Preliminary budget for the FY 2011 Unified Planning Work Program (UPWP)

The Travel Forecasting Subcommittee (TFS) has oversight of five work activities in two major areas – development of networks/models and travel monitoring – as shown in Table 1.

Table 1 Oversight of the Travel Forecasting Subcommittee

Work activity	Oversight
4. Development of Networks/Models	
a. Network Development	**Travel Forecasting Subcommittee**
b. GIS Technical Support	Technical Committee
c. Models Development	**Travel Forecasting Subcommittee**
d. Software Support	Technical Committee
5. Travel Monitoring	
a. Cordon Counts	**Travel Forecasting Subcommittee**
b. Congestion Monitoring and Analysis	**Travel Forecasting Subcommittee**
c. Travel Surveys and Analysis: Household Travel Survey	**Travel Forecasting Subcommittee**
d. Regional Transportation Data Clearinghouse (RTDC)	Technical Committee

The proposed FY 2011 UPWP was presented to the Technical Committee on January 8, 2010 (item #5)[1] and to the TPB on January 20, 2010 (item #13).[2] Today, the relevant excerpts from TPB memo will be presented to the TFS, as shown in Table 2.

Table 2 Work activities, their presenters, and the relevant page numbers from proposed UPWP presented to the TPB

Work activity	Presenter	Page number
First page of Gerald Miller's 1/13/2010 memo		none
FY 2011 Funding Matrix		none
4a. Network Development	Ron Milone	24
4c. Models Development	Ron Milone	26
5a. Cordon Counts	Bob Griffiths	29
5b. Congestion Monitoring and Analysis	Daivamani Sivasailam	29
5c. Travel Surveys and Analysis: Household Travel Survey	Bob Griffiths	30

[1] Gerald Miller to TPB Technical Committee, "Preliminary Budget and Outline for FY 2011 Unified Planning Work Program (UPWP)," Memorandum, January 5, 2010

[2] Gerald Miller to Transportation Planning Board, "Preliminary Budget and Outline for FY 2011 Unified Planning Work Program (UPWP)," Memorandum, January 13, 2010

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202

M E M O R A N D U M

January 13, 2010

TO: Transportation Planning Board

FROM: Gerald Miller
Director, Program Coordination
Department of Transportation Planning

SUBJECT: Preliminary Budget and Outline for FY 2011 Unified Planning Work Program (UPWP)

A preliminary FY 2011 budget estimate for the UPWP, the work activity funding changes compared to FY 2010 levels, and an outline of the proposed work activities for FY 2011 are attached.

The budget for the FY 2011 UPWP basic work program is based upon MPO planning funding allocations provided by the three DOTs of FTA Section 5303 and FHWA PL funding that will be determined by the reauthorization of SAFETEA-LU. To date, I have made the assumption that the FY 2011 funding allocations to be provided by the DOTs will be the same as the current FY 2010 levels. The estimated funding is shown on the next page. In addition, the budget estimate assumes $1,128,100 of unobligated funds from FY 2009 will be available, which is $666,100 less than the unspent funds from FY 2008.

The preliminary estimated total budget excluding carryover funds is $11,337,500, which is $666,100 less than the current total FY 2010 budget as amended December 16. The **basic work program budget is $9,764,800** without carryover funds, which is $666,100 less than the corresponding current FY 2010 budget level of $10,430,900.

The **technical assistance program budget is $1,572,700**, unchanged from the current FY 2010 budget level. Technical assistance program budgets are based upon percentages of the estimated FY 2011 funding allocations which are unchanged from FY 2010.

