



TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE MARCH 18, 2016 MEETING

Meeting time & location: 9:30 AM to 12:00 noon, Metropolitan Washington Council of Governments

MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- Robert Brown (Loudoun Co.)
- Melissa Chow (WMATA)
- Marc Elrich (Montgomery Co. Council)
- John (Jay) Evans (Cambridge Systematics)
- Anthony Gallo (Kimley-Horn & Assoc.)
- Dan Goldfarb (NVTC)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Bob Josef (VDOT)
- David Kline (Fairfax County DOT)
- Jaesup Lee (M-NCPPC, Montgomery Co.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Lou Mosurak (Loudoun Co. DTCl)
- Jiaxin Tong (Kimley-Horn & Assoc.)
- Ryan Westrom (DDOT)

COG STAFF

- William Bacon
 - Anant Choudhary
 - Paul DesJardin
 - Robert Griffiths
 - Wanda Hamlin
 - Charlene Howard
 - Hamid Humeida
 - Ron Milone
 - Jessica Mirr
 - Mark Moran
 - Dzung Ngo
 - Jane Posey
 - Rich Roisman
 - Meseret Seifu
 - Kanti Srikanth
 - Dusan Vuksan
 - Feng Xie
 - Jim Yin
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This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Mr. Josef.

1. INTRODUCTIONS AND APPROVAL OF MEETING HIGHLIGHTS FROM THE NOVEMBER 28, 2015 MEETING

After introductions, the highlights from the November 20, 2015 meeting of the TFS were approved without change. The January TFS meeting was cancelled due to inclement weather.

2. ROUND 9.0 COOPERATIVE FORECASTS OF FUTURE GROWTH

Mr. DesJardin briefed the subcommittee on Round 9.0 of COG's Cooperative Forecasts, noting that 2016 marks the 40-year anniversary of the Cooperative Forecasting process. He said that Round 9.0 represents a major update to the forecasts. This means that the regional econometric forecasts, used to cross-check the local forecasts, were revised using the latest assumptions. Mr. DesJardin showed region-level and jurisdiction-level forecasts of employment, population, and households. He said that the COG Board approved the draft Round 9.0 forecasts for use in the Air Quality Conformity Analysis of the 2016 Update of the Financially Constrained Long-Range Transportation Plan (CLRP) and the FY 2017-2022 Transportation Improvement Program (TIP) on March 9. The TPB had done the same on March 18. Additionally, the local jurisdictions submitted their Round 9.0, TAZ-level forecasts on March 11. Mr. DesJardin said that both the COG Board and the TPB would formally adopt the Round 9.0 forecasts after it approves the upcoming air quality conformity analysis, likely in November.

Regarding slide #7, which showed the difference between the "top-down" econometric model projections and the "bottom-up" local forecasts **after** the reconciliation process had been finished, Mr. Milone asked how big the difference was between the two sets of projects **before** the reconciliation process had begun. Mr. DesJardin said that the Cooperative Forecasting process required a couple of iterative steps of the reconciliation process. He noted that the bottom-up employment forecasts were higher than the top-down projections. By contrast, the bottom-up household and population projections were lower than the top-down projections for several jurisdictions, before the reconciliation process.

Mr. Liu asked which jurisdictions have the largest changes between Rounds 8.4 and 9.0. Mr. DesJardin responded that the District has the largest absolute population growth of 50,000 people added in Round 9.0. Regarding employment, the most significant reductions belong to Montgomery County, Prince George County, and some other parts of suburban Maryland. Fairfax County and Charles County have small reductions in employment growth. Mr. Gallo asked which jurisdictions required the most reconciling between their local forecasts and the regional econometric model projections. Mr. DesJardin said he did not have those numbers in front of him. Mr. Griffiths thought that there had been a small adjustment to the D.C. forecasts. Alexandria agreed to lower employment forecasts that may have been overly optimistic. A reconciliation was made to the forecasts from Fairfax County and the Rockville and Gaithersburg areas of Montgomery County because they were showing a much higher share of the regional growth. Mr. Griffiths said that the data shows that, for the Beltway jurisdictions, their share of future growth was going down, whereas the District was maintaining its share of 25 percent, and the outer suburbs, such as Prince William County and Loudoun County, would account for a higher share of growth. At the beginning of the reconciliation, the sum of the local forecasts were about 6% higher than the projections from the regional econometric model, compared to the 3-percent threshold.

