

National Capital Region Transportation Planning Board

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MEMORANDUM

Technical Committee Item 5b

March 4, 2011

TO: Transportation Planning Board

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

SUBJECT: FY 2011 Carryover Work Statements and Budgets for the FY 2012 UPWP

Attached are pages excerpted from the draft FY 2012 UPWP with changes and additions shown in **bold** to reflect the carryover funding from FY 2011 to FY 2012. The FY 2012 work elements affected by the FY 2011 carryover funding are as follows:

- 2.G. Human Service Transportation Coordination: Carryover \$20,000 from \$80,000 allocated for the JARC and New Freedom assessment, which is needed due to the delay in starting the consultant contract in FY 2011. The assessment is scheduled to be complete in September 2011.
- 4.C. Models Development: Carryover \$250,000, which is available due to the deferment of a consultant-assisted effort to support and facilitate the development of an advanced (tour-based/activity-based) travel demand model. Studies sponsored by the Association of Metropolitan Planning Organizations (AMPO) and the National Cooperative Highway Research Program have just been completed to assess the experience and documentation of other MPOs that have experience using these new models. Initiating this effort in FY 2012 will benefit from the information collected by these national studies.
- 5.C. Travel Surveys and Analysis: Carryover \$430,000, which will be used to collect household travel survey data from 2,400 households in six specified geographic subareas in the fall of 2011 rather than in the spring.
- 6. Technical Assistance
 - District of Columbia: Carryover \$25,000 for one project
 - Maryland: Carryover \$420,000 for six projects
 - Virginia: Carryover \$269,600 for four projects

The total FY 2011 funding to be carried over is \$1, 414,600

The final version of the FY 2012 UPWP will combine the carryover funding and new funding into one work program for submission to FTA and FHWA. The proposed budget levels for these carryover projects are shown in Table A.

Deletions are shown in strikeout and additions in **bold**.

TABLE 1A DRAFT

3.4.11

PROJECT CARRYOVER FROM FY2011 TO FY2012 BY FUNDING SOURCE

| WORK ACTIVITY | FY2011 FUNDS | FTA/STATE/ LOCAL | FHWA/STATE/ LOCAL |
|--|------------------|---------------------|----------------------|
| 2. COORDINATION AND PROGRAMS | | | |
| G.HUMAN SERVICE TRANSPORATION COORD | 20,000 | | |
| 4. DEVELOPMENT OF NETWORKS AND MODELS | | | |
| C. MODELS DEVELOPMENT | 250,000 | 53,837 | 196,163 |
| 5. TRAVEL MONITORING | | | |
| C. TRAVEL SURVEYS & ANALYSIS | 430,000 | 92,599 | 337,401 |
| Total | 700,000 | 146,436 | 533,564 |
| 6. TECHNICAL ASSISTANCE | | | |
| A. District of Columbia | 25,000 | 4,344 | 20,656 |
| B. Maryland | 420,000 | 92,532 | 327,468 |
| C. Virginia | 269,600 | 63,671 | 205,929 |
| Subtotal | 714,600 | 160,547 | 554,053 |
| Grand Total | 1,414,600 | 306,983 | 1,087,617 |
| | | | |
| | | | |
| | | | |
| | | | |
| TOTAL | 1,414,600 | 306,983 | 1,087,617 |

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CARRYOVER WORK STATEMENTS AND FUNDING FOR THE FY 2012 UPWP

G. HUMAN SERVICE TRANSPORTATION COORDINATION

In 2009 the TPB adopted an Update to the Coordinated Human Service Transportation Plan for the National Capital Region ("Coordinated Plan"). A Coordinated Plan is required under the final USDOT planning regulations to guide funding decisions for the following three Federal Transit Administration (FTA) programs: 1) Formula Program for Elderly Persons and Persons with Disabilities (Section 5310); 2) Job Access and Reverse Commute for Low Income Individuals (JARC, Section 5316); and 3) New Freedom Program for Persons with Disabilities (Section 5317). The Coordinated Plan describes existing transportation services, unmet transportation needs, strategies to address those needs and priorities for implementation to better serve persons with disabilities, those with limited incomes and older adults. The Coordinated Plan also establishes selection criteria for the competitive selection of JARC and New Freedom projects. The final regulations also require that the CLRP and TIP shall consider the design and delivery of non-emergency transportation services. The TPB became the designated recipient of the FTA's JARC and New Freedom programs in 2006 for the Washington DC-VA-MD Urbanized Area; each program provides approximately \$1 million in Federal funds annually to the Washington region. The goals of these programs are to improve transportation services for low-income individuals and people with disabilities.