DRAFT **12.23. 09**

TPB FY 2011 WORK PROGRAM FUNDING CHANGES FROM FY 2010

Work Activity	FY 2011	FY 2010	FY11-FY10	% Change
1. PLAN SUPPORT				
A. Unified Planning Work Program (UPWP)	70,700	70,700	0	0
B. Transp Improvement Program (TIP)	240,600	251,700	-11,100	-4
C. Constrained Long-Range Plan	588,400	638,400	-50,000	-8
D. Financial Plan	64,000	84,000	-20,000	-24
E. Public Participation	371,900	446,900	-75,000	-17
F. Private Enterprise Participation	18,300	18,300	0	0
G. Annual Report	80,100	80,100	0	0
H. Transportation/Land Use Connection Progr	395,000	395,000	0	0
I. DTP Management	452,100	452,100	0	0
Subtotal	2,281,100	2,437,200	-156,100	-6
2. COORDINATION and PROGRAMS				
A. Congestion Management Process (CMP)	155,000	155,000	0	0
B. Management, Operations, and ITS Planning	340,300	390,300	-50,000	-13
C. Emergency Preparedness Planning	75,400	75,400	0	0
D. Transportation Safety Planning	100,000	100,000	0	0
E. Bicycle and Pedestrian Planning	108,700	108,700	0	0
F. Regional Bus Planning	100,000	100,000	0	0
G. Human Service Transportation Coordination	114,800	114,800	0	0
H. Freight Planning	130,000	130,000	0	0
I. MATOC Program Planning & Support	120,000	120,000	0	0
Subtotal	1,244,200	1,294,200	-50,000	-4
3. FORECASTING APPLICATIONS				
A. Air Quality Conformity	563,200	563,200	0	0
B. Mobile Emissions Analysis	640,100	640,100	0	0
C. Regional Studies	365,800	615,800	-250,000	-41
D. Coord Coop Forecasting & Transp Planning	726,800	726,800	0	0
Subtotal	2,295,900	2,545,900	-250,000	-10
4. DEVELOPMENT OF NETWORKS/MODELS				
A. Network Development	769,700	769,700	0	0
B. GIS Technical Support	548,800	548,800	0	0
C. Models Development	1,071,200	1,071,200	0	0
D. Software Support	178,900	178,900	0	0
Subtotal	2,568,600	2,568,600	0	0
5. TRAVEL MONITORING				
A. Cordon Counts	250,800	460,800	-210,000	-46
B. Congestion Monitoring and Analysis	350,000	350,000	0	0
C. Travel Surveys and Analysis			0	
Household Travel Survey	456,300	456,300	0	0
D. Regional Trans Data Clearinghouse	317,900	317,900	0	0
Subtotal	1,375,000	1,585,000	-210,000	-13
Core Program Total (I to V)	**9,764,800**	**10,430,900**	-666,100	-6.4
6. TECHNICAL ASSISTANCE				
A. District of Columbia	312,100	312,100	0	
B. Maryland	575,500	575,500	0	
C. Virginia	490,600	490,600	0	
D. WMATA	194,500	194,500	0	
Subtotal	1,572,700	1,572,700	0	
Total, Basic Program	**11,337,500**	**12,003,600**	-666,100	-5.5
7. CONTINUOUS AIRPORT SYSTEM PLANNING				
GRAND TOTAL	11,337,500	12,003,600		

4. DEVELOPMENT OF NETWORKS AND MODELS

A. NETWORK DEVELOPMENT ($769,700)

- The network development program serves to update the transportation system inputs to the regional travel demand model. The network updates reflect on-going modifications to the TIP and the CLRP. The specific forecast years for which networks are prepared and the number of network scenarios produced are normally linked to the needs of regional air quality planning requirements (i.e., the Air Quality Conformity Determination). FY 2011 network development efforts will focus on the development of highway and transit networks supporting the Version 2.3 travel model on the newly formulated 3,722 TAZ system. This work will be undertaken using new GIS-based procedures for developing and managing the TPB's highway and transit networks (i.e., the TPBMAN). The primary activities will consist of:

- Updating the TPB's base-year (2010) transit network: Staff will refresh the base year transit network files to reflect the most current operating conditions. Route and scheduling information will be solicited from state, local and private service providers. Much of this information will be obtained via the Internet or in some type of electronic form. Base year highway updates or refinements will also be implemented as necessary. Highway toll rates will also be updated will as necessary.