3. OVERVIEW OF THE FY 2017 UNIFIED PLANNING WORK PROGRAM

Mr. Milone presented the anticipated FY 2017 Unified Planning Work Program (UPWP), which represents the TPB's budget for the TPB's planning activities from July 1, 2016 to June 30, 2017. He noted that the number of core work program activities have been consolidated, from 35 core programs in FY 2016 to 10 in FY 2017. The TFS is responsible for two of these activities: "Travel Forecasting" and "Travel Monitoring & Data Programs." The total UPWP budget for FY 2017 increased by 4% compared to last year. Mr. Milone said that a large-sample, methodologically enhanced, activity-based, region-wide household travel survey (HTS) will be conducted as a part of the Travel Monitoring program to support the TPB travel models development work. He underscored that the FY 2017 UPWP is completed, albeit pending federal approval.

Mr. Graye asked whether the 2017/2018 HTS would be different from 2007/2008 HTS, given the potential development of an activity-based model (ABM). Mr. Milone said that even the 2007/2008 HTS contains activity information, which will be used for developing an ABM in Phase 2 of the strategic plan. So the upcoming HTS should be designed in a similar manner. Nonetheless, Mr. Milone noted it may be a good time to revisit the survey instrument, to make sure it still fits our needs. For example, the survey will need to address new travel modes, such as Uber. Mr. Milone said that the regional jurisdictions could contribute to the survey instruments design. Mr. Griffiths cautioned that there is a trade-off between added detail in surveys and survey response rates. He added that COG has been talking with the Baltimore Metropolitan Council (BMC) to determine if they want to be a part of our survey, as was the case for the 2007/2008 HTS. BMC staff suggested two additional questions: 1) whether the household has an E-ZPass; 2) whether any household members received a delivery, such as from UPS or FedEx.

4. 2015 CLRP NETWORK REPORT

Ms. Seifu provided an overview of the draft network report describing the currently adopted 2015 CLRP highway and transit networks, which are a fundamental input to the travel model. She highlighted some updates to the FY 2014 CLRP networks, including transit schedules, transit fare parameters, and new estimated highway tolls/toll rates. Ms. Seifu welcomed feedback on the draft report within a 30-day review and comment period. She said that the report would be uploaded to the TFS webpage after the meeting.

Mr. Milone commented that the toll range on the HOT-lane facilities, 10 cents to one dollar per mile in current-year dollars, is reasonable. He said that the higher tolls in the future years indicate the increasing levels of congestion, which is reflected by the output of the COG/TPB travel demand model. Mr. Liu commented that the estimated tolls on I-66 were relatively low, less than 50 cents per mile. (After the TFS meeting, TPB staff found errors in the estimated toll information for I-66, found on slides 8 and 9 of the presentation. Staff has corrected the errors in the presentation and has uploaded a revised presentation file to the TFS "Documents" page. The correction will also be included in a revised, final report, along with any changes recommended by TFS members, following the 30-day review and comment period). Mr. Josef complimented the COG/TPB staff on the usefulness of the network report.