The development and implementation of the Coordinated Plan is overseen by the Human Service Transportation Coordination Task Force. The TPB established the Human Service Transportation Coordination Task Force ("Task Force") to develop and help implement a Coordinated Plan which must guide annual project selections. The Task Force is comprised of human service and transportation agency representatives from each TPB jurisdiction as well as consumers and private providers. Each year, the Task Force establishes priorities for the annual solicitations and assists with outreach.

Work activities include:

- Support the activities of the TPB Human Service Transportation Coordination Task Force;
- Review and implement findings and recommendations from the JARC and New Freedom Assessment;
- Coordinate special meetings on issues such as Medicaid transportation, low-income transportation needs or MetroAccess as requested;
- **Conduct an assessment of the JARC and New Freedom projects funded to date to identify lessons learned, and effective and efficient strategies that improve the mobility of special needs populations for the Washington region. This assessment will review other regions' experiences with JARC and New Freedom, including the types of projects funded, and recommend considerations for future project solicitations.**

- Develop priority projects for the 2012 solicitation for JARC and New Freedom projects; and
- Coordinate the activities of the coordination task force with the TPB Access for All Advisory Committee and the Private Providers Task Force.

Oversight: TPB Human Service Transportation Coordination Task Force

Cost Estimate: \$114,800
\$20,000 carryover from FY 2011
 \$134,800 total

Products: Priorities for the 2012 JARC and New Freedom Solicitation

An Assessment of JARC and New Freedom Projects in the National Capital Region, September 1011

Schedule: June 2012

4. DEVELOPMENT OF NETWORKS AND MODELS

C. MODELS DEVELOPMENT

The role of the TPB's models development program is to maintain and improve technical procedures used to forecast travel demand in the Washington, D.C. region. The program has been designed to manage uncertainty by structuring model improvement activities among five concurrent tracks: 1) application, or short-term improvements to the model; 2) methods development, or long-term improvements to the model; 3) research; 4) data collection; and 5) maintenance activities. These tracks are established to occur over a multi-year period, allowing for longer-term improvements to proceed off-line while the application model is maintained to support immediate planning needs.

During FY 2011, TPB staff culminated a two-year effort to calibrate the Version 2.3 travel model on the newly developed 3,722-TAZ area system using the 2007/2008 COG/TPB Household Travel Survey and several other data sources. During FY-2012, models development activities will focus on the ongoing refinement of the Version 2.3 model, in cooperation with the TPB's Travel Forecasting Subcommittee (TFS). The refinement will include possible updates to existing modeling steps, procedures to facilitate the development of modeling inputs, and the collection and analysis of new data. Staff will also support the application of Version 2.3 for regularly scheduled regional air quality planning purposes. This support will include training in the use of the Version 2.3 travel model. TPB staff may also support a consultant contract to explore advanced modeling paradigms, such as activity-based models, as described below.

The models development program has benefited in recent years by allocating resources for consultant assistance supporting both short-term and long-term updates to the regional travel model. Beginning in FY2006, an annual task-order contract was established and budgeted for \$150,000 a year. Entitled "Assistance on Travel Demand Model Development and Application," this contract supports focused research on modeling practices across the U.S. and provides input into various elements of the models development work program. The contract was designed to be renewable on an annual basis, for up to three years with a given consultant. In late FY 2011, this contract will be rebid for the third time, ensuring the continuation of this work into FY 2012.

