

**Highlights of the TPB Travel Forecasting Subcommittee Meeting
Held on January 20, 2006**

Item 1: Approval of the November 18, 2005 Meeting Highlights

The meeting highlights were approved as written.

Item 2: Proposed FY2007 UPWP for Network Development, Models Development, Travel Surveys, Travel Monitoring

Mr. Hogan distributed a handout entitled "Review of Outline and Budget for the FY2007 Unified Planning Work Program (UPWP)". He explained that a complete draft of the FY2007 UPWP will be presented to the Board for review at its February 15, 2006 meeting and the final version will be presented for the Board's approval at its March 15, 2006 meeting. The TPB Technical Committee reviewed the outline and budget at its January 6, 2006 meeting.

Mr. Hogan briefly discussed the work program for network development, models development and cordon counts. The significant change in the network development program is the addition of a 2008 analysis year. For the models development program, major activities will be completion of the nested logit mode choice model, updating the medium and heavy truck models to complement the new commercial vehicle model, and beginning implementation of FTA's SUMMIT software. The Cordon Counts program will produce documentation of the Spring 2006 Central Employment Area Cordon Count and will conduct a regional HOV monitoring update in Spring 2007.

Mr. Clifford briefly discussed the work program for mobile emissions analysis, air quality conformity, congestion monitoring and analysis, and software support. He reported that, as work activities on the air quality conformity project generally extend over two fiscal years, the FY2007 program includes completion of the 2006 CLRP and FY2007-12 TIP assessment and preparation of a work scope and execution of major tasks on the 2007 CLRP / FY2008-13 TIP assessment. On the Mobile Emissions Analysis project, major efforts will be directed toward SIP planning for both 8-hour ozone and PM2.5 requirements, including controlled and uncontrolled scenarios for rate of progress and attainment forecast years; COG/DEP will complete efforts to inventory nonroad vehicles and engines used in transportation construction projects. The Software Support project will support the maintenance and execution of new mobile source emissions software, interface, and postprocessor software. The Congestion Monitoring and Analysis project will involve continuing aerial surveillance of freeways, travel time runs on arterial highways, and research into new data collection methods.

Mr. Griffiths briefly explained the work program for GIS technical support, travel surveys and analysis, and the regional transportation data clearinghouse. In addition to the ongoing GIS technical support activities, work in FY2007 will focus on enhancing the methodology for "seamless" editing of regional highway and transit networks, as well improving access to COG/TPB GIS metadata, databases, and applications via COG's website. The major effort in travel surveys will be the start of data collection for a large sample, methodologically-enhanced, activity-based regional household travel survey of approximately 10,000 households in the TPB modeled region. A professional survey firm will be contracted to conduct this survey over a 12-month period. Other activity in this area will be the preparation of a policy report summarizing changing travel trends in the metropolitan region using existing sources of data collected in prior years (Regional Transportation Data Clearinghouse, Cordon Counts, Household Travel surveys, Aerial Surveillance data, etc.). The regional clearinghouse project will update files with FY05-06 highway and transit network data, AADT traffic volume data, hourly directional traffic volumes counts and vehicle classification counts received from state DOTs and participating local jurisdiction agencies. Also updated will be transit ridership data received from WMATA, PRTC, VRE, MTA and local transit agencies including the Ride-On, The Bus, ART, DASH and Fairfax Connector. Finally, the latest Cooperative Forecast data by TAZ will be added.

Work will continue with State DOTs and local agency staff to implement an enhanced Highway Performance Monitoring System (HPMS) sample and improved traffic volume estimation methodology for the metropolitan Washington region.

Questions and Comments

Ms. Sutton commented that the Household Travel Survey is a hot topic and suggested that updates and new data be presented to the subcommittee at every meeting. Mr. Griffiths agreed.

Item 3. Update on Models Development

Mr. Milone distributed a handout entitled "Update on TPB Models Development" which outlined the status of the models improvement program activities. The 'Application Track' activities may be viewed in terms of three improvement areas: basic model maintenance and updates, the implementation of a commercial vehicle model, and the Nested Logit (NL) mode choice model implementation. These three areas were then discussed in detail.