5. BRIEFING ON THE DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS OF THE 2016 CLRP AND THE FY 2017-22 TIP

Ms. Posey distributed copies of her draft scope of work for the air quality conformity analysis of the 2016 CLRP and the FY 2017-22 TIP. She focused on Part III of the document, "Policy and Technical Approach." She highlighted some changes to the policy and technical approach since the 2015 CLRP

conformity analysis. Those changes include the MOVES2014a emissions model, Round 9.0 of the Cooperative Forecasts of land activity, a change in policy for Maryland HOV facilities (they will not switch from HOV2+ to HOV3+ in 2020, as previously planned; they will remain HOV2+ through 2040), and the fact that 2016 is now one of the analysis years. Ms. Posey noted that FY 2016 CLRP schedule is one month later than normal. COG staff will brief the TPB on the draft CLRP & conformity analysis in October and plan for adoption by the TPB at its November meeting. Following that, a model transmittal package will be assembled, which should be available in December.

Mr. Milone commented that the presentation provides the key assumptions and changes to the COG/TPB model, which will be a part of the transmittal package after the TPB's approval. Mr. Milone noted that the horizon year for the air quality conformity analysis will be 2040, but the horizon year for the Cooperative Forecasts is 2045. Mr. Griffiths explained that a conformity analysis requires a minimum of a 20-year horizon and 2040 is the out year used for long-range planning, but some jurisdictions, for their own planning purposes, needed a 2045 land use forecast.

6. REGIONAL TRAVEL TRENDS

Mr. Griffiths presented some findings on regional travel trends for the Washington, D.C. metropolitan area (specifically the TPB Planning Area) from 2000 to 2015. He highlighted that, in spite of the steady increase in population and employment during the 2007-2014 period, there were declines in both weekday VMT and Metrorail ridership during the same period. Mr. Griffiths said that the cause could be related to behavioral changes. He also pointed out the recent trends of having a bigger aging population, a larger share of biking, and an increase in commuter teleworking, at least on an occasional basis. Mr. Griffiths concluded that the findings suggest the importance of the HTS to better understand the trends since the census data only deals with commute travel.

Regarding slide 15, Mr. Gallo asked why in recent years the regional commute-by-transit share has increased, but the regional average weekday transit ridership has remained relatively flat. Mr. Griffiths said that it could be because the total daily transit ridership includes commute and non-commute travel. Although 68% of transit travel is commuting to and from work, but there have been larger reductions in transit travel from the off-peak period. Also, telecommuting results in fewer daily trips being made to work places. Mr. Westrom asked whether the total population and employment presented in slides 2 and 4 match those in the Cooperative Forecasts. Mr. Griffiths said that the population figures from 2000 to 2014 are the same, but the 2015 figures will not match, since 2015 is a preliminary estimate. Regarding employment, the numbers in slide 4 are wage and salary employment, but those in the Cooperative Forecasts additionally include the self-employed and military. Therefore, the regional employment in the Cooperative Forecasts is higher than that in slide 4.

Mr. Westrom asked whether the presented dataset at the jurisdictional level is available. Mr. Griffiths replied that population, employment, and traffic counts are available on a jurisdictional basis. Regarding the transit ridership data, since surveys are conducted periodically, it is only available at jurisdictional level for some specific years. He noted that the last Metrorail survey was in 2012. Mr. Elrich asked whether the data is available at the TAZ level. Mr. Griffiths responded that it is not, due to the limited sampling size, but some TAZ-level data could be processed for the Census year, such as 2010. Employment data at the TAZ level is even harder to compile, since small-area employment data sources are not very good. He said the local jurisdictions and the Cooperative Forecasting program do have access to the employment security reports, the wage and salary employment values reported to the Bureau of Labor and Statistics (BLS), but the data is not perfect because sometimes the employment of a firm was provided as a total number at the firm's headquarters, instead the employment at each individual establishment Mr. Xie asked whether the dropping gas

price affected the reported regional trends. Mr. Griffiths said that the lower gas price may be a part of the causes for the higher weekday VMT in 2015 shown in slide 10. He noted that the biggest increase in traffic counts for 2015 at the continuous count stations are in the off-peak, which was double the increase of the peak period.

7. STATUS REPORT ON COG/TPB'S TRAVEL DEMAND MODELING IMPROVEMENT EFFORTS

The presentation comprised two parts: 1) A status report on COG/TPB's travel demand modeling improvement efforts, presented by Mr. Moran; and 2) FY 2016 strategic plan implementation task orders, presented by Mr. Evans and Mr. Liu.