- Establishing forecast networks: A series of forecast year highway and transit networks will be prepared as required by the Cube/Voyager software and the Version 2.3 model. The future networks will be modified in accordance with TIP and CLRP updates submitted by the TPB members. During FY 2011, highway and transit networks are envisioned to include the years 2012, 2020, 2030, and 2040.

- Continue implementation of improved methods: There are several areas where network development can be better facilitated:

  - Linkages between the Transportation Data Clearinghouse (TDC) and the TPBMAN can be improved. For example, traffic counts residing in the TDC should be easily transferrable onto highway links in the TPBMAN database. This capability does not currently exist.

  - Updates to the base year transit network are accomplished with a combination of manual and automated updates. Opportunities for improving the automation of the updating process needs to be continued.

  - Opportunities for updating network attributes using information from other geo-referenced databases will need to be sought. TPB is

considering the use of proprietary observed speed data on freeway and arterial facilities throughout the region. This information will need to be joined to links in the highway network in order to be used in model calibration efforts. Further, as highway network links have been conflated to NAVTEQ centerline alignments during FY 2010, there may be opportunities to transfer NAVTEQ street attributes to link attributes in the TPB's regional network.

Oversight: Travel Forecasting Subcommittee

Products: Series of updated highway and transit networks compliant with the Version 2.2 Travel Model and documentation of network development activities; and recommendations for improving the network development process.

Schedule: June 2011

B. GIS TECHNICAL SUPPORT ($548,800)

- Provide data and technical support to staff using the COG/TPB GIS for development and distribution of data and information developed by the TPB planning activities, including Regional Studies, the CLRP, the TIP, Congestion Monitoring and Analysis, Cooperative Forecasting, Regional Transportation Data Clearinghouse, Network and Models Development, and Bicycle Planning.

- Provide ongoing maintenance and support of enhanced GIS-based transportation network management and editing tools and TPBMAN geodatabase.

- Enhance GIS-based transportation network management and editing tools based on user experience gained from using the newly developed network editing tools developed in FY 2010.

- Enhance the COG/TPB GIS Spatial Data Library with updated transportation and non-transportation features as these data become available.

- Add additional transportation attribute data, land use features and imagery data to the COG/TPB GIS Spatial Data Library.

- Update GIS Spatial Data Library documentation, GIS User Guides and technical documentation of various GIS software applications as required.

- Create an intranet-based GIS Project Information Center that lists and describes DTP GIS databases and applications currently being developed, as well as those that are currently available.

- Train staff on use of GIS databases for transportation planning.
- Continue to coordinate the regional GIS activities with state DOTs, WMATA, and the local governments through COG's GIS Committee and subcommittees.
- Maintain and update COG/TPB's GIS-related hardware and software.
- Respond to request for COG/TPB GIS metadata, databases, and applications.

Oversight: Technical Committee

Products: Updated GIS software, databases, User documentation, Training materials, Support and enhancement of GIS procedures to develop and manage transportation networks.

Schedule: June 2011

C. MODELS DEVELOPMENT ($1,071,200)

During FY 2009, a nested-logit mode choice model and a revised truck model were incorporated into the Version 2.3 travel model on the 2,191-TAZ zone system. With the release of the 2007/2008 Household Travel Survey and the new 3,722-TAZ zone system, it was decided to re-calibrate and re-validate the Version 2.3 travel model on the new zone system. During FY 2010, this re-calibration process began, with the effort focusing on preparatory work needed to develop calibration files, including collection and cleaning of observed data, e.g., 2007 HTS, 2007 WMATA rail survey, 2008 bus survey, year-2007 traffic counts, year-2007 transit boardings and alightings. Other activities conducted in FY 2010 included: 1) beginning the calibration of the model; 2) getting familiar with the new geodatabase and application (TPBMAN) to edit and maintain travel model networks; and 3) obtaining observed travel time data on freeways (collected by INRIX) and performing initial analyses of the data. In FY 2011, work will continue in the areas of model calibration, validation, and testing, with the goal of having a re-calibrated, re-validated Version 2.3 travel model on the new zone system ready by November 2010. For FY 2011, the following work program elements will be undertaken in the areas of data collection, models development, and maintenance activities:

- Data collection, cleaning, and analysis: Support the analysis of INRIX-supplied travel speed data and use this information to support the Version 2.3 model calibration and validation. Recommendations from the TPB's scan of best modeling practice may include other data collection efforts for TPB staff to consider.

