort of 'sweepstakes' technique? Mr. Griffiths responded that typically "sweepstakes" or other monetary incentives were used to get households that already agreed to participate in the travel survey to complete their travel day survey travel diaries and provide this information to survey interviewers. Mr. Griffiths further responded that travel diary retrieval rates were not that big of a non-response problem in our surveys because we were still getting travel diary retrieval of 70%-75%. He noted that these retrieval rates were the same or higher than the diary retrieval rates

achieved in other metro areas that had offered "sweepstakes" or other monetary incentives in conducting their household travel surveys. He also noted that it would be somewhat difficult and costly to offer monetary incentives at the initial household recruitment phase of the travel survey.

Mark Moran asked if children were interviewed via telephone? Bob Griffiths replied that children 13 years of age and older were interviewed via telephone with their parents' permission; otherwise, the information was obtained from the parent's report of the information recorded in the child's travel diary.

Mr. Mann asked that after the data has been collected and given to Ron Milone wherein he runs the model and checks the outputs against the ground counts and finds underreporting by 50 %, is a non-work factor applied? Is there one factor used for all non-work trips or does it vary by jurisdiction? Ron Milone replied that a factor of 1.5 was used for all non-work trips.

Mr. Mann asked what were the next steps in the Household Travel Survey? Bob Griffiths replied that a report on the Longitudinal Household Panel Travel Survey data would be presented this fall. Also, recommendations resulting from the TRB peer review would influence the decision on the conduct of the next wave of the household panel travel survey and how COG/TPB household travel surveys may be redesigned in the future.

Jim Hogan noted that recommendations from the TRB peer review panel would be in their December letter report. These recommendations would serve as input to the TFS review of the proposed FY-2005 work program for models development, network development, and travel surveys at its January 16, 2004 meeting. The TPB would need these items included in the FY-2005 UPWP that it approves in March 2004.

Item 5. Around the table – Update on Regional Studies

The chair asked subcommittee members around the table to provide an update on regional studies. Representatives from different counties: Loudoun County, Prince William County and representatives from Maryland State Highway Administration provided subcommittee members updates on ongoing and planned regional studies projects.

The next TFS meeting will be held on September 19, 2003.