Part 1 focused on COG's efforts on Task Order 16.2, known as Advice and Testing. Mr. Moran discussed the rationale for each task and provided a status report on each subtask. He reported that most tasks are in progress. He noted that the development of the task orders was later in the fiscal year than usual, so it would be challenging to finish all the work. Mr. Moran stated that the goal is to complete all five task orders (# 16.1 to 16.5) by the end of FY 2016 (June 30, 2016), but also noted that some implementation steps would occur in FY 2017. The final documentation for Task Order 16.2 would be a series of technical memos.

Regarding slide 18 ("Task 8: add external-to-internal transit trips"), Mr. Josef asked whether a survey would be necessary to support the task. Mr. Milone replied that COG staff would use the latest Metrorail survey. Mr. Josef asked how the Metrorail survey would account for commuter rail trips. Mr. Milone said that the first step would be to use the Metrorail survey to capture external-to-internal Metrorail trips. After that, one could next use a similar strategy for commuter rail trips, provided the existing commuter rail surveys had the relevant information. Regarding transit network coding enhancements on slide 12, Ms. Li asked whether there are any proposed network coding enhancements for coding BRT. Ms. Li also asked about the issue of coding directional bus lines on divided highways, given that the actual directional bus stops are different in the AM and PM. Mr. Moran responded that like most other agencies in the U.S., COG/TPB conducts transit assignment in production-attraction format, even though highway assignment is conducted in origin-destination format. The COG/TPB transit model has two time-of-day (TOD) periods, peak and off-peak. WMATA had proposed that COG consider having four TOD periods in the future for transit, but it was later decided that this type of change would not be part of the short-term travel modeling improvements. Regarding the question about enhanced coding of BRT routes, some of the proposed changes could be applied to BRT service (such as differentiated speeds on freeways and collectors), but it would be unlikely that there would be time this fiscal year to make such changes to both express bus service and BRT service. Mr. Evans added that the mode choice enhancement task order (#16.5) could propose to add more detail in the transit network to deal with sub-modes, instead of making the mode choice model handle the detail of choosing transit sub-modes. That would help to differentiate BRT and streetcar coding in future transit networks. The potential recommendations of the mode choice task order would then have an impact on the future of transit network coding specifications.

Part 2 of the presentation focused on the work being conducted by Cambridge Systematics (CS). Mr. Evans reported the completion of a survey of four MPOs on version control and bug-tracking software. GitHub and GitHub for Windows were recommended for the task. Continuing the presentation from slide 6 to slide 13, Mr. Liu discussed task #4 (speed/travel time validation improvement), task #9 (revise bus speed linkage to highway speeds), and task #12 (development of a parcel-level development database). He said that, for this region, only some jurisdictions in Virginia, such as Loudoun County and Prince William County, normally charge a fee for the parcel-level data. Mr. Evans then briefed the subcommittee on the remainder of the presentation, which covered

updates on and schedules of three task orders: #16.3 (managed lanes), #16.4 (non-motorized model enhancements), and #16.5 (mode choice model enhancements).

Regarding linking bus speeds to highway speeds (slide 7), Mr. Milone asked which data would be used to develop the model. He commented that bus scheduled information could be useful and asked whether vehicle probe data could also be utilized to determine highway speeds or highway service levels. Mr. Liu agreed that the bus scheduled run time information is commonly used for the task and vehicle probe data could also be used for the task. He added that run time performance data could be available. He said that WMATA has provided CS with some run-time performance data for some planning projects. Mr. Liu noted that CS reviewed the practices of several MPOs, including ARC (Atlanta), H-GAC (Houston-Galveston), DCHC (Durham-Chapel Hill-Carrboro), BMC (Baltimore), which developed some relationship between transit, bus speed, and bus delay using dwell time. Mr. Milone asked whether a future, minimum bus speed threshold is discussed by other MPOs. Mr. Liu said that H-GAC mentioned this issue, but he did not recall the specific number at that moment. Mr. Griffiths commented that the process to compile a parcel-level database will require an ongoing effort to collaboratively work with the COG's GIS committee, with the goal being to come up with a process to update the database on continuing basis, since many outer jurisdictions change their local databases from year to year. Mr. Evans clarified that the current plans are to create only a base-year parcel database, not a series of databases for all the future years.