- Short-term models development: Support the Version 2.2 travel model as the TPB's production model until the Version 2.3 model is completed for production use. Complete the Version 2.3 travel development effort on the 3,700 zone area system. This will include:

    - The analysis and refinement of the networks produced by the new TPBMAN-based network development procedures
    - Model sensitivity testing with the Round 8.0 Cooperative Land Activity Forecasts.
    - The adaption of existing non-modeled travel markets (airport trips, external and through trips, visitor trips, etc.) to the 3,700 TAZ area system
    - Work toward combining the Version 2.3 model outputs with the EPA mandated MOVES model, in accordance with federal requirements.

- Maintenance activities: Promote guidance of the model application through information sharing, documentation, and training

    - Staff the Travel Forecasting Subcommittee (TFS)
    - Keep abreast of new developments in travel demand forecasting, both short-term developments (such as for trip-based, four-step models) and long-term developments (such as ABMs and airport choice and ground access mode choice models). Activities will include: 1) Managing and supporting the consultant contract to perform a scan of best modeling practice; 2) Continuing participation on a national MPO panel, the AMPO Travel Modeling Work Group, established to recommend practices in travel demand modeling; 3) Participating in relevant organizations and activities, such as the Transportation Research Board (TRB), the Travel Modeling Improvement Program (TMIP), the Federal Transit Administration (FTA) guidelines on modeling for New Starts, the Institute of Transportation Engineers (ITE), Citilabs and other vendors of travel demand forecasting software.
    - Support computer software and hardware used to do travel demand forecasting
    - Provide support for data requests

- Provide liaison to planning studies undertaken by TPB-member agencies

Oversight: Travel Forecasting Subcommittee

Products: Updated travel models; documentation of models development activities; and recommendations for continued updating of the travel demand modeling process.

Schedule: June 2011

D. SOFTWARE SUPPORT ($ 178,900)

- Support execution of CUBE / TP+ software and migration to CUBE / Voyager in running TPB travel demand forecasting applications.
- Support execution of the Mobile6.2 Mobile Source Emissions Factor Model, the formal release version of EPA's Motor Vehicle Emissions Simulator (MOVES2010) model, and supporting software.
- Train DTP staff in application of CUBE/ TP+, CUBE / Voyager, Mobile6.2, MOVES2010, and supporting software.
- Monitor development and application of travel demand model sets in use in corridor studies and at other MPOs, including travel demand forecasting software packages operating under Microsoft Windows and other systems.
- Monitor the performance of DTP desktop and laptop microcomputer hardware and software and make upgrades as appropriate.
- Coordinate with the COG Office of Technology Programs and Services (OTPS) staff in this task and in applications under the Microsoft Windows operating system.
- Maintain the operation of data storage systems for the back-up, archiving and retrieval of primary regional and project planning data files.
- Support development and execution of applications of micro simulation software as appropriate.

Oversight: Technical Committee.

Products: Operational travel demand forecasting process plus operational Mobile6.2 and MOVES2010 Models; File transfer, storage and retrieval processes; DTP staff training in CUBE/ TP+, CUBE / Voyager, and MOVES2010 systems; and Microcomputer hardware to support CUBE/ TP+, CUBE / Voyager,

MOVES2010, and other operations.