Beginning in FY 2005, the UPWP has alluded to a work element for consultant assistance on longer-term modeling improvements, specifically "to develop a framework for tour-based and/or activity-based models in the future."¹ In fact, a growing number of MPOs have been developing tour-based and/or activity-based models (ABMs). However, despite the growing interest in these advance models, there is much debate in the modeling community about the costs and benefits of these newer techniques. Consequently, although TPB staff has set aside some funds for investigating ABMs, up to this point, none of these funds have been spent. Instead, they have been carried over for several years, with the hope that current research efforts, such as the Association of Metropolitan Planning Organization (AMPO) study of advanced travel models, will shed light on whether ABMs represent the best use of scarce resources for updating the travel model and on how best to proceed with deploying such an effort. **The AMPO study, which is funded by about ten MPOs, has resulted in a final report. \$250,000 in carryover from FY 2011 will be available for consultant assistance to design a framework for applying a tour-based and/or activity-based travel demand model for the Washington region. TPB staff resources will also be devoted to supporting this effort.**

A list of short-term models development activities and maintenance activities planned for FY 2012 are shown below. The short-term models development activities are focused on the recently released Version 2.3 travel model on the 3,722-TAZ area system. This list was developed assuming that the ABM project would not take place in FY 2012. However, the current working assumption is that the ABM contract will go forward in FY 2012, and, under this scenario, TPB staff will likely not be able to complete all of the short-term models development work tasks listed below.

Short-term models development activities

- Depending on the findings from the scan of best modeling practice, there may be new data collection efforts that need to be planned or carried out. Examples could include: 1) Continued analysis of travel time data on freeways (from INRIX), with possible use in model calibration and validation; 2) Gathering data about special markets in the region to adjust trip rates in the model.
- Continue with sensitivity testing with the Version 2.3 model and possibly implement ongoing refinements to the Version 2.3 mode in cooperation with the TFS. Support

¹ National Capital Region Transportation Planning Board, *FY 2005 Unified Planning Work Program for Transportation Planning for the Washington Metropolitan Region* (Washington, D.C., March 17, 2004), 2-34.

the production use of the Version 2.3 model for regional studies and possibly for project planning needs.

- Continue the ongoing use of INRIX highway speed data for informing parametric changes to the Version 2.3 model.
- Supporting the integration of the travel demand model with the new EPA MOVES model for estimating mobile emissions.
- Investigate the development of an airport model that includes a mode choice model component. The existing airport access forecasting process addresses auto driver travel only.
- Investigate the availability of data that could potentially be used for modeling a home-based university and/or home-based school trip purpose.
- Begin an evaluation of the exogenously generated visitor/tourist auto driver trip data, to see if the data fully account for trips made by visitors within the region. If enhanced funding were to become available, begin planning a visitor travel survey and a special events survey, for use in developing a visitor model and a special events model.
- Representation of fares in the model: Consider developing an explicit representation of transit fares by provider and mode.
- Investigate statistically estimating the time and cost coefficients used in the mode choice model.
- Consider establishing an explicit relationship between bus speed and highway speed.

Maintenance activities

- Promoting 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
- Training users in the use of the Version 2.3 travel model
- Provide support for data requests

Oversight: Travel Forecasting Subcommittee

Cost Estimate: \$1,071,200
\$250,000 carryover from FY 2011
\$1,321,200 total

Products: Updated travel models; documentation of models development activities; and recommendations for continued updating of the travel demand modeling process. Possible work plan and/or initial model component for an activity-based model

Schedule: June 2012

5. TRAVEL MONITORING

Household Travel Survey

In FY 2010, a public release version of the 2007/2008 Regional Household Travel Survey data was produced for use in several important TPB planning activities and for use by TPB participating agencies in their transportation planning activities. Staff also provided these users with additional technical documentation and assistance in the use and analysis of these survey data files. In FY 2012, staff will continue to support users of 2007/2008 Regional Household Travel Survey data and update user documentation as required. Further, ~~it is proposed that~~ new household travel survey data **will** be collected from ~~2,400~~ **4,800** households in focused geographic subareas of the region to permit more intensive analysis of specific growth and transportation issues. This proposed additional data collection is in response to the need expressed by local jurisdiction users of the household travel survey to have additional household samples in smaller geographic subareas to analyze specific aspects of daily travel behavior in these smaller geographic areas.