Regarding the issue data availability for improved managed lanes modeling (slide 18), Mr. Kline asked for an example of the type of data that would be needed. Mr. Evans said that the operational data on the current HOT lane facilities, such as tolls and travel time, would be useful for the calibration of a HOT-lane modeling process. Mr. Evans said that CS requested COG/TPB staff to investigate what data is available that could be used for the managed lane enhancements. Mr. Moran said that COG/TPB staff has received some aggregated toll and traffic count data from Transurban, but not detailed link-level data. COG staff did some comparisons of the observed, aggregate data with the outputs of the COG/TPB travel model and then documented the findings in a memo dated 3/9/16. Mr. Brown underscored the importance of the observed data from HOT lane facilities to better forecast the managed lanes using the COG/TPB travel model. He mentioned that HOT lane facilities are becoming more and more prevalent in Northern Virginia. Mr. Brown asked whether Transurban could share operational count and toll data and whether VDOT could help this process along. Mr. Josef said that, according to exclusivity agreements in the contract between VDOT and Transurban, the firm does not share the data with VDOT, due to market competition reasons. Mr. Brown felt that, if VDOT is going to continue extending contracts to private operators, part of the deal should be that the public agencies have the right to the data. Mr. Roisman added that COG/TPB staff asked for the assistance of VDOT on getting the data from Transurban, but the data COG could get is very limited. One reason is that exclusivity agreements limit the amount of data that Transurban is required to share.

Mr. Griffiths asked whether Transurban has the staff to conduct its own model calibration. It was felt that Transurban did have such a capability. Mr. Griffiths then suggested that COG/TPB staff could have a contract with Transurban for Transurban to calibrate the COG/TPB travel model, which would not require Transurban to provide the detailed toll data. Mr. Goldfarb said that Transurban used COG/TPB model and modified some components of the model to match their needs. Mr. Kline noted that, due to data collected for other local studies near the HOT-lane facilities, there could be some data that has already been collected, such as trips going in and out of ramps of the managed lane, which could be helpful. Mr. Brown suggested exploring the data availability from GPS-based device vendors. Mr. Evans underscored the importance of collecting the data as well as the challenge of making use of the data, given the limited time and resources.

8. ROUNDTABLE DISCUSSION ABOUT CURRENT MODELING PROJECTS IN THE REGION

Mr. Josef shared that he was asked to develop a training session for VDOT's model users. The goal is to train the employees to be able to work on some tasks, such as modifying the trip tables and running the traffic assignment. He welcomed any ideas on the training session development. Mr. Westrom indicated that DDOT had a useful training last year. Mr. Josef asked Mr. Westrom to share the experience. Mr. Vuksan asked about the purpose of the training. Mr. Josef said that the training would allow staff to be able to work on some tasks in case he has to be away from the office. Mr. Vuksan noted the challenge of making productive use of training, especially if one does not use the software frequently. Ms. Li suggested that COG/TPB staff could offer some training sessions for the local jurisdiction staff, when time permits. Mr. Milone said that COG staff has invested much effort on the model documentations to provide as much information as possible. He indicated that COG/TPB staff would consider offering training in the future.

9. NEXT MEETING DATE AND ADJOURNMENT

The next scheduled meeting of the TFS is Friday, May 20, 2016 from 9:30 AM to 12:00 noon. The meeting adjourned around noon.

*** The meeting highlights were prepared by Dzung Ngo, Mark Moran, and Ron Milone ***

Ref: tfsHighlights2015-03-18_draft_v3.docx