The maintenance activities recently undertaken included a review and update of external and through trip forecasts, an upgrade to the demographic models using 2000 CTPP data for the Washington region, and update of auto driver trip forecasts using the 2000 Washington-Baltimore Air Passenger Survey. These activities are currently being documented. Mr. Milone added that staff plans to refine the current traffic assignment process to eliminate a small number of 'overloaded' freeway links. These are links that have been identified using the mobile emissions post processor as locations where the daily volume appears to exceed the capacity of the link. Furthermore, procedures are also in development to automate toll rate specifications associated with HOT lane alternatives.

Considerable progress has been made in the implementation of a commercial vehicle model for the Washington region. TPB has Bill Allen under contract to develop a commercial modeling technique that will compliment the current regional travel model. Mr. Allen has successfully calibrated a model and has tested it for a forecast year. This work is currently under review and will most certainly be readjusted given that the traffic assignment modifications (described above) will impact his technique. As the commercial vehicle model is installed into the Version 2.1D #50 model, the existing NHB trip generation model will also require a downward adjustment so that commercial vehicle trips are not double-counted.

AECOM Consult is also under contract to provide 'over-the-shoulder' assistance to TPB staff. TPB will be adopting the model structure developed by AECOM as part of their recent alternatives analysis work for WMATA. At present staff is examining the network development procedures used to support the NL calibration and validation effort. Staff is also assembling observed data necessary for development work, which will include the 1994 COG/TPB Household Travel Survey, the WMATA 2000 Bus On-board Survey, the 1994 and 2002 WMATA Metrorail Surveys, and possibly the CTPP worker flow data (if viable). Unlike the above mentioned activities, the NL implementation work will likely not be completed by the end of FY-2006. It is scheduled for completion by the end of the following year (FY-2007).

Questions and Comments

Mr. Shapiro commented that the overloaded links produced by the existing traffic assignment process affect not only a single link, but also potentially many 'upstream' network links. He suggested that systemic congestion produced by bottlenecks and queuing can affect regionally significant path choices. There may be some merit to including a queuing mechanism in the model although this is beyond what we normally do with travel forecasting models. As highway networks are becoming super-saturated, the effects of queuing on travel patterns will be increasingly important. Mr. Milone

replied that TPB is attempting to address overloaded links by imposing an impedance (time) penalty at locations where queuing is known to regularly exist during rush hours. The use of node delay is not being considered at the present time.

Mr. Kirby commented that link speeds may be adjusted to reflect the effect of queuing. The overloaded links have been identified using the post processor for emissions calculations, where hourly volumes and speeds are developed. In a small number of cases, there are not enough hours in the day to accommodate all of the traffic. We are trying to improve the regional model based on lessons learned from executing the post processor. The TPB has been using the post processor to identify these overloaded links as potential candidates for special speed treatments. Link speeds can be altered either by modifying the speed flow relationship or by imposing some type of time penalty at specific locations. Whatever technique is employed, the effect will be a reduced link speed that is, in turn, fed back into the trip distribution step.

Mr. Mann inquired if arterial links are overloaded in addition to the freeway links. Mr. Milone replied that overloading, as described above, exists for both freeways and arterials, but in both cases the number of affected links is extremely small.

Mr. Noble asked if airport-based taxi trips are addressed in the taxi trip tables. Mr. Milone replied that the taxi trip table most likely under-represents travel to the airports. Taxis are better represented in the airport auto driver trip tables (which is another non-modeled trip table that, along with the taxi trip table, is included in the traffic assignment process).

Mr. Graye asked if the maintenance activities for the model have been completed and implemented for application purposes. Mr. Milone replied that the activities described above are still developmental. These improvements will be folded into the next model version to be released prior to the next conformity cycle (i.e., by next fall).