The following work activities are proposed for FY 2012:

- Provide data, documentation, and technical support to users of 2007/2008 Regional Household Travel Survey and the Geographically-Focused Household Surveys conducted in 2011. Update of survey data files and user documentation as required.
- Continue to mine data collected in the 2007/2008 Regional Household Travel Survey the Geographically-Focused Household Surveys conducted in 2011 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.
- **In the Fall of 2011, collect household travel survey data for 2,400 households in the following seven focused geographic subareas of the region: (1) the 14th St NW Corridor in DC from (Massachusetts Ave NW to N. of Florida Ave NW) (2) the White Flint area in Montgomery County (3) the Purple Line International Corridor in Montgomery and Prince George's County (University Blvd from S. of I-495 to Adelphi Rd. (4) the Largo area in Prince George's County (5) the City of Frederick, MD (6) the Reston area in Fairfax County and (7) the Woodbridge area in Prince William County. These seven focused**

geographic subareas represent a range of area types for comparison of differences in household travel characteristics and behavior. Such differences would include variations in household vehicle ownership, daily household vehicle miles of travel (VMT) and daily trips by auto, transit, bicycling and walking.

- **In the Spring of 2012** collect household travel survey data for an additional 2,400 households in six 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. Proposed focused geographic subareas for FY 2012 include: (1) Friendship Heights (in DC and Montgomery County, MD), (2) New York Avenue Corridor in DC, (3) St Charles in Charles County, MD, (4) National Harbor in Prince George's County, MD and Eisenhower Avenue Corridor in Alexandria (5) East Falls Church – West Falls Church Metrorail Station areas in Arlington, Falls Church and Fairfax County, VA and (6) the Dulles North Area in Loudoun County. The specific geographic subareas for additional household travel survey data collection will be reviewed by the TPB Technical Committee and local jurisdiction planning staff.

Oversight: Travel Forecasting Subcommittee

Estimated Cost: \$706,300
\$430,000 carryover from FY 2011
\$1,136,300 total

Product: **Fall 2011 and Spring 2012 Household Travel Survey Data Collection**, Household Travel Survey Analyses, Information Reports and Technical Memorandum, Maintenance of Travel Survey Data and Documentation

Schedule: June 2012

6. TECHNICAL ASSISTANCE

A. DISTRICT OF COLUMBIA

Truck and Bus Restriction Sign Survey – Phase I

The purpose of this project is to begin data collection phase of an inventory of current, on-street truck and bus restriction signs within the District of Columbia. The inventory should include the block location, truck restriction sign location, type of signage, and the borders of the restricted area for each sign. Staff will collect this data and a digital image of each truck and bus restriction sign. Each sign's GPS coordinates will be recorded to produce a GIS layer allowing DDOT to show the point locations of the truck and bus restriction signs on a map with requested data in the comments section for each loading zone.

Cost Estimate: \$25,000 carryover from FY2011

Product: Data

Schedule: September 2010

TOTAL DISTRICT OF COLUMBIA COST ESTIMATE: \$316,000
\$ 25,000 carryover from FY 2011
\$441,000 total

B. MARYLAND

1. Program Development Management

This work task will account for DTP staff time associated with the administration of this Technical Assistance work program throughout the year. Work activities would involve meetings with participating agencies to discuss proposed/new projects, development of monthly progress reports, budgetary reporting and technical quality control. This work task also includes staff time needed for the development of the annual planning work program.

Cost Estimate: \$30,000

Schedule: On-going activity

2. Project Planning Studies

This work task will account for DTP staff time associated with the development of scopes of work for requested project. The work scope will account for technical support in travel demand modeling and alternative evaluations of ongoing and upcoming project planning studies. Work activities will also involve meeting with requesting

tasks, creating projects when authorized, attending project team meetings and progress reporting

Cost Estimate: \$130,000
\$70,000 carryover from FY2011
\$200,000 total

Schedule: On-going activity

3. Feasibility/Special Studies

This work task will provide funding to support technical support on feasibility/special studies as requested by MDOT, SHA and other agencies. Work may include but not limited to technical support in ongoing corridor/subarea studies, initiation of new studies ranging from major new corridor analyses to the development of travel demand forecasts for individual facilities. Project authorizations may occur throughout the fiscal year as priorities dictate.