Schedule: June 2011

5. TRAVEL MONITORING

A. CORDON COUNTS ($250,800)

- Data collection was completed for the Regional HOV Monitoring Project during FY2010
- During fall of FY2011, staff will process data collected during FY2010 and prepare a report documenting the procedures and results of this project.
- Report will include information on vehicle volumes by time of day, vehicle classification, auto occupancy, transit passenger volumes, and results of travel time runs.

Oversight: Travel Forecasting Subcommittee

Products: Report on the results of the Spring 2010 Regional HOV Monitoring Project

Schedule: January 2011

B. CONGESTION MONITORING AND ANALYSIS ($350,000)

- Conduct the final year in the three cycle of arterial highway travel time/speed data collection on the enhanced set of routes in the region during the off-peak and PM peak period. Analyze the data, and prepare a comprehensive report for all facilities in the three year cycle, documenting the findings including changes to the performance of the routes over time (seen in previous cycles of data collection).
- During Spring 2011, with consultant assistance, collect AM and PM peak period data on the freeway system using an aerial survey. The data analysis and findings will be published in FY 2012.

Oversight: Travel Forecasting Subcommittee

Products: FY 2011 Arterial Highway System Performance Report; Electronic files of Spring 2011 freeway survey data

Schedule: June 2011

C. TRAVEL SURVEYS AND ANALYSIS

Household Travel Survey ($456,300)
(**Note: If $250,000 becomes available for additional household travel survey data collection, the total budget for this work item would increase to $706,300)**

- Provide data, documentation, and technical support to users of 2007/2008 Regional Household Travel Survey. Update user documentation as required.

- Continue to mine data collected in the 2007/2008 Regional Household Travel Survey to support analysis of regional growth and transportation issues of topical interest to the members of the TPB. Prepare information reports on various aspects of daily household and vehicle travel in the TPB modeled area.

- Collect household travel survey data for 1,200 households in three focused geographic subareas of the region for more intensive analysis of specific growth and transportation issues. Examples of focused geographic subarea could include Metrorail station areas of a specific type, highway corridors with recent or planned major improvements, proposed light rail study area, or regional activity centers of with specific characteristics. **If $250,000 becomes available, the sample size for the household travel survey can be doubled to 2,400 households).**

Oversight: Travel Forecasting Subcommittee

Product: Household Travel Survey Analyses, Information Reports and Technical Memorandum, Maintenance of Travel Survey Data and Documentation.

Schedule: June 2011

D. REGIONAL TRANSPORTATION DATA CLEARINGHOUSE ($317,900)

- Update Clearinghouse data files with FY09-10 highway and transit network data.

- Update Clearinghouse traffic volume data with AADT and AAWDT volume estimates, hourly directional traffic volume counts and vehicle classification counts received from state DOTs and participating local jurisdiction agencies.

- Update Clearinghouse transit ridership data with data received from WMATA, PRTC, VRE, MTA and local transit agencies including the Ride-On, The Bus,

ART, DASH and the Fairfax Connector.

- Add newly collected and processed freeway and arterial road speed and level of service (LOS) data to the Regional Transportation Data Clearinghouse network.
- Add updated Cooperative Forecasting data to the Clearinghouse by TAZ.
- Update Regional Clearinghouse user manuals and documentation.
- Create a web-based application to display Regional Transportation Clearinghouse highway link AADT and AAWDT traffic volumes on satellite/aerial photography imagery with zooming user interface.
- Create a prototype ArcGIS server-based application to distribute Regional Transportation Clearinghouse Data to TPB participating agencies via a lightweight web browser application.

Oversight: Technical Committee

Product: Updated Clearinghouse Database and Documentation; Web Interface to Access Clearinghouse Data

Schedule: June 2011

6. TECHNICAL ASSISTANCE ($1,572,700)

The funding level allocated to technical assistance is 15 percent of the total new FY 2010 funding in the basic work program. The funding level for each state is 13.5 percent of the total new FTA and FHWA MPO planning funding provided by each state. The funding level for WMATA is 8 percent of the total new FTA funding. The specific activities and levels of effort are developed through consultation between each state and WMATA representatives and DTP staff.