Item 4. Update on the Household Travel Survey

Mr. Griffiths distributed a handout entitled "2001 Atlanta Household Travel Survey". He stated that current plans for the new regional household travel survey will include 10,000 households in the TPB modeled region. The 1994 HTS included only 5,000 households in the Washington region, and efforts to splice this data together with similar data collected for Anne Arundel, Howard and Carroll counties in BMC's 1993 household travel survey were problematic. With the planned new household travel survey, an effort will be made to meet with BMC to encourage them to conduct a similar survey because our modeled regions overlap. The new HTS will be a methodologically enhanced activity-based survey which will include (1) development of an address-based sample frame, (2) a multi-modal data collection process that will permit household recruitment and diary retrieval by mail, telephone, Internet, and in-person contacts, (3) a GPS vehicle tracking add-on sub-sample, and (4) a follow-up survey on non-responding households and household members.

Questions and Comments

Mr. Moran commented that the survey contractor obtained to do the survey should be familiar with activity-based surveys. You can take a traditional HTS and develop tour-based models. The key question is what exactly is different about the survey instrument and what is the activity-based model going to be.

Mr. Griffiths responded that it is necessary to have two different skills to design a successful activity-based survey. The contractor should be someone familiar with activity-based transportation models, how they are used and the specific type of data needed for their development. The contractor must also be someone who clearly understands the relationship between respondent burden and the need to

obtain a very high survey response that is truly representative of the population being surveyed. He continued that it is important to do the survey the right way or you will end up with non-representative data that are not useable, no matter how good the questions are for activity-based model development. Mr. Griffiths commented that he thought that Atlanta had conducted a very good activity-based travel survey and made good compromises between the volume and detail of the information collected and the overall survey response rate.

Mr. Hogan inquired about Atlanta's response rate. Mr. Griffiths replied that the response rate was around thirty percent. The CDC and the University of Georgia contributed funding for the survey as well.

Ms. Erickson commented that it may be a good idea to ask verbally if people telecommute. Mr. Griffiths replied that it is a good question to ask during the person-to-person interviews.

Various TFS members expressed concern about the language of the survey. Some questioned whether people would intuitively understand all of the survey questions. Mr. Kirby added that some of these activities are new to people (i.e. telecommuting, shopping online).

Mr. Noble suggested that the survey be entitled a Household Activity Survey instead of a Household Travel Survey.

Mr. Shapiro commented that it is important that a trip-based model can be calibrated using this survey data, not only tour-based or activity-based models. Mr. Griffiths replied that this is the direction TPB staff is taking. Mr. Kirby commented that there is tremendous value in looking at the experience with activity-based models at other MPOs.

Item 5. Update on 2000 CTPP

Mr. Griffiths discussed in detail the latest revised final draft adjustment factors for the Part 3 - Census Transportation Planning Package (CTPP). He explained that the CTPP – Part 3 data was a tabulation of workers and not a tabulation of average weekday Home-Based Work (HBW) trips. He further explained that adjustment factors to account for (1) workers not making a trip to work on a particular day (daily worker absenteeism), (2) workers making multiple HBW trips on a particular day (multiple job holders), (3) workers making intermediate stops on their commute to and from work (trip chaining) and (4) transit trip undercount adjustment, were needed to convert the CTPP – Part 3 data into HBW trips comparable to those used in our travel demand models.

Mr. Griffiths explained that he used data from the 2001 National Household Travel Survey (NHTS) and the 1994 COG/TPB Household Travel Survey (1994 HTS) to calculate most of the CTPP adjustment factors. Mr. Griffiths further explained that because the 2000 Census underestimated the total number of workers in the region compared to Bureau of Labor statistics estimates and underestimated the number of daily transit commuters compared to WMATA bus and rail ridership statistics and surveys, he also had to adjust the CTPP-Part 3 data for these underestimates as well. He added that because of the CTPP 2000 underestimate of transit commuters, he did not include a factor for "occasional mode shifts" as was done with the 1990 CTPP. He did note that for the 1990 CTPP data the occasional mode shift factor for transit was 1.15 and that for the 2000 CTPP data his new "transit commuter undercount" adjustment factor was 1.13. Thus, in terms of the actual factors applied to the CTPP data, his revised adjustment factors for 2000 were actually very similar to those applied for 1990. Mr. Griffiths concluded his presentation by stating that the revised draft adjustment factors for the CTPP 2000-Part 3 data now looked very reasonable to him.