Cost Estimate: \$160,000
\$40,000 carryover from FY2011
\$200,000 total

Schedule: On-going activity

4. Transportation Performance Measures

- Project Level Evaluation: SHA requires measurable results on system performance benefits in order to compare the relative merits of individual projects proposed for implementation or for use in refining the Maryland Highway Needs Inventory. Such results will assist in determining priorities among the projects to maximize the benefits of the transportation planning and programming process. The results could be expressed in terms of Levels of Service, Travel Delay and mobility criteria, which will be defined and estimated at the appropriate local, subarea, corridor and / or regional levels to enable a consistent assessment of specified projects.

Sub-Item Cost Estimate: \$10,000
\$40,000 carryover from FY2011
\$50,000 total

Schedule: On-going activity

- System Wide Evaluation: This work effort is designed: (1) to provide MDOT and SHA staff with information relating to the effectiveness of ongoing and planned regional congestion monitoring activities in the Maryland portion of the region, and (2) to examine the effectiveness of such programs, including the use of before and after studies (primarily through literature reviews and analysis of existing data rather

than through new collection of primary data). TPB staff will periodically brief MDOT and SHA staff to keep them informed of regional congestion monitoring activities and to discuss possible new initiatives.

Sub-Item Cost Estimate: \$11,000
 \$45,000 carryover from FY2011
 \$56,000 total

Schedule: On-going activity

- Traffic Impacts Evaluation: This work effort is designed to assess on a comprehensive scale the transportation impacts of development, through the analysis of such development at the local, subarea, corridor and regional levels. Different methods and evaluation criteria will be assessed for a variety of projects to appropriately consider their impacts, ranging from delay at intersections for localized studies, to travel modeling and aggregate systems level impacts for larger projects.

Sub-Item Cost Estimate: \$10,000
 \$95,000 carryover from FY2011
 \$105,000 total

Schedule: On-going activity

Cost Estimate: \$31,000
 \$180,000 carryover from FY2011
 \$211,000 total

Schedule: On-going activity

5. Training /Miscellaneous Technical Support

This work task will account for coordination on periodic updates of the transportation networks, land use files, and the model itself with MDOT, SHA and other modals. This task will also account for various presentations and training activities for MDOT, SHA and other modal staff on the latest regional data and modeling procedures. Staff will continue to coordinate with MDOT, SHA and other modal staff on applications of modeling procedures on projects carried at the state level.

Cost Estimate: \$40,000
 \$40,000 carryover from FY2011
 \$80,000 total

Schedule: On-going activity

6. Statewide Transportation Model Support

This project is designed to assist SHA in the development of, and the evaluation of results from the Maryland Statewide Transportation Travel Model. The model is being developed in order to analyze travel at a macroscopic level, i.e., statewide / multiple states, with a view to assessing impacts in Maryland of alternative growth scenarios and other forecast assumptions.

Cost Estimate: \$65,000
 \$15,000 carryover from FY2011
 \$80,000 total

Product: Technical Memoranda

Schedule: June 2012

7. Transportation / Land Use Connections Program

The Transportation / Land Use Connections (TLC) program is an effort to provide technical assistance to local governments in the Washington region in order to facilitate integrating land use and transportation planning at the community level. Begun as a 6 month regional pilot program in January 2007, the project was very well received. It was not only continued in subsequent years, but Maryland supplemented the regional effort with additional funds. This project continues those efforts by similarly reserving such supplemental funds to be distributed in fiscal year 2012.

Cost Estimate: \$115,000
 \$45,000 carryover from FY2011
 \$160,000 total

Product: Grant awards, technical reports from contractors

Schedule: June 2012

8. Multimodal Coordination for Bus Priority Hot Spots

In the spring of 2010, WMATA, MDOT, DDOT and VDOT completed a long range planning study that identifies a 20 year vision for surface transit enhancements entitled the *Priority Corridor Network (PCN) Running-way Evaluation Study*.

A follow-up study will be jointly funded by MDOT, DDOT, VDOT and WMATA and it will build on WMATA's previous study by examining both WMATA and local bus (e.g., ART, DASH, Ride On etc.) service frequencies and speeds, to identify a truly "regional" hot spot prioritized top 10 list for each of the three states.

Cost Estimate: **\$30,000 carryover from FY2011**

Product: Prepare detailed cost-benefit analysis reports on potential for bus priority improvements at select bus operations "hot-spots"

9. Other Tasks yet to be defined

Other tasks are anticipated but not yet defined. This project is established to account for TPB staff time spent in responding to requests for technical assistance by MDOT, SHA, other modals and jurisdictions whose scope of work or characteristics do not conform to the other work tasks of the Maryland Technical Assistance Program. Work under this project will be performed upon authorization by MDOT, SHA and/or other modals and jurisdictions.

Cost Estimate: \$75,000

TOTAL MARYLAND COST ESTIMATE: \$ 646,000
\$ **420,000** carryover from FY2011
\$ 1,066,000

C. VIRGINIA

1. Data/Documentation Processing

This project is established to process requests for data/documents from Northern Virginia and to account for TPB staff time spent in developing scopes of work for requested projects and for administering the resultant work program throughout the year.

Cost Estimate: \$15,000
\$**10,000** carryover from FY2011
\$25,000 total

Product: data, documentation, scopes of work, progress reports

3. Travel Demand Modeling

Supports requests from VDOT, VDRPT and NoVA localities related to demand forecasting and project development activities. Example of work activities include: assistance with documentation, training and customization of TPB's Version 2.3 model for VDOT/NoVA use; and HOV/HOT Lane project development related analyses.

Cost Estimate: \$74,400
\$**75,600** carryover from FY2011
\$150,000 total

Products: as specified

Schedule: on-going

4. Regional Survey- Analysis and Report

Mine the results of the regional and NoVA surveys to extract travel, traffic, demographic and related data specifically for NoVA jurisdictions and report on NoVA trends/patterns. Data elements mined includes: State of the Commute, 2007/2008 HH Travel Survey, and Round 8.2a Cooperative Forecasts.

Cost Estimate: \$ 60,000
\$15,000 carryover from FY2011
\$75,000 total

Product: Analysis results and reports

Schedule: June 2012

5. Travel Demand Management and Non-Motorized Travel

Assist in: (1) monitoring, and evaluation of non-motorized travel facilities (Bike/Ped) including conducting counts and analyses and preparing maps; (2) development of targeted TDM strategies for various NoVA locations as part of VDOT/VDRPT's sub-regional planning efforts.

Cost Estimate: \$75,000

Product: Data files and GIS maps

Schedule: June 2012

6. Regional and Sub-regional Studies

Technical work /analyses associated with planning studies undertaken by VDOT/VDRPT/NoVA localities, such as: **(1) the NVTA's TransAction 2040 Plan;** **(2) WMATA's PCN-Hot Spots study,** (3) VDOT's two HOV/HOT lanes projects in NoVA. The Northern Virginia Transportation Authority (NVTA) is updating its regional long range transportation plan (TransAction 2030). While consultant support to local jurisdiction technical staff will be available, there may be specific tasks on which COG staff support may be sought. Examples of such tasks are attending product output meetings with the consultant team and the TransAction 2040 Subcommittee, attending public workshops, providing input on draft documents, and providing modeling support (primarily regarding the TPB regional conformity model). These tasks will be coordinated with COG staff as they are identified.

Cost Estimate: \$14,200
\$144,000 carryover from FY2011
\$158,200 total

Product: Technical support as requested

Schedule: June 2012

7. Other Tasks to be Defined

\$45,000 carryover from FY2011

\$45,000 total

TOTAL VIRGINIA COST ESTIMATE: \$513,600

\$289,600 carryover from FY2011

\$803,200 total