Questions and Comments

Mr. Foster asked if the modal shares were at the destination/work end, and if not, will there be a table provided with that information. Mr. Griffiths replied that all modal shares are at the jurisdiction of residence for this particular table. Working through the adjustment factors is almost like a HTS. How many workers are being generated by the household? The adjusted CTPP data will have tabulations that are jurisdiction of residence by jurisdiction of work.

Mr. Milone commented that the Washington metropolitan area is not like the national profile. Mr. Griffiths explained that he did not use most of the NHTS data. The only data that was used was for the absenteeism because it was higher than what we had shown in 1994.

The next meeting of the TFS will be held on March 17, 2006.

COG/TPB Travel Forecasting Subcommittee

Sign-In Sheet

Meeting of January 20, 2006

Name	Agency/Affiliation	Telephone Number	Email
Mona Sutton	MD SHA TFS	410 545 5643	msutton@sha.state.md.us
JIM HOGAN	COG/TPB		
ROBERT SNEAD	COG/TPB	202,962,3324	RSNEAD@MWCOC.ORG
Wanda Hamlin	COG	202 962 3317	whamlin@mwcog.org
TOM HARRINGTON	WMATA	202 962 2294	tkharrington@wmata.com
Phil Shapiro	BMI-SG/VHB	301-562-9433	PShapiro@VHB.COM
Dan Goldfarb	BMI-SG/VHB	301-562-9433	dgoldfarb@vhb.com
John (Jay) Evans	Cambridge Systematics	301-347-0100	jevans@camsys.com
Hamid Humada	COG/TPB	202-962-3325	HHUMEIDA@MWCOC.ORG
Harold Foster	MNCPFC/RET	301-752-4917	HAROLD.FOSTER@DTPD.MNCPFC.ORG
PLEASE ADD TO YOUR CONTACT LIST			
William Bacoa	COG/TPB	202-962-3235	wbacoa@mwcog.org
Jinchiul (JC) Park	COG/DTP	202-962-3320	jpark@mwcog.org
Dusam Dukran	COG/DTP	202-962-3279	dukran@mwcog.org
Yuanjun Li	M-NEPPC, Mo.Co	301-495-4519	Yuanjun.Li@mncppc-mc.org
Ron Kirby	COG/TPB	202-962-3310	rkirby@mwcog.org
MARK MORAN	COG/TPB	202-962-3392	mmoran@mwcog.org
Bill Mann	VDOT	703-383 2411	Bill.Mann@VDOT.VIRGINIA.GOV
Subrat Mahapatra	MD SHA	410-545-5649	smahapatra@sha.state.md.us
Douglas Noble	DDOT	202-671-1366	douglas.noble@dc.gov
David Kline	Fairfax County	703-324-1457	david.kline@fairfaxcounty.gov
LYN ERICKSON	MDOT	410-865-1279	lerickson@mdot.state.md.us
ERIC GRAPE	M-NEPPC (Mont.Co)	301-495-9622	eric-grape@mncppc-mc.org
G.Toni GIARDINI	COG/TPB	(202) 962-3317	
Mike Clifford	"	202-962-3312	mclifford@mwcog.org
Bahram Jamei	VDOT/NOVA	703-353-2214	Bahram.jamei@dot.virginia.gov
Meseret Seifu	COG/TPB	(202) 962-3372	mseifu@mwcog.org
Ron Milone	COG/TPB	(202) 962 3283	rmilone@mwcog.org
ERIC JENKINS	M-NEPPC 866	301-977-3680	-
BOB GIFFERTS	COG/TPB	202-962-3280	roger@mwcog.org
DON VARY	CSI	301-347-0110	DVARY@CAMSYS.COM